

State Policy, California Exports, and the SME: Supply chain logistics as a tool to increase global market share

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Despite downward trends in the competitiveness of California's manufactured exports against some other states in the union, the Office of Trade and Technology, the principal state vehicle to help small and medium sized firms (SMEs) expand their foreign trade activity, was shuttered in 2003. The decision to scuttle the program was due to budgetary constraints and to questions regarding the program's overall efficacy in accomplishing its trade expansion objectives.

This paper argues that a state sponsored program to encourage trade by small and mid-sized California enterprises has great potential and should be reopened to help jumpstart firms in their effort to deal with an increasingly complex global commercial environment. However, to be effective the program needs be modified so that trade promotion becomes less the focus, giving way to a more "hands on" approach reflecting the realities of a marketplace significantly different than even a decade ago.

Today's global manufacturing marketplace is characterized by excess production capacity, intense competition, mobile factor resources, a globally educated workforce, sophisticated transportation and computer networks and near instant communications. Competing in this environment successfully requires the ability to design, produce, promote and sell high quality innovative products in a wide variety of markets when opportunities present themselves. However, unless firms can develop appropriate supply chains that can facilitate getting products and materials, together with detailed information, delivered through extended, fragmented, and often inefficient pipelines, and, in the precise manner ordered by the customer, they will have trouble staying competitive in global markets.

The State of California, however, could help the often undercapitalized SME become competitive in these markets by offering advice about how to design and manage supply chains that support product and market strategies. Although large firms have

already begun to realize significant financial benefits from alignment of product and supply chain strategy in order to deal with expanded global business, smaller firms can become overwhelmed by the cost and complexity of the task. Nevertheless, avoiding the hard choices involved in whether to “go global” is not really an option for small companies anymore. In all likelihood their customer base has become global, putting pressure on them to “go global” to retain their relationships. Moreover, the need to reduce cost is constant, requiring firms of all sizes to expand their sourcing and sales spheres in an attempt to realize purchasing and scale economies.

A reconstituted trade assistance program, therefore, should provide state assistance to small and medium sized firms that expressed interest in and had the potential to turn their supply chains into tools that facilitate foreign market expansion. This assistance, furthermore, should be directed toward improving supply chain productivity in general, irrespective of the predominant directional flow of the firm’s business. That’s because the patterns of modern trade are such that classifying a firm as primarily an exporter or importer no longer reflects the increasingly common two-way flow of product within a single firm. Evidence for this is captured in a recent nationwide survey of exporters, which found that of 1100 exporters, 55 percent imported components or products from overseas. For small and medium sized exporters, these proportions were 11 and 38 percent, respectively.¹

We can also expect, according to the authors of a report profiling what they saw in California’s manufacturing future, “that the global manufacturing footprint... even for a single company, likely will involve a mix of locations, with ‘basic’, high-volume production offshore and ‘customized’ production maintained domestically”.² Split production operations of this type will put significant pressure on global supply chains by giving rise to crisscrossing flows of materials, parts, subassemblies, finished products, product molds, and even returned and repaired items. These flows, moreover, will move across multiple borders and between a variety of plants, contract manufacturers, suppliers, distributors, agents and customers. How firms of any size choose to manage these highly specialized multidirectional trade flows - strategically, tactically and operationally - will be pivotal to their success.

Emerging Global Differentiator

Over the past couple of decades companies have worked hard to take time, cost and risk out of their supply chains. Many industrial countries have benefited significantly from these efforts. For example, in the U.S., logistics costs, a major cost component of the supply chain, are now about 9.5 % of GDP, down from 16% in 1980.

Until recently most supply chain productivity improvement has occurred within domestic markets. But the globalization of sourcing, marketing, manufacturing, research

¹ Bremer, Penny Simsek, as reported in “State International Business Programs”, Howard Shatz, Occasional Papers, [Public Policy Institute of California](#), February, 04.

² “One Million Jobs at Risk: The future of manufacturing in California”, [Bay Area Economic Forum](#), March, 05

and other functions, coupled with breakthrough technology enablers in communication, information and transport, has highlighted the importance of extending the benefits of domestic supply chain improvement to the global arena.

Increased interest in improving productivity in the global supply chain is not unexpected in light of the explosion of world merchandise trade over the last decade. Today it is just shy of \$14 trillion and represents about 31% of world GDP. And, according to McKinsey & Company, a world-wide consultancy, trade will grow to \$70 trillion by 2025. This growth in trade, together with such phenomena as functional outsourcing, off-shoring, the rise of non-tariff barriers, and the implementation of stricter trade security rules has, however, increased the overall complexity and cost of international commerce.³ What's becoming clear is that for firms to be successful in the global marketplace, they must now turn their attention to improving global supply chain productivity with the same level of intensity they brought to their domestic improvement efforts.

Supply chain integration

For large (over \$1 billion) U.S. headquartered companies, international markets are no longer of secondary importance. The need to lower operating costs, achieve scale economies and find new sources of revenue is driving multinationals to source, manufacture and sell in foreign locations at an accelerating pace. Reuters points out that the 50 fastest growing U.S. firms had international sales that on average contributed 52% of their total revenue.⁴

While the benefits of globalization are well documented, they can erode rapidly if firms allow associated increases in supply chain expenditures to get out of hand. In an attempt to prevent this many global concerns are now devoting significant resources to bringing down fixed asset and pipeline inventory costs, improving cash flow, time to market and customer satisfaction levels.⁵ Linking nodes of the supply chain is the central focus of this effort. In real or near real time, many large firms are working to connect plants, branches, divisions, subsidiaries, partners, agencies, vendors and customers into a web of sourcing, production, and distribution networks spanning thousands of miles, cultures, languages, time zones and operating systems.

A few of the very largest multinationals are beginning to use global data models to map company wide operational processes. These models allow management to identify core and non-core processes within the firm, which, increasingly has led to outsourcing important but non-core processes and functions to outside vendors. This trend induced IBM to revamp its entire business approach from one that focused on selling hardware to

³ The Gartner Group, an I.T. research and consulting firm estimated that coordinating supply of incoming and outgoing goods on a global scale can account for up to 28% of cost of goods sold. This is 2-3 times the domestic figure. "Next Generation Transportation System", [Eyefortransport](#), March, 04

⁴ [Information Week](#), April 11, 05. See also Reuters.com

⁵ AMR, a leading researcher on the supply chain reported recently that IBM has reduced overall costs by \$12 billion since 2002, when it began to tie all the pieces of its supply chain together, [Journal of Commerce](#), February 2005.

customers to one that emphasizes selling global supply chain solutions. The company has bet the bank that large companies no longer want to own and operate non-core functions and the assets associated with them. Big Blue reasons that firms would prefer to pay for such functional requirements as material sourcing, information and inventory management, logistics and order fulfillment on an as needed basis, especially as the demands of globalization make these activities more complicated and costly to integrate and operate. IBM is now capable of digitizing these functions and offering them over the internet “on demand”, freeing their business customers to concentrate on higher value added activities – such as research and design, engineering, and promoting brand image around the world. According to an IBM spokesman, “IBM will now be able to help clients (no doubt the very largest) globally address complex transformation objectives in a number of industries such as transport and logistics.”⁶

Cummins Engines and DuPont Chemicals each have tackled the complexity of operating in many diverse markets by focusing on integrating and centralizing the data scattered throughout each company’s worldwide operations.

In the case of Cummins, the firm decided that if it was going to operate successfully in the global arena it would be critical to base its business decisions on information taken from a single, company-wide, standardized and integrated database. To do this it had to integrate its 18 separate ERP (Enterprise Resource Planning) systems running autonomous global business units onto a single Oracle platform. Not only has the integrated platform provided standardized, error free data throughout the company, it has allowed easy integration of application programs unique to specific locations and tasks. For example, in Brazil, unless importers provide highly specific documentation to customs authorities, merchandise can sit for days, weeks and even months waiting for the information that will satisfy Brazil’s strict customs’ requirements and permit the release of cargo. The standardized ERP system has allowed Cummins to plug a trade based application program configured around Brazil’s Customs’ rules into it and get clearances within hours.

Meanwhile DuPont Chemicals has improved its global operations, shading millions of dollars from its annual \$1.5 billion logistics bill, by establishing an integrated global web portal. The portal connects customers, suppliers, logistics providers, agents and regulatory authorities across its 135 manufacturing and processing facilities in 70 countries. This work-in-progress is on track to reduce DuPont’s inventory carrying cost significantly (each day of inventory reduction represents \$25 million in savings), satisfy customer demand for in-transit visibility and help the company comply with the increasing number of regulations dealing with cargo security.⁷

The focus on improving global supply chain operations is not limited to “traditional” blue chip firms either. A few years ago, Amazon.com, the world’s largest e-commerce company finally got around to adding the one feature that had kept it from expanding more rapidly into the global arena: its inability to reliably quote a price to on-

⁶ American Shipper, January 05

⁷ “DuPont takes a global view”, Journal of Commerce, February, 04

line customers that included all costs to the foreign customer's doorstep. This shortcoming has been dealt with, however, as a result of Amazon's recent alliance with NextLinx, Inc. NextLinx (which was acquired in 06" by Management Dynamics, a global trade management company) is a web-based application service provider (ASP) that designs software that in real time can determine customs' product classification, duty, taxes and destination transport costs for products shipped to a wide range of foreign locations. The electronic commerce provider is now on track to providing this "total cost" feature, which should allow it to expand its foreign market share considerably.⁸

Supply chain collaborative relationships

The term supply chain partnership is used loosely to describe a collaborative relationship between channel members that is designed to achieve mutually agreed upon operational and strategic goals. Relationships can exist between a variety of channel participants, including subsidiaries, competitors, vendors, contractors, distributors, agents and even government agencies. These partnerships can be formal or informal, can vary in scope and duration and can include profit sharing provisions. They differ from traditional relationships in that their success is based less on the number of transactions that take place between parties than on the achievement of mutually established goals. They are becoming increasingly commonplace in global commerce because of its complexity, cost and elevated risk, enabled in large part by advances in information technology and communication systems. Two types of collaborative relationships are described below: those between the shipper/manufacturer and the logistics provider and those often referred to as "production network" relationships.

Shipper-logistics partnerships

Over the last ten years or so many companies in global commerce have decided that in order to compete successfully in today's environment they must concentrate on improving performance in key activities and functions that they have identified as strategic core competencies, e.g., design, engineering, branding, and outsource other less strategic activities. This was the basis of the IBM decision to refocus its business that was noted earlier. Logistics, particularly international logistics, has often been viewed as outside what is considered the core competency of the firm and, therefore, a prime candidate for outsourcing.

This shift in thinking within industry is occurring at the same time that logistics providers are increasing their ability to take on and manage a larger number of supply chain activities that had previously been handled internally by the shipper-manufacturer. Today, it is not unusual to see logistics companies – some are household names like UPS and FedEx, but many are not - handle such traditional corporate activities as network design, distribution planning, materials sourcing, order fulfillment and even a modest amount of manufacturing and assembling of product on behalf of their clients. These

⁸ It's noteworthy that in a recent survey of 170 multinationals by the Aberdeen Group, (a research firm) many firms indicated that e-commerce was the preferred way of testing product demand in new markets. 41% in fact said that creating an "easy on line ordering experience" is one of the capabilities they'd most like to have. Included in this are value adds like landed cost, promised delivery dates, on line order confirmation, etc. "New Strategies for Global Trade Management", Aberdeen, March 05.

relationships are designed to bring strategic benefits to both partners, from controlling costs to preserving long-term relationships with key customers.

An example of such a relationship is that between Cisco Systems and UPS⁹. For the network hardware manufacturer, UPS manages the flow of product from contract and parts manufacturers in North Africa, the Middle East and Europe, through a UPS owned distribution facility in Europe to customers scattered among 20 countries. UPS uses its proprietary algorithmic software to determine the optimum inbound and outbound flows that keeps costs under control and customer service levels high. The relationship involves a flow of over 1 million boxes per year and includes managing a customer logistics call center and light assembly for Cisco. This is clearly a high level strategic partnership which is representative of the kind that is becoming increasingly commonplace between global logistics providers and their larger clients.

Production networks

The rise of so called “production networks” is another phenomenon that underscores the importance of high level cross border information and product management. These networks are usually established around firms with established global footprints, like Caterpillar, Intel or Boeing, which take the lead in stringing together a range of alliance partners – company subsidiaries, independent contractors, sometime competitors, vendors and logistics providers and others – to produce and deliver complex, large scale projects. Typical examples could be bringing power to remote areas of the world or assembling a new generation aircraft.

The complexity and difficulty of managing these networks has grown exponentially as large quantities of parts, materials, supplies, semi-finished production and information flow between these often temporary alliances of network partners. However, according to a study of 600 large enterprises by Deloitte Consulting, a few of these networked enterprises are beginning to get the management of these flows right.¹⁰ These enterprises are among those that are utilizing new tools and technologies to reengineer internal processes and collaborate with external vendors and partners to move closer to the goal of end to end supply chain optimization, facilitating the corporate goals of increased revenues, profits, and shareholder satisfaction levels.

The SME Challenge

The task of the SME in an environment in which the supply chain will be a major determinant of long term success is to find a way to develop an organizational capability that can quickly and cost-effectively take advantage of opportunities and manage challenges that arise in the global marketplace. A good place to begin is by making the effort to understand the basic factors in the environment that most affect the firm’s ability to compete.

⁹ Remarks of Remko Van Hoek, Cranefield School of Management

¹⁰ Global Logistics and Supply Chain Management, April, 04

In addition to the actions of multinationals discussed above, there are three other external conditions that form the competitive environment in which the SME finds itself operating today. Although the SME has little or no ability to shape these conditions, it is nevertheless essential to grasp their importance in order to develop a supply chain appropriate for the company and its product line. These three additional conditions are: increased regional competition, deregulation of U.S. transport, increased security regulations.

Regional competition

The success of global, regional and bilateral trade liberalization efforts has led to a substitution of less expensive parts, materials and products made in the emerging economies of the world for similar items previously sourced from higher cost U.S. suppliers. For example, after the NAFTA was signed, many U.S. based auto parts manufacturers were the beneficiaries of a steady stream of parts and subassemblies flowing from the U.S. to Mexico's auto assembly plants. However, in the more than ten years following the 1994 accord, Mexican suppliers became more proficient in supplying the local plants, thereby reducing the flow of exports from the U.S.

The same phenomenon is now occurring in Southeast Asia. China has continued to expand its manufacturing capabilities, producing an array of increasingly sophisticated goods. It is thus natural that Asia based suppliers to these manufacturers would begin to support this production (happily nurtured in large part by firms from the U.S. and Europe). This has significantly reduced reliance on U.S. based suppliers. Delphi, which has operated in China since 1993, now buys auto parts from over 250 tier one and two suppliers throughout Asia, Europe and to a lesser extent North America. Clestica, a contract manufacturer in the electronics industry for such companies as H-P, IBM and Nortel Networks buys thousands of components for its manufacturing plants. It relies upon specialist logistics companies to supply parts to it purchased from vendors scattered throughout Asia.¹¹

In addition to these examples, the recently signed ASEAN-China trade accord, expected to increase trade by over \$140 billion by 2010 within the region, along with a similar pact signed with India, are likely to increase the competition for markets traditionally served by U.S. exporters.

Transport deregulation

From the point of view of price and service, the deregulation of key U.S. transport sectors, i.e. rail, truck, air and ocean that began in the early 1980s and culminated in the 1998 Ocean Shipping Reform Act, in absolute terms benefited all manufacturers, regardless of size. But in relative terms, large shippers have benefited at the expense of smaller shippers. For example, the antitrust immunity that for over 75 years had permitted ocean carriers to collectively set common tariff rates and service levels was all but removed in the 98' ocean legislation. The result is that rates and service are now governed primarily by market forces.

¹¹ "Roadwork in China", Information Week, August, 04

Today firms with large export volumes have a significant advantage over those with lesser volumes because they are permitted to enter into confidential price and service contracts with carriers that are based upon volumes, routings and other factors. Large manufacturers are leveraging their volumes to extract price, service and value adds that are simply not available to SMEs.

Not only can large firms end up with lower per unit cost and superior service, they can also leverage cargo volumes across entire global production and distribution networks. This so called “network advantage” has been greatly facilitated by advances in information technology. For example, large shippers and carriers are today establishing mutually beneficial volume contracts based upon interactive optimization algorithms that consider simultaneously multiple cost and service factors important to both parties. A win-win outcome is the result. Shippers get the price, schedules, service levels, and equipment they need while carriers are able to optimize cost, equipment utilization and information flow tradeoffs.

Goodyear Tire and Rubber Company has used its market power and technology investments to realize direct global transportation savings of 17 percent. It achieved this by first using interactive technology applications to aggregate 220 worldwide trade lanes. The firm then invited carriers to submit on-line interactive bids that included rates, sailing frequencies, handling fees and credit terms. In addition to benefiting from direct transport savings in ocean freight, Goodyear realized significant indirect savings from a centralized data base of rates and charges available to all of Goodyear’s worldwide divisions. This has significantly reduced the total amount of time it takes to negotiate contracts with carriers and logistics providers.¹² Unfortunately few SMEs possess the operational networks, personnel skills or cargo volumes to benefit from these recent deregulatory changes and technological opportunities.

Burdens of cargo security regulations

Since the 9-11 terrorist attacks, governments from around the world, led by the U.S., have increased security regulations that govern cross border trade. Some of these regulations are in effect now; others have been signed into law and will take effect in the near future, while still others will result from future legislation.

These regulations cover flows of both the physical product and information about the product. C-TPAT (Customs, Trade Partnership Against Terror) is one example. So far this is a voluntary program in which U.S. Customs has asked the trading community to join with it in tightening up cross border supply chains. Focused primarily on containerized imports, it asks importers to review and upgrade internal supply chain processes and to make investments to improve the security of their physical facilities, e.g. perimeter fencing and lighting around distribution facilities. In return, compliant importers are supposed to receive favored treatment in expediting the movement of their cargo through ports of entry.

¹² “BF Goodyear centralizes global ocean transport”, [American Shipper](#), August, 04

Another example of a rule already in effect is the so called “24 hour” rule. This requires that carriers in foreign ports electronically notify U.S. Customs of the details of cargo received for shipment 24 hours before cargo is loaded on board ship. Carriers get this information from cargo principals who now bear much greater responsibility for the timeliness and accuracy of data than ever before. Further, under provisions of the SAFE Port Act of 2006, the 24 hour rule will soon be expanded to require the importer to provide more directly fed electronic data to Customs about the product even earlier in the supply chain. It is expected that data regarding component suppliers, manufacturer or agent’s name and address and length of time in business, will be mandatory.

An industry specific regulation is the so called U.S. Bioterrorism Act. Prior to this act most companies involved in the food processing business had to register their domestic and foreign food facilities. This law has now expanded to include providing information to the FDA regarding all upstream ingredients in the product and downstream parties involved in distribution. The law will require almost every food business in the U.S. supply chain to keep detailed records of receipt and shipment of goods.

As burdensome as these rules are for the SME involved in global trade today, it is a burden that is only likely to increase in the years ahead. The WCO (World Customs Organization) is in the process of trying to standardize security procedures among its 163 member nations. Other modes of transportation, e.g. rail, truck and air are beginning to have their own versions of the 24 hour rule applied on cargos that move into and through the U.S. And the 2002 Security Assistance Act lays the groundwork for more rigorous compliance demands on exporters.

At minimum over the next year or so we can expect to see a requirement that firms engaged in international trade be able to account for cargo status at virtually any point in the pipeline. To accomplish this, firms will have two choices. They can engage the services of logistics providers like forwarders to provide continual manual updates as cargo moves from point to point, or they can invest in increasingly sophisticated track and trace technologies such as EDI, internet based platforms and RFID (radio frequency identification devices). These technology solutions will require connecting a myriad of supply chain participants, from overseas vendors, to country customs authorities, to a variety of carriers, to warehouse and customer facilities. Some firms will want to connect these visibility systems with in-house ERP systems so that data can be easily incorporated into company-wide operations.

Companies that make these investments in visibility technologies, even if the initial motivation is regulatory compliance, are in a position to reap significant supply chain benefits that extend far beyond avoiding custom’s penalties. But the smaller company, unable or unwilling to invest in technology to comply with security requirements, is likely to find itself falling farther and farther behind firms that do make these investments. For example, laggards in the food industry could find themselves at a real disadvantage to companies like Berner Foods. To comply with the Bioterrorism Act, Berner, a small mid-west firm, had to invest \$300,000 in a track and trace system that

monitored the flow of ingredients and product through its entire supply chain, from supplier to end customer. It spent another \$300,000 to integrate the system with its ERP system. But, in making the choice to comply with its regulatory obligations in this manner, it was also able to realize significant supply chain benefits, such as the reduction of expired inventory, down from \$ 250,000 to under \$10,000.¹³

State Assistance in an Age of Global Logistics

Across a wide range of industries, California's small and medium-sized enterprises produce some of the world's best and most innovative products. Nevertheless, unless these firms can support these products with fast, flexible, low cost, and customer responsive supply chains, they will continue to fall behind companies that have figured out that product quality and excellence in supply chain logistics are two sides of the same coin.

Playing catch up in the supply chain area, however, is not easy. Most senior executives do not have a supply chain background and in all likelihood still view logistic and transport activities as necessary evils. These activities, at least among the management in small firms, are often seen as cost centers where success is measured mainly in terms of cost minimization. Add in a desire for fast, flexible and visible supply chains required by customers today, and it is easy to see why smaller firms may assiduously avoid making the hard choices that would enable their companies to become more competitive in emerging global markets.

However, logistics and supply chain savvy state policymakers can help level the playing field for the SME that produces quality, innovative products but needs assistance in supporting these products with the appropriate supply chain strategy. Various levels of support could be offered. It could range from advice about supply chain processes in general to more in depth diagnosis regarding what the firm should do to develop a supply chain that's appropriate for its products, cost structure, destination markets and overall strategy. Assistance could include recommendations regarding professional conferences, best practices, benchmarking, education programs, target market strategy and the possible use of outside consulting expertise for process, and technology improvements.

Before committing resources to the effort, though, state officials would need to qualify potential recipients. Rigorous qualification of prospective aid recipients would represent an important change over the way the state selected firms in the past. As Howard Shatz of California's Public Policy Institute in testimony before a Congressional committee looking into the role of state sponsored assistance to small export oriented firms stated, "Clients should be carefully chosen....When it comes to assistance, it is important to choose strong firms....Working intensively with all firms that ask for help is not likely to be effective"¹⁴.

¹³ Information Week, May 23, 05

¹⁴ "Public Policy Institute of California", August, 2003.

The first qualification, of course, would be that the firm produces quality products with reasonable demand potential in selected foreign markets. Assuming a reasonable level of demand, eligibility should center on how firms rate in three areas:

- Approach to internal process improvement
- Management's commitment to supply chain improvement initiatives
- The firm's use of information technology to support supply chain operations

Even though a firm might lack much in the way of international experience, an examination of the firm's track record in these areas, if only in domestic markets, would be helpful in determining the ability of the firm to establish a supply chain capable of penetrating both developed and the more infrastructure challenged emerging markets of the world.

Process improvement

For at least the last quarter century, U.S. companies have concentrated on increasing their productivity. In the process many have transformed themselves from functionally oriented businesses into organizations focused on performance optimization across the entire company. Long standing barriers to cooperation and coordination between departments, divisions and entire business units have been eliminated or down-sized in the effort. Companies now look at what is required to improve critical processes that bridge multiple departments – such as reduced total order cycle time, improving inventory velocity and on-time deliveries. These efforts now have reached beyond the internal operations of the enterprise, to include how firms link activities with external supply chain entities like suppliers, vendors, partners and customers to achieve network-wide goals. The positive results of these efforts are well documented among a variety of sources, including practitioners, academics and research institutions.¹⁵

Now, as companies look for ways to deal with the complexities of supply chains that stretch around the world, the process improvement focus has shifted to the global arena. Although large firms are making progress linking processes within and between internal and external partners, small firms with little experience in global markets are not likely to have well tested processes in place that can be rolled out when the occasional international sales opportunity arises. In consequence, billions of dollars in potential export sales are lost every year, often because firms are unable to meet customer requirements for such value added services as landed cost pricing, direct product delivery, postponed assembly, expedited customs clearance, reliable track and trace and automated in-route problem resolution. This emerging two-tiered reality is borne out by a recent report by the Aberdeen Group. It revealed that of 170 large and small firms, fully 50 % of large firms with \$ 1 billion or more in revenue use specialized software in

¹⁵ Various metrics can be cited to substantiate success but perhaps the most meaningful is that in a survey of Standard & Poor's 500 organizations it was revealed that companies that can bring inventory levels down by 20 percent lift their shares by as much as 6 percent. The article citing this went on to say "...its not uncommon for those companies to see a 25 percent improvement in customer service, 10 to 20 percent reduction in delivery times and material costs and more than 40 percent improvement in cash-to-cash cycle times". Schlegel and Smith, "The Next Stage of Supply Chain Excellence", Supply Chain & Management Review, March, 05.

their international trade processes, while only 16% of small or mid-sized respondents did so.¹⁶

Since success in global markets will become increasingly dependent upon the strength of a firm's supply chain, California officials will need to have the ability to evaluate key processes of the firm before offering state assistance. Officials would want to know, for example, whether or not the firm had undertaken programs to measure and improve such supply chain processes as accelerating order to cash cycles, reducing pipeline inventories, improving on-time deliveries or forging supply chain collaborative relationships with 3rd or 4th (4th party providers are non-asset based and manage relationships with asset based providers on behalf of the shipper) party logistics providers.

Experience in the processes involved in selecting and managing 3rd or 4th party logistics providers could very well be indicative of a company's ability to expand successfully into unfamiliar markets of the world. For example, the management of raw material flows, packaging, and delivery of finished product are complex and difficult for just about any firm in today's just-in-time environment. For this reason it's becoming increasingly popular among large manufacturers to leverage the experience and scope of operations of global logistics providers, who are now taking on significant strategic, tactical, as well as customary operational responsibility for these tasks. Results are impressive, often bringing significant improvement in productivity and profits. (See earlier discussion of Cisco-UPS relationship).

But smaller companies have traditionally kept the broader management of these supply chain activities in house, choosing to rely upon the services of such outside vendors as transport carriers, forwarders, brokers and others to handle routine operational functions only. In general these relationships have been arms-length and transactional, partly because 3rd parties have not found it in their interest to commit large scale resources to small firms where volumes were low and there was a steep outsourcing learning curve to get over. And partly because management at SMEs has traditionally held the view that the best provider was the one with the lowest per shipment price.

However, this reluctance to form 3rd party strategic relationships among the SME community may be changing today. Although there are multiple reasons for this, two stand out. First, the logistics-provider industry has matured significantly over the last couple of decades. It has evolved from one in which broad categories of providers, e.g. carriers of all transport modes, freight forwarders in both domestic and international trade, customs brokers, warehouse firms, etc. have customarily offered basic transaction based services only. However, today, the industry has evolved into one that is much wider and deeper, comprised of multiple industry segments with a variety of service offerings, and routinely engages in shipper-provider contractual relationships.

Many of these offerings have a specific industry focus, are based upon state of art processes, are technologically sophisticated and are priced, sometimes with gain-sharing

¹⁶ "New strategies for global management", Aberdeen Group, March, 05

provisions, according to a set of mutually agreed performance metrics, e.g. reduced order cycle times, established between shipper and provider. This kind of strategic focus allows providers to expand the way they price their services, becoming less dependent on transaction based pricing, which favors large shippers with large volumes, to a more outcome or goal based approach, where small shippers can more easily attract the interest of logistics providers.

The second reason that we are beginning to see more strategic process oriented relationships between shippers and providers today is that the outsourcing of non-core functional operations is becoming widespread among companies in industrially developed nations. The phenomenon of outsourcing has spread from those activities that were clearly cost sensitive and non-strategic, like accounts payable, to those with a clear strategic or near strategic importance within the firm, e.g. manufacturing, purchasing, information technology and logistics and other supply chain processes.

Ikor Industries is an example of a firm that kept logistics management responsibilities under tight internal control. It was the way Ikor Industries had operated since its inception in 1999. But a few years ago this small \$3.5 million per year manufacturer of specialized industrial filtration equipment found a way to realize the same benefits that large companies do through outsourcing the management of its international logistics to a 3rd party provider.

Although the process of developing a strategic relationship with a 3rd party can be lengthy and complex, Ikor, in spite of its small size, was successful in establishing the relationship relatively quickly because functional outsourcing was part of the company's culture. As a result, when it came time to figuring out how to upgrade customer service, shorten lead times and improve on time deliveries to increasingly disgruntled foreign buyers, Ikor had experience in both evaluating and then measuring the performance of its strategic partners. The results have been impressive. One to three weeks have been cut from order cycle times, distribution facilities have been eliminated and transport costs lowered through consolidation of small shipments. Paul Lesnick, president and CEO of Ikor stated recently "We entrust" ...the 3rd party..."with the most precious asset we have – our customers".¹⁷

Management commitment:

If California SMEs expect to be successful in exporting to such distant markets as China (it's estimated that today there are between 100 and 200 million brand conscious middle class customers), to the emerging markets of Central Europe, (there exists a high demand for environmental and medical technology products, industry strengths of California), to countries like Mexico where bilateral trade agreements are in place, and to the traditional developed markets, senior management must drive the supply chain logistics changes necessary for success.

Senior management in many large firms has already recognized the importance of supply chain logistics process improvement as earlier examples in this report pointed out.

¹⁷ Inbound Logistics, July 04

But, management in smaller firms must also display such a commitment before receiving the benefit of state assistance. It's not likely that the CEO of an SME will have a strong logistics or supply chain background (this is no longer true with large companies, to wit, Toyota announced recently that its newly appointed CEO rose to the top via a supply chain career path). However, the CEO and those around him or her must be 100% behind any effort to move the company from a functional to a process based organization. Without this support, the natural resistance of organizations and people to change will inhibit meaningful progress.

Cascade Design, a Seattle based manufacturer of outdoor camping equipment with 1998 revenues of \$35 million, invested in an ERP (Enterprise Resource Planning) system at the turn of the century in order to integrate data from disjointed legacy systems and reduce manual input that had caused a high incidence of data error. Predictably, few in the company supported the highly disruptive process changes and financial commitment required to install the system at the time. But its chief financial officer (now CEO) drove the process and transformation, enabling the firm to expand sales to Europe, Australia, and Canada and throughout the U.S. The firm's gross sales are now approximately \$100 million; it has much more control of and visibility to critical data, and the firm can more easily react to market opportunities when they arise.

It's not everyday that firms with sales revenues of only \$35 million are inclined to make the kind of financial and organizational commitment that Cascade management did in 1998. Nevertheless, California trade assistance personnel need to have the ability to assess whether senior management in candidate firms support supply chain improvement efforts. For example, even a limited initiative such as the integration of the often stand alone transport functions of rail, truck, and intermodal into a single department that can coordinate transport activities across products and business units, would be a positive sign that management recognized the importance of integrating logistics in order to support its broader market strategy.

Information technology

Finally, assistance from the State of California should consider the SME's predisposition to the adoption of information technology that supports its supply chain process initiatives. As discussed above, large firms have invested heavily in a wide variety of systems and applications to automate reengineered processes – from robust company wide systems like ERP and SCP (supply chain planning) to more limited applications like CRM (customer relationship management), PLM (product life-cycle management), WMS (warehouse management systems) and TMS (transport management systems). The goal of these investments is to eventually link all company-wide processes – planning, sourcing, making, fulfilling – into an optimized supply chain enabled by real-time information capabilities.

Going forward SMEs will need some of these abilities to stay competitive in global markets. Technology that facilitates process integration will be required whether the firm is a single business unit seeking to expand directly into export markets or as discussed earlier, chooses to become part of a global production network where it

functions as a key supplier to multinationals. Some type of basic ERP or order management system, even if home-grown, that integrated operational and financial data into a central database would be an important condition in either case. Having one or more order, customer, warehouse and transportation management systems that integrated with the ERP system would also demonstrate potential for meeting the rigorous demands of global expansion.

A company like Sealing Devices, Inc. is an example of a small company that would warrant the attention of policy officials wanting to encourage more export business. This under \$100 million N.Y. based manufacturer and distributor of electronic sealing devices has over 12,000 mostly domestic customers, many of whom require customized production and delivery. The firm recently upgraded its ERP and database systems, allowing it to integrate a variety of specific applications, e.g. CRM, accounts receivable, pricing bids, etc. Company officials are more than satisfied with the results: quote maintenance costs have fallen 66 percent, orders are filled the same day as received, and sales revenue has risen 12 percent. If located in California, this would be the type of company that policymakers should target and encourage to engage in more international trade. Its product is state of the art, it is used in a wide variety of highly technical industries, and management is willing to make the technology investments necessary to compete in the 21st century.¹⁸

In addition to these basic process integration applications, a number of international trade specific application programs are becoming increasingly available to the SME. Broadly this software falls into three categories:

- Compliance, duty and tax and denied party determination. These applications are comprised of huge databases that contain trade rules, regulations, duty and tax rates and restricted party lists that govern trade among the majority of the world's trading nations. Using complex algorithms, these programs enable optimization among thousands of company and trade specific variables.
- Pipeline product and information visibility and event management programs. These programs enable real or near real time product and document visibility from point of origin to destination. Many also include event management capabilities which trigger alerts to selected parties (or in some cases automatically resolve the problem according to prescribed decision support rules) when pipeline interruptions occur.
- Transportation and warehouse management programs. These applications facilitate the interface between shipper and transport or logistics provider in a variety of ways: consolidate small shipments into larger ones, expedite and upgrade cross-dock operations, improve contract procurement and management processes, facilitate rate procurement and shipment booking processes, analyze carrier performance, and facilitate the invoicing, payment and auditing processes.

¹⁸ Global Logistics and Supply Chain Strategies, Feb 05,

Most all of these applications are supported by an automated document creation capability.

The shipment volumes of smaller companies wanting to expand into global markets may not justify hosting these applications on in-house systems. However, alternatives do exist and should be explored by those companies serious about expanding their global presence. One alternative is to acquire the capability through the services of an Application Services Provider (ASP). These firms host and maintain software for the client, providing access over the worldwide web on an “as needed basis”. This approach eliminates the user licensing and maintenance costs entirely, although a slightly more generic product may be provided to the customer than he would get through proprietary software hosted in-house.

Another alternative is to engage the services of one of an increasing number of forwarders, carriers, or 3rd or 4th party logistics providers that are beginning to incorporate many of these technology capabilities into their traditional service offerings.

These alternatives to owning trade software require careful investigation by the user to determine the cost/benefit of various options. Once again this is where state policymakers who understood the pros and cons of these application programs and the strengths and weaknesses of logistics providers could play a crucial role in helping the SME gain a foothold in the trade arena.

Conclusion

California manufacturers are heavily engaged in export trade: as direct exporters, as providers of inputs to exporters, and as importers of materials and parts that become part of products that are exported. Small businesses account for a large share of this trade, ranging somewhere between 30 and 40 percent of the total.¹⁹ The financial well being of the state, therefore, is heavily dependent on the SME’s continued ability to compete in the global economy.

This ability to compete, however, is threatened by rapidly unfolding external events that are largely beyond the control of the SME. Multinationals’ drive to rationalize global operations, an increase in regional competition, transport deregulation and the investments required to comply with government’s security measures, are all developments that make it more difficult for the small business to compete for global market share.

Still, these relative disadvantages can be overcome by small firms today if they are willing to incorporate a supply chain point of view into their business processes; becoming, thereby, a customer focused rather than a product or functionally focused

¹⁹ Shatz, “Small business and globalization of California’s economy,” testimony before House of Representatives, Public Policy Institute of California, Sept, 05.

enterprise. Such a reorientation will enable even the smallest of firms to target and deliver increasingly segmented customer value. Examples would be fast, precise and flexible deliveries, total landed cost pricing, downstream value adds such as assembly and light manufacturing, and end to end pipeline visibility.

However, shifting the firm's competitive model from a product centric to a process centric approach will not be easy for top management in many small businesses. Executives may not be trained or even appreciate the importance of supply chain logistics in today's global marketplace. But the longer management postpones developing these capabilities the harder it will be to catch up with those firms that recognize that continuous improvement in their global supply chain operations is the only way to keep customers satisfied and profits high.

This is where the State of California could play a large and important role. A reconstituted state program to help small and medium sized companies develop a supply chain logistics mentality and capability would be an investment that paid significant benefits to all Californians.

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