

Intercompany operating ties can create huge savings, but not until a company changes the fundamental way it does business.

Intercompany Operating Ties:

Unlocking the Value In Channel Restructuring

Recently, Xerox slashed inventories and related assets by nearly a billion dollars by coordinating the product flow through its channel of supply and distribution. Fred Hewitt, Xerox's vice president of central logistics and asset management, noted:

The process is front-end loaded: The biggest benefits flow from doing the simplest things at the beginning. But planning and performance measurement must change radically for business processes to change. You must take down your assumptions brick by brick.

Xerox's experience is mirrored by the stories of several other leading companies who have begun to unlock the value in channel restructuring by developing intercompany operating ties.

In a recent study, we interviewed over one hundred executives in more than forty companies about the ways in which they have begun to create and manage innovative intercompany operating ties. These arrangements enable a company to coordinate the manufacture and flow of products throughout the entire channel, from the supply of raw materials or components to the movement of finished products into the customers' hands. We observed that the emergence of these arrangements is beginning to transform the structure of several industries, requiring managers to develop new ways of managing their businesses.

Several of the companies that we studied developed innovative arrangements that have generated extraordinary benefits. These include operating cost reductions exceeding 30%, as well as significant increases in sales, and improved supply continuity, flexibility, and quicker response to changes in consumer needs. And, like Xerox's initiative, most of the effective programs have been self-financing: The largest gains were produced early through process simplification and intercompany coordination, released substantial capital invested in inventories, and required little investment in new assets.

In contrast, other companies, trying to do many of the same things, have encountered serious problems - alienated customers, cost overruns, and, ultimately, canceled projects. This is not surprising: Intercompany ties seem deceptively tactical and simple to implement, but in reality require fundamental changes in the way managers think about how a company does business.

Take the example of ESC, Ltd. (a disguised name), a leading European industrial supply company. Faced with the apparent need to build several new facilities and with the prospect of intra-European free trade, the company's executive committee authorized its vice president of operations to conduct a "challenge everything" study of its business operations. In order to look at the company's business in a new way, the vice president shifted his focus from the company's internal operations to the product flow through the whole channel, including suppliers and customers. His objective was to understand whether the flow was efficient, and if not, to devise measures to overcome the impediments to efficiency.

What he saw was surprising. Virtually all of his high-volume products were consumed steadily - with very little fluctuation from day to day, or week to week - by the end users. Yet these same products were characterized by a surprisingly erratic order pattern. This forced the company to carry high inventory as well as excess capacity, and often to interrupt manufacturing schedules to accommodate unexpected peaks. (The overall order pattern for a representative product in a typical region is displayed in Exhibit 1, figure 1a; national factory output for the same product is displayed in figure 1b; and national inventory levels for the product are shown in figure 1c.) The company's suppliers were similarly affected.

When the vice president focused on a representative region and analyzed each customer, he found that the fluctuations in orders from a few large customers dominated the order patterns and thus were causing most of the problem. (This is shown in Exhibit 1, figure 1d.) These customers' large, infrequent orders created spikes in product demand that were amplified as each organization in the channel ordered from the next. In operation, the channel looked like the python that swallowed the pig. With end-customer demand being, in fact, very steady, these erratic orders were costly for the customers as well.

When this became clear, the vice president realized that everyone in the channel had been focusing on responding efficiently to a fundamentally illogical replenishment pattern, rather than on fixing the underlying problem. But because the problem lay *between* the companies rather than within a company, it had remained hidden.

The solution seemed startlingly simple: Coordinate the channel so that, for the few large customers who accounted for most of the fluctuations, product would flow smoothly and steadily from the beginning to the end of the channel. The company proceeded to de-

velop a "standing order" arrangement with these few large customers, to provide steady weekly deliveries of their high volume products. Delivery quantities were reset in periodic meetings of supplier and customer operations managers, with contingency plans so that customers could order increased quantities if an unexpected need arose.

This steadied the channel product flow, and allowed the vice president to reduce his inventories and reorganize his manufacturing process. (Exhibit 1, figure 1h shows the new order pattern for both large and small customers. The overall order pattern is displayed in figure 1e. The newly-steadied factory output is shown in figure 1f; and figure 1g shows the reduced inventory levels.)

The operating costs of the channel fell by over 35%. Inventory levels were cut in half, the company was spared a multi-million dollar capital program, and stockouts dropped substantially. Logistics-related labor costs per unit of product decreased greatly due to a more stable workload at warehouses, increased flow-through transshipments, and newly-standardized work practices.

The company became able to ship more frequently and pack in a standard format that was very easy for the customers to receive and put away, significantly reducing customers' costs and inventory levels. Because product delivery patterns now were predictable, the company was able to more easily stabilize its manufacturing schedules. The new stability also allowed the company to issue firm, long-range forecasts to its suppliers, with commitments to purchase the materials on a "take or pay" basis, in return for significantly lower prices and supply certainty. Everyone in the channel gained substantially.

The company found that its sales process changed in unexpected and favorable ways as well. The efficiency of the new system freed the sales reps from the need to respond to customer service complaints, which had taken a substantial amount of their time. The reps began to focus much more on the other aspects of the sales process, such as end-user selling. In newly-created periodic operational review meetings between the company's regional operations managers and the customers' purchasing and operations managers, new relationships and trust developed. The combination of the increased sales focus on more productive selling and the enhanced efficiency of product flow led several large customers to broaden their purchases of the company's product line.

Even though the company is well-recognized for its sophisticated management methods and product development capabilities - and it has a number of well-managed customers and suppliers - it took years for the company to discover this deceptively simple, and seemingly obvious, solution. In the past, a major competitor had tried and failed to implement such a standing order system. This raises two related questions: (1) Why did it take so long for op-

erations management to recognize the problem? and (2) Why did the company succeed while its competitor failed? The vice president of operations faced three problems that we have observed are common to the process of creating and managing intercompany operating ties.

First, there was no previous awareness of the root causes of the problem or the opportunity for improvement. The company had measured its performance in terms of its cost efficiency and service levels in responding to its customers' orders, rather than its ability to create new efficiencies for both sides, while significantly raising service levels, by altering customers' order patterns. Manufacturing and distribution simply had taken the order and replenishment pattern as a given, not within their control, and had sought to optimize the company's response. All previous operations improvement efforts were conducted within this traditional introspective framework. The possibility of dramatically improving performance through intercompany coordination simply did not surface as an issue in either the company, its customers, or its suppliers - over 500 companies in all - until this vice president of operations had the vision to "challenge everything."

Second, despite the company's sophisticated computer capabilities, it lacked the data needed to understand many of the costs of intercompany product flows. The vice president had to gather new data and build new cost models to analyze intercompany order patterns and their costs. Even order-picking costs, which generally were assumed to be relatively constant, changed radically under the standing order system, as the company's warehouses were reconfigured or, in one case, eliminated.

The company's customers and suppliers had similar blind spots in their views of operations analysis, and in their cost accounting systems. For example, large customers typically had replenished on the basis of economic order quantity (EOQ) logic, which balances inventory costs with the costs of placing an order. In the context of the new standing order system, however, ordering costs simply disappeared.

Third, implementing the standing order system required organizational changes in the company. Over half of the company was affected: Regional operations managers began to meet periodically with key customers to review service and adjust standing order levels; regional warehouses were reconfigured and downsized; materials managers began to track products beyond the company's boundaries; the procurement organization worked to develop long-range purchase commitments for its suppliers in return for price reductions and supplier guarantees of priority service and contingency backups; and manufacturing schedules and procedures were altered to draw new efficiencies from the new, more stable, demand pattern.

In light of these obstacles, it is not surprising that a major competitor had failed because it approached the standing order arrangement purely as a new marketing program. The competitor had

failed to recognize that its fundamental relationship with customers had changed and that any arrangement that involved deliveries without explicit customer orders bestowed a new, and very serious, responsibility for customer stock availability.

The competitor had neglected to reorganize its business to meet this very different service commitment. Its program had three fatal flaws: (1) the competitor had failed to isolate the key customers and products that had relatively steady consumption but erratic ordering patterns, and instead it developed an unfocused system that tried to do too much; (2) it neglected to establish frequent meetings with customer operations managers, and had no contingency mechanisms to monitor and adjust delivery levels, or to quickly react to unforeseen problems; and (3) the competitor failed to reconfigure its distribution facilities, and reorganize its manufacturing and supply processes in order to gain new cost efficiencies and absolute product availability. Customer alienation and operating cost overruns, stemming from the attempt to provide a "new" service with an "old" system forced the company to abandon the initiative. The competitor had not understood that intercompany operating ties require fundamental change.

This example illustrates the two major findings of our study. First, intercompany operating ties can create surprisingly large savings and new competitive advantage, but often it is difficult to see the range of ties that are possible and choose the coordinative mechanisms that are most appropriate. Second, success requires a major shift in perspective and broad changes in operations, both within a company and its channel partners. Intercompany operating ties are rarely as simple as they sometimes appear.

Match Operating Ties to Channels

In many channels, intercompany ordering patterns resemble the children's parlor game of "Telephone" in which a story is whispered from ear to ear until soon it is unrecognizable. As was the case with ESC, Ltd., even where product consumption is steady at the point of use, lack of intercompany communication and coordination - as well as different underlying economics that neither are understood nor taken into account by others in the channel - often create artificial intercompany ordering, replenishment, and manufacturing patterns that have little relationship to the actual patterns of consumption. This results in high operating, inventory, manufacturing, and supply costs, as well as chronic problems in getting the right goods to the right places at the right times.

The coordinative mechanisms at the heart of intercompany operating ties work to remedy the distortions in ordering patterns, effectively aligning channel product flow and all channel members' manufacturing schedules with underlying consumption, in two ways. First, they allow for "broadcast of the real story" throughout the

channel, eliminating uncertainty about actual consumption and channel stock levels. While this sharing of information is necessary, it is not sufficient to align a channel. Second, and more critical, intercompany operating ties involve the agreement that one channel member makes commitments and takes both operational and financial responsibility for key portions of another channel member's operations, e.g., product replenishment, manufacturing scheduling, or raw material availability. This arrangement enables the company to align intercompany product flow, and distribute the resulting benefits to keep the channel partners committed.

For example, ESC, Ltd. moved far beyond simply "discovering" the underlying stability of consumption and communicating this information to its channel counterparts. It also assumed responsibility for customer product availability through the new standing order agreement, and ensured supply availability through its committed purchase arrangement. The company took both operational and financial responsibility for important channel functions that traditionally lay outside its company boundaries.

While intercompany coordinative mechanisms may seem quite simple at the micro level, they require profound shifts in company boundaries: What had always been the prerogative of one company now may be shifted to reside within the decision-making authority of another channel member. Thus, what appears to be tactical quickly turns strategic.

Intercompany operating ties have a significant impact on corporate margins and returns because they greatly lower channel costs and increase product available to the end consumer. Inventories are a focal point for cost reductions and analysis, but are important beyond simple opportunities to reduce capital - they are a barometer of myriad channel inefficiencies. High inventory levels reflect an inability to respond speedily to changes in customer needs, and they often slow signals of change from moving upstream. And, excess inventory carrying costs are only the tip of the iceberg: even greater costs, usually hidden, accompany them. For example, after ESC, Ltd. stabilized channel product flow, less warehouse space was needed, handling costs plunged, obsolescence was reduced, manufacturing costs declined, raw material supply costs dropped, and missed sales virtually ceased. The full range and magnitude of channel alignment benefits are generally unmeasured, and consequently most performance reviews of intercompany operating ties greatly underestimate and understate the gains. (Exhibit 2 shows the benefits created through ESC, Ltd.'s intercompany operating ties.)

Channel distortions occur in characteristic forms in each of three generic channel types. The following taxonomy will help to describe the channel contexts we have observed.

- **The steady channel.** As in ESC, Ltd.'s situation, ultimate product consumption is very stable, yet the different ways

(and timing) that different customers have of translating the demand they observe into orders creates large swings in channel order patterns and resultant manufacturing activities. The objective of coordinative efforts in this context is to create a relatively smooth pipeline flow of products, particularly for the large customers whose orders drive product flow. Disposable diapers, certain restaurant supplies, heavily-used intravenous solutions, copy paper, and many chemical inputs into process industries fall into this category.

- **The fluctuating channel.** Here, product consumption is variable and unpredictable, but usually within a known range; historical patterns of end-consumer use establish meaningful boundaries. Uncoordinated ordering patterns from a variety of customers and channel intermediaries (e.g., distributors) typically amplify small downstream fluctuations into large (and costly) fluctuations upstream in the channel. This leads to chronic overstock and understock situations with attendant high costs and poor service. The remedy is to bring the channel partners' activities into phase with actual consumption and with each other. Many health and beauty aids, certain food products, passive electronic components, appliances, and basic clothing items generally are characterized by these kinds of channels.
- **The ramp-up channel.** In the ramp-up situation, when a new product moves into and through the supply chain, a characteristic channel coordination problem often occurs. When demand outpaces capacity as inventory begins to fill the pipeline, distributors may overorder to ensure availability. Manufacturers see this distorted (i.e., apparent "demand" much higher than true consumption) signal, project it as a "trend," overproduce, and in turn send even more distorted signals to their suppliers. The objective here is to coordinate all channel members' activities based on actual consumption levels and real consumption growth trends, and stabilize the channel as much as possible. Most new product introductions take place through ramp-up channels. The personal computer and consumer electronics industries provide numerous examples.

While many companies have anecdotal knowledge of other firms' intercompany operating ties, few have systematically analyzed their channels, identified the specific impediments to coordinated product flow, and developed appropriate mechanisms to restructure and align the channels. The channel taxonomy provides a good starting point for understanding what mechanisms may work best. Many companies, in fact, operate in hybrid channels (e.g., a ramp-up channel for newly-introduced products and a fluctuating channel for more mature products); thus, they must tailor arrangements that are uniquely appropriate for their specific situations.

We have observed four categories of intercompany operating ties that enable companies to manage channel product flow more ef-

ficiently: demand management, production coordination, strategic postponement, and multitiered purchasing. The specific details of the coordinative mechanisms, as expected, are tailored to the particular context in which we have observed them. These mechanisms go far beyond electronic data interchange (EDI) because they involve major changes in company operations, policies, and responsibilities. And their powerful results are creating sweeping changes in the structure of many industries.

Demand Management

Intercompany demand management allows a company to alter customer and distributor order patterns so as to reduce fluctuations in channel product flow, without compromising customer service. Demand management mechanisms are particularly important as order fluctuations are amplified as they move through the channel. We have observed three effective types of demand management.

Stockless. In stockless systems, a company maintains and replenishes its customers' inventories, often performing internal distribution within the customers' facilities. Generally, the customer's materials management can be eliminated or significantly reduced in size - in essence the supplier takes over its customer's materials management activities.

Baxter has pioneered this concept, distributing a wide variety of hospital supplies (including those purchased from its competitors) directly to hospital wards. This allows the hospital to eliminate, or drastically reduce, its centralized, in-house inventories, its stockroom space (which becomes available for medical uses), and its materials-related labor costs. The attendant savings amount to a significant portion of a hospital's annual operating budget. Baxter's rationale is simple: hospitals specialize in patient care; Baxter specializes in materials management and supply. Baxter's stockless program is a "partnership of specialists."

This transfer of responsibility nearly always carries an implicit (if not explicit) commitment to extremely high service levels, and often implementation of stockless systems is preceded by a lengthy trial period in which near-perfect service must be demonstrated. In one large food company that we studied, stockless arrangements reduced customer materials-related supply costs (i.e., labor, inventory, space, ordering) by over 40%, and the supplier's operating costs dropped by a significant amount as well. Stockless usually is an exclusive arrangement, with one vendor serving a customer's or customer department's needs. The supplier's ongoing presence and the system's efficiencies yield strategic marketing advantages that can lead to significant sales increases for the vendor.

Push-in. In push-in systems, the supplier receives (usually electronically) information on customer sales and inventory levels, and is responsible for "pushing-in" stock, i.e., the supplier has full authority to schedule deliveries of its product, without receiving an order. Push-in is especially suitable for a fluctuating channel because it provides rapid, unimpeded product flow. In the U.S. grocery, apparel, and related consumer goods industries, push-in systems are increasingly common; in some instances, pilot programs are incorporating consignment inventory so that ownership of stock is transferred to the retailer only at the moment of sale. A large customer can maintain push-in systems with multiple suppliers. But this complexity creates serious difficulties in arriving at common systems standards; this often is a major impediment to implementation.

A major consumer goods supplier that instituted a push-in arrangement with a large retailer was able to consolidate numerous field distribution centers into one national center, and reduce manufacturing costs as well; the retailer's annual inventory turnover rose from 6 to over 20 turns. Polaroid receives daily sales figures from several large customers, and pushes in stock. Nalco Chemical Company lends its customers chemical tanks with sensors and auto-dialers; the tanks call for replenishment when reorder levels are reached, or Nalco can choose to query the tank levels directly. Air Products has developed a similar system to monitor its customers' oxygen tanks.

Standing Order. Standing order systems, described previously, are suitable only for steady channels and require close monitoring for changes in underlying consumption patterns.

Early visibility and prediction. While early visibility and prediction is not, per se, an intercompany operating tie, it is an essential intercompany supplement to traditional order systems. Here, a company goes beyond its immediate customer or distributor to get information on product end-consumption, and/or competitor sales levels, and uses this information to predict sales. This process gives the company the ability to schedule manufacturing, and to persuade distributors and customers to maintain appropriate stock levels. While almost always useful, early visibility becomes essential in ramp-up channels. Emerson uses EDI links with Sears to get an early reading on sales and inventory, and combines this with historical data on promotions to schedule production. Norton monitors its key dealers' inventory levels to schedule its production.

Production Coordination

Production coordination operating ties smooth production and reduce suppliers' risk in return for capacity commitments or price reductions. While these arrangements have been used in isolation in some channels for decades, they are becoming more widespread as they offer enhanced benefits when used in conjunction with other intercompany operating ties to coordinate an entire channel.

Shared forecasting with commitment. In this arrangement, a company provides both a forecast of its future needs and a commitment to "take or pay," allowing its supplier to give that customer priority scheduling and committed capacity. The commitment aspect of this arrangement makes it an intercompany operating tie because the customer assumes responsibility for the supplier's production decisions in return for assured supply and (often) price reductions. Shared forecasting with commitment often is combined with demand management measures to ensure product flow coordination between the distribution and supply segments of a company's channel. One large industrial supply company in our study used this arrangement to reduce its supply lead time by over 33%, while lowering inventory levels and increasing product availability.

Gillette typically freezes its production schedule with key suppliers for a fixed period (e.g., 4 weeks) and forecasts its requirements subject to scheduling uncertainty for an additional fixed period (e.g., 12 weeks), but commits to take the entire period's production (e.g., 16 weeks). Ford gives Goodyear a 20-day forecast and 8 days' firm commitment for its heavy truck tires.

Capacity purchase. In capacity purchase, a customer obtains long-term production commitments from a supplier. This is crucial when capacity is scarce, or when a steady long-term supply relationship is needed. Capacity purchase enhances channel coordination because it enables a customer to assume the supplier's risk of capacity utilization in return for supply continuity and price stability. Hewlett Packard purchases semiconductor manufacturing capacity from some of its vendors. A major electronics customer commits to all production of one particular Norton plant on a "take or pay" basis, and has funded a plant expansion.

Integrated production. In integrated production, a supplier's production process is situated inside a customer's factory and managed by the supplier, often including all purchases of supplies for that process. This arrangement allows operational specialization while maintaining very close coordination (especially important in fluctuating and ramp-up channels), significantly reducing inventory costs (because the time and distance buffer between the two companies has disappeared) and lowering the operating costs of both companies through the elimination of duplicate functions. One study participant reported a 50% reduction in channel inventories along with higher levels of product quality through this arrangement.

PPG manages painting operations within certain General Motors factories.

Satellite plants. Satellite plants are located near a customer's factory. Often customers offer semi-exclusive contracts or guaranteed utilization in return for the supplier's commitment to build and operate a nearby facility. PPG uses satellite plants both as a buyer and as a vendor: It has established a "vendor city" for its suppliers near its Lake Charles, Louisiana facility, and it has located a plant within General Motors' "Buick City" complex in Flint, Michigan. Satellite plants can create significant coordination efficiencies, reduce cycle time, and lower inventory levels; but, in some cases we observed, they presented serious problems when the customers unexpectedly shift large increments of production volume to other locations.

Strategic Postponement

Strategic postponement coordination shifts portions of the manufacturing process - particularly those that customize the product late in the process - to downstream channel members; this delays customization until the last minute so that the channel can respond quickly to market fluctuations. This arrangement often is accompanied by commitment to purchase raw materials in order to make it economical for the supplier to hold inventories of semi-finished goods. Strategic postponement is very effective in fluctuating channels because it provides the ability to respond quickly and at a minimum cost, particularly when the fluctuations are in the form of changes in product mix rather than in overall volume. A study participant in the consumer goods industry has used a variety of postponement arrangements to reduce the value of channel inventories by over 60%, to eliminate several field distribution facilities, and to increase its order fill rate from 70% to well over 95%.

Distribution postponement. In distribution postponement, a company's distributors perform the final stages of assembly or customization, often in conjunction with installation. Xerox uses distribution postponement for its final stages of assembly including accessory installation, both in its sales subsidiaries and with its transportation/installation contractors. Wang ships components to its international distributors, who do final assembly, testing, and loading of optional software cards.

Supplier postponement. Here, a company seeks to alter a supplier's production process so the supplier holds most goods in partially manufactured form and finishes quickly to order. This often is accompanied by a commitment to purchase the supplier's materials. Square D's steel suppliers hold steel in bulk form and slit to order, with the company selectively issuing purchase commitments for the suppliers' materials. Canon ships "vanilla" printers, and Hewlett Packard customizes them. Camco has developed a powerful

"make to order" system that has lowered its operating and inventory costs; and Camco helped several of its suppliers to install the system in their own companies in order to lower those suppliers' prices and increase their responsiveness.

Multitiered Purchasing

Multitiered purchasing refers to a company's involvement in raw material purchases for its suppliers in order to ensure low materials prices and supply continuity for products flowing to it. Here, a company will directly purchase or commit to pay for some portion of its suppliers' raw materials. Several companies we studied substantially reduced their suppliers' raw materials costs, while ensuring critical availability in times of shortage. Dunkin' Donuts purchases raw materials for its suppliers through a franchisee buying cooperative to facilitate product flow and lock in prices. Polaroid makes agreements with key vendors to cover their risk of advance purchase of certain materials. General Mills buys raw materials for several contract manufacturers, to ensure price and availability. Motorola-Codex has included suppliers on its raw materials (e.g., plastics) contracts in certain cases where the suppliers did not have sufficient volume to secure adequately responsive terms.

Sweeping Industry Changes

There are persistent reasons why the benefits of coordinated product flow made possible by intercompany operating ties have remained untapped for so long. First, many companies have maintained a traditional view of their operational boundaries - in particular, the decisions that are "rightfully" theirs to make, as well as those outside their jurisdiction - and this has obscured the new intercompany operating paradigm. This problem is reinforced by inward-looking performance reporting systems that act as organizational blinders. Second, many companies lack the intercompany data, knowledge, and new methods of analysis necessary to see the problems and opportunities. Third, barriers between functional departments coupled with the lack of an interfunctional perspective, which, for example, allocates customer relations to marketing, and supplier relations to manufacturing, both hide the opportunities for gain and hamper necessary internal coordination. In particular, in some companies, internal "turf" issues have prevented supplier and customer operations managers from developing the close working relationships that naturally foster innovation in developing intercompany operating ties.

But, as powerful as these impediments may be, on today's dynamic, competitive battlefield, even more powerful forces are beginning to break down these barriers, forcing companies to respond and creating sweeping changes in certain industries. The magnitude of the gains that have been achieved by a few innovators are becom-

ing more widely known, and these innovators are serving as role models. Aggressive and innovative competitors are initiating change in some industries. Shorter product cycles, the need to differentiate products further, and demands from "mega-retailers" for customized packaging and products are driving change in others. Past strides in information technology, such as simple EDI, have paved the way for more powerful operating links.

There is a "snowball effect" that we have observed developing in several industries, particularly those involved with consumer goods. Manufacturer A forms a successful intercompany operating tie with Retailer 1. In short order, now aware of the myriad benefits, Retailer 1 contacts its other major suppliers, Manufacturers B and C, and asks that they participate in a similar arrangement with it. As they (B and C) begin to recognize the power of the coordinative mechanisms that have now been established, they each invite their largest customers, Retailers 2 and 3, and Retailers 4 and 5, respectively. Soon Manufacturers D, E, F, and G are converts, and Retailers 6, 7, 8, and 9 get involved. Now Manufacturer H, seeing what is happening and recognizing its growing competitive disadvantage, develops its own plan. Within a decade, every major player in the industry becomes involved.

The growing impact of this emerging "snowball effect" was evident in our study. In addition, in industrial sectors, there is a clear trend for companies to develop closer operating relationships with fewer, more important, more innovative suppliers and distributors. This trend already has changed the structure of several industries - proactive firms are gaining market share at the expense of their more hesitant competitors.

For example, Motorola-Codex is moving to consolidate its business with its most cooperative suppliers because "it is hard to get suppliers to measure up." Foxboro developed an innovative arrangement with a small supplier involving postponement and direct product delivery to the factory floor; this raised the vendor's penetration from \$10,000 to \$1,200,000. Moreover, the vendor offered the same arrangement to non-competing customers, and experienced similar sales increases. And a division of Norton dramatically reduced and stratified its distributor base to focus on its most innovative distributors. These themes were echoed in many other industrial-sector companies.

The compelling benefits of intercompany operating ties are becoming widely known. However, fewer companies are aware of the significant potential hazards in, and difficulties of, the process of developing intercompany ties. The experiences of the companies that we studied suggest a number of key points of leverage for creating and managing these relationships, as well as several common pitfalls.

Creating and Managing Intercompany Ties

The key determinant of success in creating and managing intercompany operating ties is the understanding that they require a fundamental change in a company's perspective and the ways it operates its business. Most of the effective companies in our study (either explicitly or implicitly) went through three sequential stages of change: awareness, orientation, and implementation.

Awareness is the development of a systematic knowledge of what ties are possible and how the coordinative mechanisms work. This is followed by **orientation**, where a company develops a direction and builds a framework for action by analyzing and prioritizing those possibilities. In **implementation**, a company approaches partners, jointly develops the coordinative arrangements, and makes internal changes to accommodate the new way of doing business.

Two problems may result from spending insufficient time in the awareness and orientation stages, and proceeding immediately into implementation. First, a company may develop momentum in a low-payoff area and neglect more fruitful opportunities. Second, moving directly into implementation denies a company the time and focus to make the organizational and management changes necessary for long-term success.

Stage 1: Awareness

The most effective intercompany operating ties are created by companies who begin by developing a deep understanding of the different kinds of coordinative arrangements, the context in which each works best, and the necessary internal changes in systems and procedures. They systematically communicate this knowledge throughout their organizations early on, to pave the way for later change.

A deep understanding of intercompany operating ties encompasses five key areas: (1) benchmarks - a knowledge of what innovative companies are doing and the results of their coordinative efforts; (2) an external view - the need to look beyond the company's traditional boundaries to gain a whole-channel product flow perspective; (3) fit - the match between operating ties and channel structures; (4) an interfunctional perspective - an understanding of the degree of pervasive company change that operating ties typically entail and the role of each functional area in ensuring success; and (5) a strategic view - the tendency of operating ties to lead all channel members in new strategic directions. In the next century, in our view, certain industries will see less competition between individual companies, and more between tightly-connected channels.

Stage 2: Orientation

Orientation gives a company a clearer roadmap of its possibilities, and a specific vision of its operational and financial direction. This stage provides a framework for later discussions and joint development efforts with other channel members. In this stage, a company must develop a consensus on three areas: (1) selection - the analysis of particular coordinative mechanisms in the context of particular channel members: Which customers are to be involved? Which suppliers? Which intercompany operating ties? (2) performance goals - choice of appropriate performance measures and rough estimates of potential gains at each channel stage; and (3) internal changes - changes in operations, organization, and administrative systems (e.g., performance measurement and compensation) needed both within the company and within other channel members. Effective orientation analysis is very different from the traditional introspective operations review.

New information must be developed on the activities that take place beyond a company's traditional boundaries. As Camco's manager of product support, Murray Wilson, put it, "In the past, we never used our supplier and customer base as resources. You have to get out and talk to these people." Simply spending time understanding other channel members' businesses and developing fuller intercompany relationships is a crucial first step. A deeper understanding of their businesses allows a company to develop possibilities for new intercompany efficiencies that can fundamentally change the entire channel.

The **channel map** is a key analytical instrument in this stage. It provides a broad view of underlying consumption patterns, channel operating structure, and actual channel performance by tracing product flow through the channel from point of origin to point of consumption. A channel map has three key components: (1) a diagram of the information and product flow, activity by activity (handling, storage, movement, processing, and all accompanying transactions) at each channel stage; (2) a quantitative analysis, or representative model, of product accumulation and movement over a typical time period; and (3) rough estimates of the costs at each stage. During the channel mapping process, it is helpful to determine whether each stage of the channel is "broad" or "narrow" - whether a company can tie with competitors of a chosen channel partner, or whether it must form exclusive relationships.

With the understanding that a channel map provides, a company can identify its basic channel characteristics, and the most important obstacles to efficient product flow. This prioritization is important because a small number of well-designed intercompany operating ties usually can provide a large portion of the potential benefits. Once a company identifies these potential intercompany ties, it can estimate the benefits at each stage of implementation and outline the key internal changes that are necessary in both the

company and the other channel members. (The sidebar describes the orientation-stage analysis performed in one effective company.)

Some innovative companies force paradigmatic change by starting with an explicit set of performance goals, often linked to corporate financial objectives or external benchmarks, that are not achievable incrementally. Then they seek new ways to restructure the product flow until they meet those goals. The most effective restructuring combines the analytic benefits of channel mapping with the strategic aspects of corporate performance goals.

"Showcase" projects, as Xerox terms them, are particularly effective at this stage. These differ fundamentally from pilot projects. A showcase offers an opportunity to carefully experiment with a program that is only roughly defined and to "learn by doing," while a pilot project is designed to "shake down" a program whose parameters have previously been approved. Showcase projects often depoliticize the change process, as managers from inside the company and from other channel members learn together how the coordinative mechanisms should be structured.

Stage 3: Implementation

In the implementation stage, companies approach the channel members identified in the orientation stage, help them to understand the process and benefits of creating intercompany operating ties, and jointly develop the capabilities to implement the specific coordinative mechanisms. In our observation, during the implementation stage, managers who have been most effective focus on four key leverage points: measurement, internal resistance, partner relations, and benefit sharing. Shifting perspective is crucial in each of these areas. As Polaroid's vice president of purchasing, Warren Norquist, put it, "The issue is how to get people to take a strategic, rather than a tactical, view."

Measurement. The most effective channel coordination mechanisms rely on process simplification and intercompany coordination, rather than on substantial new capital investments. But, while most forms of intercompany operating ties are self-financing, they often create disruptive changes in operating procedures and administration. Making the substantial net financial benefits explicit is essential to gaining and keeping top management support, and overcoming internal resistance to these changes.

Ironically, we found that certain well-designed, self-financing projects failed to retain management support and were abruptly canceled, while others that offered smaller returns moved forward. One consumer goods company in our study began the process of developing a very beneficial supplier coordination project, but the responsible executive did not make a sufficient effort to identify the specific areas in which cost savings would be produced, largely because they were not easily obtainable from the company's

performance reporting system. The project subsequently was canceled. Another study participant, also a consumer goods company, approached a similar supplier coordination project in a much different way. This company began by identifying benchmark performance measures that other companies had achieved, carefully estimated the specific gains that it expected in each area of its - and its suppliers' - operations, explicitly contrasted these gains with the relatively small cost, to emphasize that the project would be fully self-financing, and later monitored and reported the actual improvements achieved. Benefit estimation and measurement provided the crucial difference.

Many executives in our study emphasized that the benefits of new intercompany operating ties must be expressed in the language of top management. As one successful vice president of a large, industrial-sector company put it, "I talk to our CEO about ROI, and not about logistics. The real issues are cash generation, strategic advantage, and asset productivity."

Measurement of the benefits of channel restructuring is particularly difficult because product (as well as information) crosses functional and company boundaries. Just as traditional functional performance measures can hide problems and opportunities, they also can greatly understate the systemwide benefits that intercompany operating ties create. For example, in the case of ESC, Ltd., changing the erratic order patterns produced hidden (to the company's functionally-oriented systems) benefits not only in the distribution area, but also in manufacturing, supply, and sales. ESC's customers and suppliers also experienced benefits that were not captured by their performance reporting systems.

Internal resistance. Reducing internal resistance was a major success factor in virtually all companies that successfully developed coordinative mechanisms. Resistance to intercompany operating ties typically stems from two sources. First, purchasing and sales groups often initially see intercompany operating ties as encroachments on their traditional "turf," a view often reinforced by narrow compensation systems and a lack of understanding of how jobs can change for the better when the routine aspects are removed. Second, because intercompany operating ties require significant changes in operations, they raise a pervasive resistance in the operating departments themselves. Coordinative arrangements may lead to the elimination of some facilities, the reconfiguration of others, and significant changes to long-established procedures and prerogatives.

Among the most effective companies, changes to incentive compensation and focused education were key elements in shaping new forms of cooperation. These were important elements in gaining the support of both groups.

Incentive compensation is crucial both to facilitate change and to foster ongoing cooperation. As one executive put it, "In

working with people, you can see the vision, you can explain the vision, then they will go do what they are paid to do." With careful benefit measurement in place, management can shape incentive compensation to share a portion of the newly-created gains with those involved in order to spur their commitment. Several companies in our study established specific benefit sharing programs in which the traditional performance review standards were replaced by the intercompany operating tie development milestones.

Focused education is essential to create a widespread understanding of the logic and benefits of intercompany ties, and to communicate the new functional roles and intercompany relationships. As in any paradigmatic change, the rationale, benefits, and expectations must be repeatedly communicated, both clearly and frequently, over a period of time. As Bob Fiorelli, CVS's senior vice president of purchasing, observed, "A big issue is how to educate buyers to see a new role, changing from individual shark in the ocean to a supportive, information-sharing group." Perceptive executives made similar observations about other functions as well.

In the education process, the message must evolve: In the awareness stage, the focus is on why operating ties are necessary; the orientation stage concentrates on an explanation of the company's new direction, the expected benefits, and the nature of the operational and administrative changes required; and in the implementation stage, each individual's new role must be painstakingly developed and explained. This lengthy, iterative process is necessary because it is so difficult to change the embedded, isolated patterns of business. And, in contrast to most operating system improvement efforts, education must be focused externally as well as internally.

Partner relations. Because intercompany operating ties require tighter connections between what have been, in the past, disparate businesses, often with a history of adversarial battles, they are very different from passive links such as EDI. This makes the process of creating and managing intercompany operating ties far more complex, and requires more in-depth understanding of each channel member's business. To reduce complexity, it is necessary to select carefully those channel members with whom a company will develop early coordinative mechanisms. Many effective companies focused on three selection criteria: importance, measured by the magnitude of potential payoff; attitude toward innovation and change; and operating fit.

Some companies that treat intercompany operating ties as tactical attempt to quickly develop coordinative mechanisms with too many partners. This diffuses their focus and soon presents severe difficulties in maintaining the arrangements, as was true in the case of ESC Ltd.'s unsuccessful competitor. For those able to focus their efforts, the keys to successfully building intercompany operating relationships are partner recruitment, project management, and parallel change.

The process of recruiting a partner is not as straightforward as it may appear. The company must be able to obtain the partner's agreement to participate, often difficult if the partner is being asked to give up decision-making authority it deems rightfully its own. Companies in our study often spent more than a year selecting the appropriate partner with whom to begin, and convincing the partner that the intercompany operating tie would prove to be mutually advantageous. As Baxter's vice president of distribution, Jerry Arthur, observed, "Patience and persistence are the cornerstones of building a relationship. Both companies have to learn each other's business." Top manager to top manager contact usually is required.

Several companies in our study put on awareness workshops for other members of their channel to communicate to those companies' key managers what others have done, what results are possible, and what changes are necessary. Benchmarks prove particularly useful in doing this. Well-structured workshops not only generate internal support, but also give an early reading on potential partners' willingness to make the necessary internal changes.

Intercompany project management to design, develop, and implement company-specific arrangements is a surprisingly long and complex process. Some of the most effective projects have been led by a "project champion" in each company. These individuals have the ears of top management, along with the ability to independently generate programs of operations change, and to influence compensation, promotions, and resource allocation. This allows them to drive change and publicize the benefits.

Conventional wisdom holds that an atmosphere of trust must be established before these "partnerships" can be established. Our observations of successful intercompany operating ties indicate that this is not necessarily true, perhaps in contrast to so-called "strategic alliances," such as the joint development of a new and critical technology. Rather, particularly in channels that have long been characterized by adversarial tensions, channel members may enter into coordinative agreements for very selfish reasons: They recognize the mutual benefits and are particularly interested in the benefits that will accrue to them. For them, "vigilant trust" is sufficient. Then, over time, deeper trust begins to develop as each party sees that there is, in fact, nothing to be gained in the long run from taking advantage of the other.

Indeed, some forms of intercompany operating ties do not involve high switching costs. In these cases, if one channel member begins to take advantage of another, it is a simple matter for the latter to cancel the agreement and return to the former inefficient, adversarial way of doing business. In our observation, there is so little to gain and so much to lose in destroying an intercompany operating tie that this rarely happens.

Both companies generally must undergo a set of internal changes in parallel with one another. Just as the initiating company must carefully manage its internal change process, its soon-to-be partner must deliberately develop new organizational relationships and performance measures. For example, one company in our study developed an effective coordinative arrangement involving supplier postponement along with a commitment to purchase the supplier's materials. Both companies had to make significant changes in their ordering, inventory, processing, and purchasing procedures. Stock location shifted in the channel from one company to the other. In the supplier, as well as in the customer firm, many jobs changed dramatically, so new interfunctional performance measures were developed, and incentive compensation was adjusted, in order to overcome internal resistance and induce cooperation.

Benefit sharing. Intercompany operating ties offer significant cost reductions, increased sales, and supply continuity and flexibility. When the benefits are properly distributed, both customer and supplier have a compelling incentive to ensure that the relationship continues.

There is a common understanding that the goal of benefit distribution is to create substantial gains for both firms, although there is not an equal sharing of benefits in every case. Often, the way benefits are split evolves naturally over time. For example, in many of our observations of demand management ties, the customer initially takes the lion's share of the benefits - immediate inventory reductions and reduced operating expenses. For the vendor, there may be little initial immediate payback. Over time, however, as more and more customers agree to adopt this new form of managing product flow, the vendor is able to decrease its inventory, reduce its operating expenses, and push the benefits of decreased product fluctuations back into manufacturing and purchasing. And, once the ball gets rolling, sales to these partners generally increase significantly. After a few years, the vendor often gains the larger share of the channel benefits. In the long run, the benefits of intercompany operating ties are so substantial that both customers and suppliers are much better off for having worked together.

Conclusion

Intercompany operating ties are increasing rapidly, allowing companies to tap huge, long-hidden reservoirs of value. In a number of industries, virtually all companies soon will be affected. The "snowball effect" that we observed is gaining strong momentum.

Already in some industries, as one executive put it, "the rule is adapt or get engineered out." Experience shows that early, proactive companies gain important first mover advantages, but these opportunities will not last long.

Success demands a fundamental change in the way a company does business. Managers must act strategically, developing interfunctional capabilities, and linking resources both inside and outside their companies. The tightly interconnected multi-company confederation is emerging as the competitive unit of the early twenty-first century. Forging a new perspective based on this paradigm is the key to unlocking the latent value.

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Orientation Analysis

(sidebar)

While the process of orientation-stage analysis, as expected, differs from company to company, the core process is illustrated by one particularly effective company that developed a push-in system for a several key customers that it coupled with a forecast commitment arrangement involving its most important suppliers. The company started by examining the movement and accumulation of a small sample of products in one operating region over a 26 week period, and traced the product flow through the whole channel, from point of supply to point of consumption, in order to develop an understanding of the underlying patterns of consumption, product flow, and product accumulation. In addition, it tabulated the activities (e.g., transportation, unloading the trucks, stocking warehouse shelves, picking subsequent orders) at each stage and approximated their attendant costs.

The company not only looked at intercompany order, shipment, and inventory patterns, but also visited several customers and suppliers to understand their operations and identify the internal factors that were creating these patterns. In one customer, the company did a brief "functional cost study" in which it observed and roughly costed out the materials-management related activities performed both by operations and other departments (such as finance); it then related these activities to the current structure of operations in order to identify large, hidden pockets of cost. With the relatively small number of products, and manageable sample of customers and suppliers, the company could gather specific information on the actual product flow and cost structure. The company used this information to develop a set of PC-based cost models for each channel stage.

At this point, the company made an early identification of the key obstacles to efficient product flow, and decided to focus on push-in and committed forecasts (involving a limited number of key customers, products, and suppliers) as the coordinative mechanisms that would provide the most leverage in aligning the channel. It then expanded the analysis to cover a number of other products, regions, customers, and suppliers in order to confirm its understanding. This broader view enabled the company to verify many of its early hypotheses, and to modify others. A clear direction was beginning to emerge.

The company returned to its original sample of products, and carefully thought through how these seemingly simple coordinative mechanisms would facilitate the restructuring of the whole channel.

Orientation Analysis - Page 2

This step required particular care because the coordinative mechanisms offered the opportunity for paradigmatic changes throughout the channel. For example, a push-in arrangement allowed both the company and its key customers to eliminate facilities, improve working capital turnover, and change long-standing processing and handling procedures. Substantial changes also were possible in the supply chain. The company made rough approximations of the new costs that could be achieved in each area, discussed these with the customers and suppliers it had visited, and re-ran its cost models using revised information to generate order of magnitude estimates of the overall benefits at each channel stage. Finally, the company identified the key operational, organizational, and administrative changes needed by itself and the other channel members for the new system.

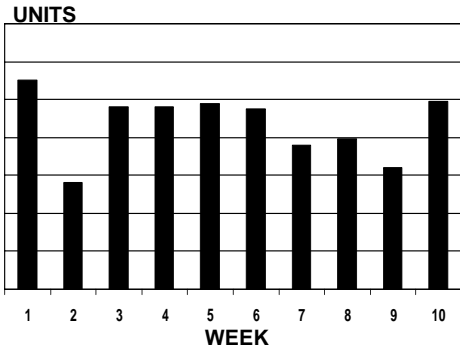
Orientation analysis enabled this company to develop a clear, early direction and an understanding of whom to approach first. The company recognized the importance of doing a careful job of understanding, both tactically and strategically, how it could and should coordinate with the other channel members, and how best to manage the process. Not until after this stage of analysis was a customer or supplier approached with a specific proposal.

Exhibit 1

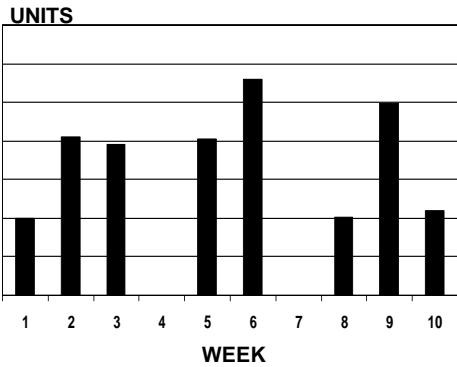
ESC. Ltd. - CHANNEL DYNAMICS OF A TYPICAL PRODUCT

PREVIOUS CHANNEL FLOW

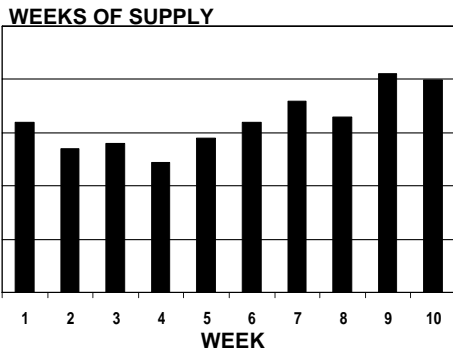
(1a) TYPICAL ORDER PATTERN



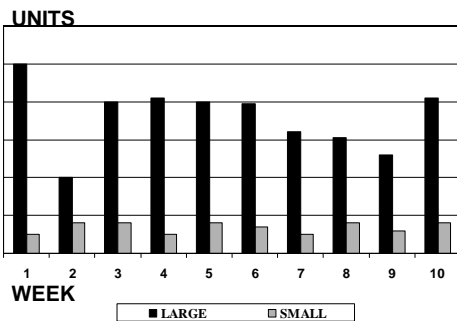
(1b) FACTORY OUTPUT



(1c) INVENTORY LEVELS

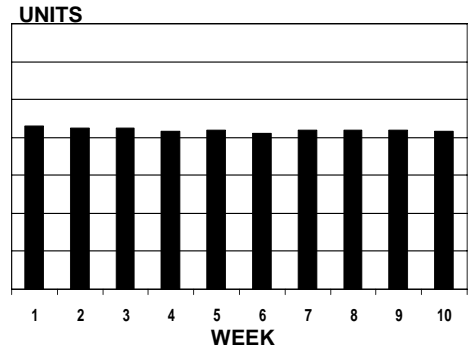


(1d) TYPICAL ORDER PATTERN
LARGE VS. SMALL CUSTOMERS

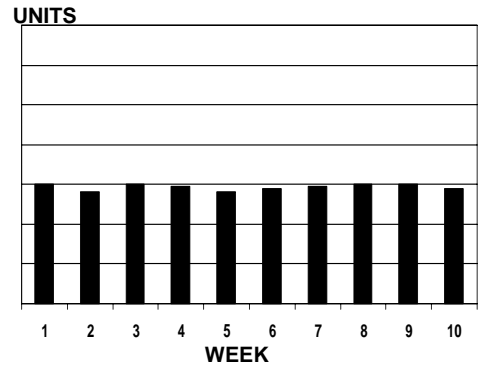


STANDING ORDER CHANNEL FLOW

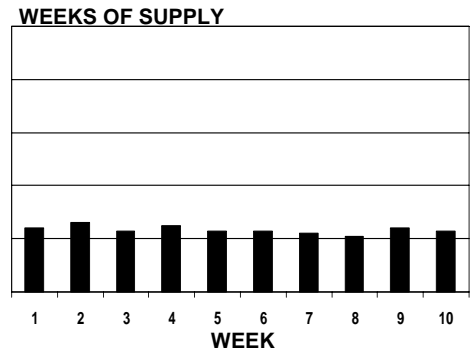
(1e) TYPICAL ORDER PATTERN



(1f) FACTORY OUTPUT



(1g) INVENTORY LEVELS



(1h) TYPICAL ORDER PATTERN
LARGE VS. SMALL CUSTOMERS

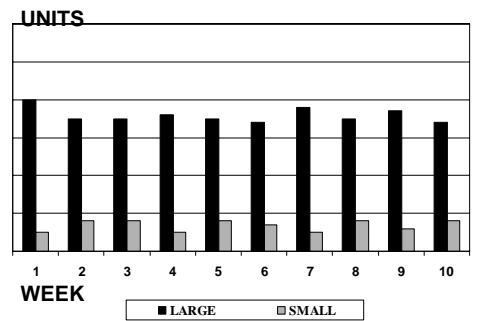


Exhibit 2

ESC, Ltd. - Channel Benefits

Channel changes

<u>Company</u>	<u>Category</u>	<u>Before</u>	<u>After</u>
ESC, Ltd.	Manufacturing	Variable Monthly schedule	Fixed Weekly schedule
	National distribution center	Full function High stock levels	Largely transship, Cross-doc (or by-pass) Low stock levels
	Customer-facing warehouses	Variable work load High stock levels	Standard work load Low stock levels Some by-passed or eliminated
	Transportation	Variable Many unscheduled shipments	Regular Few unscheduled shipments
	Order taking	Costly Many back orders	Automatic No back orders
	Lost sales	Moderate	Very low Increased product line penetration

Exhibit 2

ESC, Ltd. - Channel Benefits (Page 2)

Channel changes

<u>Company</u>	<u>Category</u>	<u>Before</u>	<u>After</u>
Customers	Ordering	Costly	Automatic
		Many back orders	No back orders
	Materials handling labor	Variable	Standardized
		Costly	Low cost
Suppliers	Inventory	High stock levels	Low stock levels
	Manufacturing	Variable	Predictable
		Costly	Low cost
	Inventory	Volatile	Steady
		High stock levels	Low stock levels
	Field distribution centers	Extensive	Some by-passed
		High stock levels	Low stock levels
	Raw material purchase	Erratic	Predictable
Costly		Low cost	
		Long lead time	Short lead time
	Lost sales	Moderate	Very low

Exhibit 2

ESC, Ltd. - Channel Benefits (Page 3)

Summary of cost reductions

ESC, Ltd.'s cost reductions*:	inventory carrying costs 45%; materials-related labor 25%; materials-related space 40%**; manufacturing 15%; order processing 65%.
Customer cost reductions:	inventory carrying costs 40%; materials-related labor 15%; materials-related space 20%; order processing 65%.
Supplier cost reductions:	inventory carrying costs 35%; materials-related labor 30%; materials-related space 25%; manufacturing 20%; raw materials 15%.

* Reduction in cost per unit of typical product.

** Space gains assume alternative use or disposal of freed-up space; owned facilities prices at prevailing market rates.