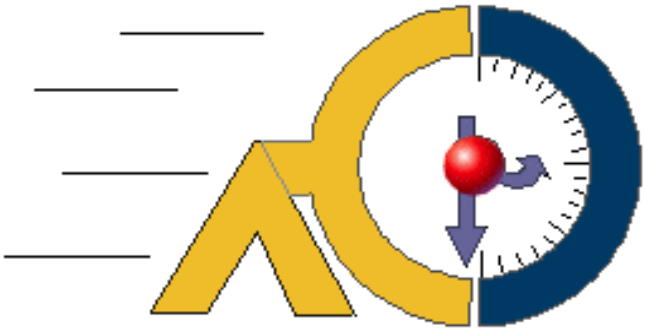

DCRA Supply Chain Solutions

A Total Order Fulfillment ä Case Study

Siemens
Efficient Networks
Menlo Logistics
PFSWeb

As published in September 2003 Issue "Global Logistics and Supply Chain"

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Global Logistics & Supply Chain Strategies — September, 2003

Brash High-Tech Start-up Matures Into a Profitable Unit of Siemens

By Robert J. Bowman

Siemens acquires Efficient Networks just before the high-tech bust. Then it has to figure out a way to keep the unit alive and stay the course. A revamped supply chain is the answer.

How do you change a company's whole business mentality? That was the question facing Herman Stiphout, when he became executive vice president and chief financial officer of Efficient Networks Inc. in February 2002.

Founded in 1993, Efficient was still acting like a start-up when it was acquired by Siemens AG, the German electronics and industrial giant, in April 2001. Dallas-based Efficient sells broadband internet access products, including digital subscriber line (DSL) equipment, modems, routers and wireless home networking systems. Customers include telecommunications companies, equipment vendors and internet service providers (ISPs).

The Siemens purchase proved ill timed, at least in the short term. It took place just before the internet bubble burst. Hardware providers like Efficient were especially hard hit. "Instead of expected growth," says Stiphout, "[Efficient] went into a steep downturn."

But Efficient's original management didn't change with the times. Still living the dotcom boom, it was focused on growing revenue, not profitability. Stiphout's task was to tighten up the internal organization and turn Efficient into a viable company, by traditional business standards.

An all-out, unfocused attack on the organization would fail, Stiphout knew. So he homed in on one aspect of the company's operations that was in dire need of change: the supply chain.

Typical of many high-tech start-ups at the time the boom turned bust, Efficient was burdened by excess finished product. Gross inventory equaled half of annual revenues. Included were huge amounts of obsolete inventory and raw material, partially resulting from a shift of DSL hardware manufacturing from Mexico to Taiwan and mainland China.

Accounts receivable were also unacceptably high, at 129 days of sales outstanding (DSO). "The consensus was, you don't upset the customer by asking him for money," Stiphout recalls.

Consultant Steps In

Not a supply-chain expert himself, he turned for help to Dynamic Cycle-Time Reduction Associates Inc., a Dallas-based consultancy. Supply-chain veteran Jon Kirkegaard, DCRA's founder and president, had done work for Efficient even before it was acquired by Siemens. The two companies would now design a system to foster a high degree of product customization, and tight relations with Asian contract manufacturers.

"We wanted a top-class supply chain," says Stiphout, a 30-year veteran on the financial side of Siemens. "This business is very fast moving and volatile. There's lots of pressure on prices and competition, especially from Asia." Efficient's task was to craft a network that would serve as a

barrier both to new and existing rivals in the DSL market.

DCRA came up with a program it called Total Order Fulfillment (TOF), with the intent of maximizing both customer-order fill rates and unit profitability. At the same time, it sought to reduce fixed and variable costs in warehousing, transportation and equipment. The strategy would build on Efficient's model of selling equipment to large telecoms before building the product, then drop-shipping from plant to customer whenever possible. The system also had to take into account short lead times, even as it held down safety stocks, says Kirkegaard.

Outsourcing was a key part of the plan. And Efficient was no stranger to the concept. Like many emerging companies in the telecom equipment business, it had relied on contract manufacturers to build product from the beginning. Logistics, too, was in the hands of an outsider. Efficient had engaged a third-party logistics provider six months before Siemens entered the picture, to help manage the shift to low-cost Asian manufacturing.

But Efficient wanted much more out of a 3PL than conventional logistics. Such a partner would form the cornerstone of its extended supply-chain network, performing a variety of duties reaching well beyond the simple movement and storage of product. "It was a difficult bar to reach," admits Kirkegaard.

Stringent Requirements

Based on a proposal drawn up by DCRA, Stiphout bid out a contract to approximately 10 candidates who he believed could do the job. As it turned out, only a handful had the resources to meet Efficient's stringent requirements. And the company's top choice of a 3PL was rejected in the contract negotiations stage, when Efficient came to doubt its ability to live up to initial promises.

The runner-up was Menlo Worldwide, which originally had priced itself out of the bidding, according to Lonny Warner, vice president of sales for high-tech electronics in Dallas. Given a second chance, it revisited the cost model, agreed to create new order-promising technology, and won the job. Menlo also vowed to accelerate the integration of Emery Forwarding, a sister unit within the CNF Inc. group, into its organization.

Menlo signed the contract in January 2003. It faced an alarmingly brief period in which to ramp up operations. A logistics and fulfillment facility, starting from scratch, had to begin receiving product within 30 days. That included facility design, installation of racking and material-handling equipment, and the hiring and training of personnel.

What's more, the switchover of 3PLs and fulfillment models had to happen without the slightest interruption in the flow of product or customer service. Says Kirkegaard: "It was like changing bicycle tires while riding."

Located near Dallas in the city of Coppell, the Menlo facility covers 110,000 square feet, 60,000 of which was set aside to meet Efficient's immediate needs. The building was designed to house multiple clients, but Efficient remains its sole tenant at the moment, occupying 90 percent of the space when overflow capacity is taken into account. Warner expects the client to require less space as its inventories continue to shrink, and operations become even more efficient.

Within the facility's walls, Menlo receives inbound components and base units from Asia on Efficient's behalf. It then works closely with the client's planners and procurement organization to develop forecasts and assess actual demand. Adopting a classic postponement model, Menlo accepts much of the product in basic form, then configures and assembles it in accordance with individual end-users' needs. According to Warner, Efficient's base products can yield some 15,000 options and configurations.

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— Herman Stiphout of Efficient Networks

When an order comes in, Menlo's system confirms the availability of all components in the bill of materials required for the assembly line. It inserts ethernet cards, diskettes, peripheral documents, phone cables, power supplies and final packaging. Postponement lowers Efficient's logistics costs, according to Warner, in part because it allows for the receiving of bulk packs, which hold more product than those containing finished and packaged goods. The strategy also more closely aligns the company's inventories with current demand.

Menlo also performs quality checks on finished goods. And it handles reverse logistics, an area of growing concern to high-tech equipment makers due to its cost and impact on customer satisfaction. The 3PL sends out some returned units to their original manufacturers for repair or replacement. In other cases, it accepts and tests returns, then does minor repairs itself.

The Logistics End

Menlo's responsibility for Efficient's freight begins at the contract manufacturer's site in Asia. It books air and ocean transit for components from the point of origin, shipping some product direct to large customers, and the rest to the fulfillment center at Coppell. There, Menlo acts as a classic freight forwarder and customs broker, dealing with carriers and clearing all shipments through U.S. Customs. It's also responsible for moving product from the fulfillment center to Efficient's customers.

Visibility and data are conveyed through Menlo's own information systems, all of them web-based. The warehouse-management system was developed in partnership with Provia, says Warner. Menlo has the right to develop its own code, which is then incorporated into future releases of Provia's off-the-shelf WMS.

Menlo has a similar arrangement on the transportation-management system (TMS) side with Baan. Viewlocity (one of Kirkegaard's previous companies) provides basic visibility tools for tracking and tracing of shipments. The freight-forwarding systems are Menlo's own. And the order-commitment software was developed by DCRA.

Menlo partners with PFSweb, a Plano, Tex.-based fulfillment and logistics provider. PFSweb handles the retail side of the Efficient supply chain, taking orders for branded product, picking and packing it, and routing it to retailers from a facility in Memphis.

"This project is really about inventory," says Warner. Adopting the model of successful electronics sellers like Dell Computer, Efficient aims to commit inventory to a sale prior to physically receiving it. Eventually, says Stiphout, it hopes to achieve a negative cash conversion cycle, in which the buyer pays for product before Efficient has to pay its suppliers. Already it has improved accounts receivable by 60 days.

"Through Menlo, we create the ability for our sales force to meet customer orders on a timely basis," says Craig Clark, Efficient's senior vice president. The company can now realize a one-week turnaround on product orders, he adds.

Around May of last year, DCRA and Efficient undertook a detailed diagnosis of the company's sales and operation planning (S&OP) procedures. Following the outsourcing and inventory strategy initiatives, it formed this third leg of the TOF program. Goals included the establishment of a manufacturing and distribution regime based on profitability, better supplier relationships, and the ability to scale up according to customer demand.

Planning and attainment cycles went from quarterly to weekly, while accounting for all manufacturing and logistics constraints in the network, Kirkegaard says. DCRA devised customized software, which allows Siemens to track product flow and demand more closely. That was especially crucial, given the lengthening of supply lines that resulted when Efficient switched manufacturing from Mexico to Asia.

It can take up to four weeks to move product by ocean, versus three to seven days by air. DCRA helped Efficient to arrive at an ideal mix of the two modes, depending on the type of product. For customers with a six-week lead-time, Efficient could rely on low-cost ocean freight for finished product. For those with only three weeks, the company kept up a steady stream of base units flowing to assembly centers in Dallas and Europe, where postponement strategies allowed for rapid response to configured orders. And for those with an even shorter lead-time, air was the way to go.

"A year and a half ago, airfreight was a dirty word," says Kirkegaard. "It was what you did if you failed." DCRA showed Efficient that a balance of air and ocean was preferable to holding large amounts of inventory close to customers. "Now you have a process where logistics fulfillment is in harmony with the way customers want to do business," he says.

Data Repository

On the planning side, DCRA's system freed Efficient from its dependence on manual spreadsheets. It created a repository of supply-chain execution data that was fed into algorithms and yielded a more accurate picture of supply and demand. In the process, the consultant uncovered misalignments between Efficient's contractual promises and its manufacturing capabilities.

DCRA didn't eliminate the spreadsheet outright; it just made the tool more useful. Despite the popularity of electronic data interchange and various internet communications protocols, spreadsheets remain a standard way of sharing plans across the enterprise, says Kirkegaard. They can be conveyed by a variety of means, including e-mail and the internet.

The important thing, he says, is to know whether and when a given order can be fulfilled. The entire organization must have a view of work in progress, goods on hand and shipments in transit.

Previously, says Clark, various business-unit leaders would decide which parts to build and when. Often they would ignore the master plan, whose accuracy they mistrusted. Product would be turned out on a "just-in-case" basis, leading to the glut of inventory with which Efficient was burdened when it became part of Siemens.

Through creation of common marketing definitions and requirements, Efficient was able to determine what it really needed to keep pace with demand. Even the most stubborn senior managers came around, after repeated tests of the new system proved it to be more accurate than anyone who attempted to override its conclusions.

In fact, Stiphout encountered stiff resistance to change from many of Efficient's managers in the early months of the new program. They worried that inventory cuts would interfere with the flow of product to the customer, resulting in lost sales. To their way of thinking, high inventories insured that "every customer's whims and demands could be satisfied at the drop of a hat," Stiphout says.

But the old system was merely masking big deficiencies in Efficient's supply chain. Among the symptoms of the disease was the tendency of sales staff to load up on product with a market lifecycle of just six to nine months. The result was huge stocks of obsolete inventory.

Program Yields Results

Efficient's new program brought an end to the pain. During the last year and first quarter of this year, it wrote off tens of millions of dollars in obsolete inventory. Since then, the amount has been zero. And for 2004, the company is forecasting less than 5 percent of this year's level of obsolescence.

Results of the program have convinced even the most stubborn of holdouts. Between February 2002 and June of this year, Efficient's inventory turns improved by a factor of eight. Accounts receivable DSO was down by 65 percent. Working capital went from four turns to a negative 14 turns, reflecting the company's ability to get paid faster while postponing expenditures on manufacturing components.

Per-unit supply-chain management costs are down 61 percent from last year. At the same time, throughput capacity has increased by 38 percent, and overall costs have plunged 50 percent.

Efficient's fledgling build-to-order program is achieving 100-percent delivery, and 99.8-percent on-time arrival. The program remains in its early stages, with volumes still low, Stiphout says.

Customers are beginning to notice the change. Telecom giant SBC Communications Inc., which last year suffered through repeated missed delivery dates for product from Efficient, recently awarded the company with a supplier recognition award for good cost management and overall customer service.

The TOF program officially ended in May of this year. But much work remains to be done, the principals say. Efficient is in discussions with Menlo about implementing two additional programs: vendor-managed inventory (VMI) and available-to-promise (ATP). The first pushes responsibility for management of key production parts further up the supply chain, so that the original equipment manufacturer takes possession at the last possible moment. (Some finished product might even go direct to the end-user.) In the process, significant assets remain off Efficient's balance sheet.

ATP allows Efficient to make firm commitments to its customers about what's in stock or moving through the pipeline, and when it can be shipped. The key is access to accurate data that can constrain the company's inventory, and present a realistic picture of product availability. Clark says the ATP engine could be up and running by the end of September. The VMI program is targeted for Christmas.

Efficient's supply-chain renovation program promises to have even greater impact throughout the Siemens organization. Currently, the unit is being integrated into Siemens Information and Communications Networks Inc. (ICN), one of the parent's U.S.-based operating companies. Headquartered in Boca Raton, Fla., ICN supplies integrated voice and data networks to companies, telecom carriers and service providers.

When it comes to supply-chain excellence, Efficient is ahead of the larger Siemens organization, Stiphout says. He hopes the parent will draw on the experience of Efficient in implementing similar models throughout its business units.

Kirkegaard points with pride to the work done so far, especially the speed of implementation. "The 13 months we engaged [with Siemens] encompassed everything I did in 10 years of consulting and eight years of solving things from a software standpoint," he says. "In 13 months, we went from greenfield strategy to post-audit results. And we set the foundation for a competitive Siemens Broadband going forward."