

All for one and one for all

To ensure success when they outsource manufacturing, companies need to adopt a community approach with their partners and back it up with collaborative technology.

IT WASN'T SO LONG AGO that most companies manufactured their products in-house. But nowadays, supply chain executives are apt to think that contract (outsourced) manufacturing is the best strategy for their companies. Many, no doubt, consider the widely publicized experience of Hewlett-Packard (HP) to be a good model. HP has long relied on a combination of in-house and outsourced manufacturing. By outsourcing much of its manufacturing, HP freed up resources to focus on the design and marketing of innovative products. Even Hewlett-Packard's laptop computer rival Dell Inc. has recently switched to some contract manufacturing. For years, Dell carried out its build-to-order model by relying entirely on in-house manufacturing and directly managing labor, parts inventory, and production in addition to marketing and product design. However, in pursuit of retail sales—and after seeing how outsourcing has paid off for others—Dell recently began to employ a mix of build-to-order in its own factories plus build-to-stock, which is handled by contract manufacturers.

Companies of all sizes look at the examples that such well-known brands have set and try to establish their own cost-effective, flexible outsourcing models. But can any company

that lacks the resources and weight of a Dell or HP really make an outsourced manufacturing strategy successful?

There is no simple, clear-cut answer. Without the clout of a Dell or HP, companies looking to outsource manufacturing will need to adopt a more collaborative approach to supply chain management. This challenge is made even more difficult by the fact that traditional supply chain management (SCM) technology wasn't designed to support the management of outsourced manufacturing.

Most supply chain software assumes that users' companies have direct control of and operate their own factories. (Figure 1 shows the complexity of traditional manufacturing relationships.) This assumption had a big impact on the way that the software was designed. While traditional SCM software does handle, to a certain extent, demand planning and forecasting, sourcing, fulfillment, and collaboration, its core purpose is asset utilization: ensuring that costly manufacturing assets run as efficiently as possible in order to reduce unit costs. But now, when more companies rely on outside partners for manufacturing services, asset utilization is no longer the main priority. Instead, brand-owning companies now focus on product flow, or

[BY AMAR SINGH]



product velocity. Forecasting, ordering, sourcing, and fulfillment are all carried out with the goal of moving products as quickly and efficiently as possible across a global supply chain rather than with the goal of maximizing factory utilization.

Companies that are mainly concerned with the *movement* of goods yet are trying to make traditional SCM software or enterprise resource planning (ERP) systems work in an outsourced manufacturing business model are in for a rude awakening. This technology, built for a different kind of company operating in a different era, is not capable of managing a network of business partners: The outdated technology does not provide direct access to real-time information about the flow of components and goods across the supply community, nor does it allow for cross-community business-process execution. For example, traditional SCM solutions assume suppliers' quantities and lead times to be constant. This works well when buying raw materials from the supplier. But if a company is buying finished goods, then it needs flexibility in both quantity and lead times, since it may be willing to buy smaller quantities and have the supplier exe-

dite them because a customer is waiting for them.

Companies that shoehorn new business models into old solutions are stifling their ability to be agile and responsive to change. The only way to make contract manufacturing work under today's global supply chain mandate is to adopt a community approach to business relationships, supported by a community software platform. This platform will serve as a hub that provides visibility across the entire supply chain network and enables fast, collaborative decision making. Community SCM solutions will complement the existing system of record for financial information and purchase orders, working in tandem with them to drive business synchronicity. By using these solutions, brand-owning companies will be able to plan and coordinate a connected business network in which all partners share risks and rewards.

Warbler versus Hipster

To understand why companies that outsource manufacturing will benefit from a software-supported community approach, let's consider the case of two fictitious enterprises, both medium-sized electronics com-

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panies. “Warbler” manufactures its 2Cool MP3 player in its own state-of-the-art plant in Juarez, Mexico. “Hipster,” Warbler’s archrival, outsources manufacturing of its Hipster MP3 player to a contract manufacturer (CM) in Guangzhou, China. With strikingly similar product designs, the battle to be number one in market share and profits comes down to their supply chain strategies and how well they execute them.

With in-house manufacturing, Warbler has direct control over production schedules, product quality, intellectual property (IP) protection, and operations and labor compliance. Components are sourced from a variety of suppliers in Mexico and Costa Rica. The manufacturing operation is managed by an ERP system, demand is managed in a customer resource management (CRM) system, and sourcing is managed via a supplier relationship management (SRM) application. Information is communicated to the plant by e-mail and fax. Shipments to its distribution center (DC) in Memphis, Tennessee, USA take two days by truck. Warbler enjoys healthy margins from its product, which costs the company US \$104 and retails for US \$199.

Rival Hipster, on the other hand, depends on outsourced manufacturing and therefore has only indirect control over the supply side. Manufacturing schedules are jointly planned but changes must be negotiated, as other electronics companies share the manufacturing lines. Because of those shared facilities, moreover, Hipster must keep close watch on the contract manufacturer to guard its intellectual property. Product quality is tightly defined by Hipster and measured by the contract manufacturer’s system. Hipster must trust the CM’s reporting to be accurate

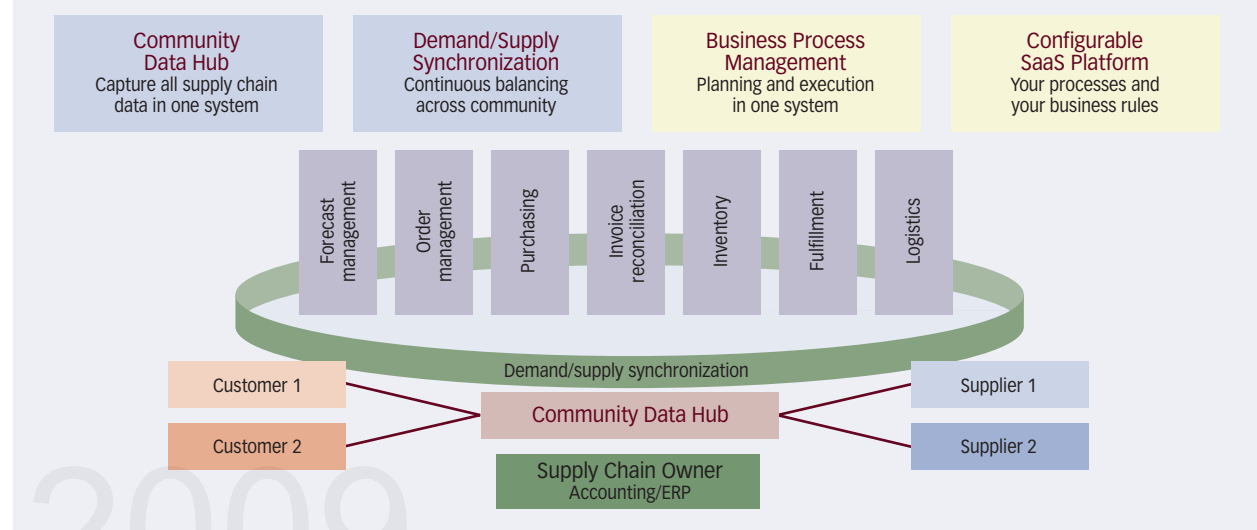
and true—an important concern given that any quality issue would reflect on the Hipster brand, not on the actual manufacturer. Hipster and its CM work with a variety of component-supplier representatives around Guangzhou to establish sourcing agreements, but the CM is responsible for managing those relationships, including planning and quality assurance.

In this environment, interaction between Hipster and suppliers is convoluted, managed by spreadsheet, phone, fax, and e-mail. Hipster’s shipments take 33 days from purchase order to arrival at its Louisville, Kentucky, distribution center in the United States. However, it does enjoy a market of one billion-plus potential customers in its “backyard” of China as well as a cost advantage: Hipster’s MP3 players retail at US \$199—the same price as Warbler’s—but they cost the company just US \$73.

Assuming an equal product design and steady-state production, at first glance it appears that Hipster has the advantage, at least from a cost perspective. In reality, however, Hipster’s supply chain challenges make it difficult for the company to create and maintain a cost advantage.

To understand why this is true, let’s examine how both companies would respond to a sudden spike in demand. Say that on Sunday, June 20, a celebrity rock musician declares August to be “Wear Orange Month” in recognition of his favorite charitable cause. A number of large retailers sign on to the cause and decide to support it with special promotions on orange-colored MP3 players. The retailers place orders for 500,000 orange 2Cools and 500,000 orange Hipsters for August—double the monthly forecast for both products.

[FIGURE 2] COMMUNITY SUPPLY CHAIN MANAGEMENT



On Monday, June 21, Warbler’s planners in New York City receive the retail orders and contact plant planners in Juarez. They also telephone their third-party distribution center and their retailer customers to verify how many orange MP3 players they already have in stock and what inventory they have on hand for other colors. This will help them understand how to adjust planning for those stock-keeping units (SKUs). Based on that information, the planners quickly adjust line schedules to produce orange devices for the next two weeks. The standard lead time for this change is pushed out by one week, as Warbler’s plastic case supplier needs that time to produce additional orange cases. To make up for the additional week, Warbler will expedite the shipments at an incremental cost of US \$5 per unit. (This cost includes not only expedited shipping to the distribution center but also such cost factors as raw material procurement and transportation and changes to production schedules.) The company can begin shipping 100,000 additional orange devices per week beginning July 9.

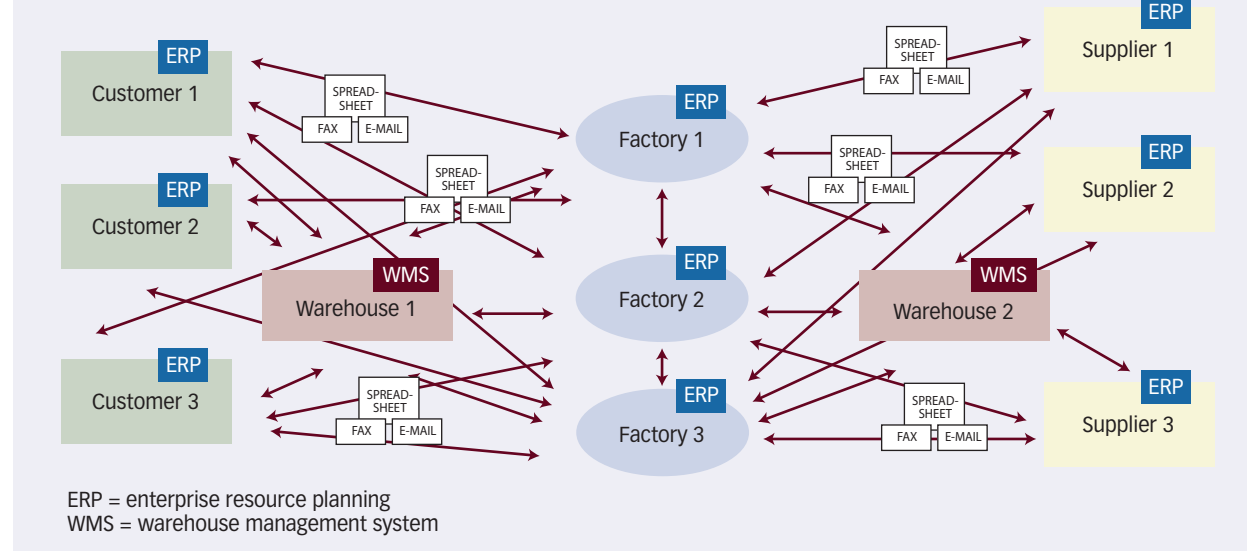
On that same Monday, Hipster’s planners in Los Angeles, California, receive the retail orders and adjust their spreadsheet forecasts, which they then fax to the primary CM’s planners in China. On Tuesday (a gap due to the time-zone difference), a planner in Los Angeles checks her e-mail and learns that the primary CM is unable to meet the request. Negotiations ensue by telephone and e-mail, delayed by the time and date difference, and by Friday Hipster and the CM conclude that they can produce 150,000 additional orange devices per week by adding production at Hipster’s alternate contract manufacturer’s plant starting July 14. To change the alternate CM’s production schedule will cost an incremental US \$19 per unit (US \$14 more than Warbler). On top of that, the standard 33-

day lead time will not support the retailers’ promotion timeline, so Hipster must ship from China to the United States by air express. The additional transportation and logistics costs will add US \$6 per unit.

Both models share an underlying challenge: the need for periodic planning that meshes with continuous demand/supply synchronization and for intercompany collaboration that can address demand and supply fluidity. But like Hipster, most supply networks—whether manufacturing in-house or outsourcing—are still limited to “management by spreadsheet,” a practice that isolates information, segments visibility, and creates latency in information exchange, consolidation, and rationalization. By depending on an outsourcing model that does not focus on the interconnectedness of the supply chain community, Hipster has given up the flexibility it needs to respond to sudden marketplace changes. Without the ability to quickly change production to accommodate the “orange” promotion, Hipster has lost its competitive advantage to a company that can move faster because it has direct control of manufacturing.

But it doesn’t have to be that way. By combining new business processes (such as those described in the sidebar “A framework for community supply chain management”) with community supply chain management technology, brand-owning companies like Hipster can better manage the complexity of a multi-enterprise network to create a flexible, cost-effective supply chain with a sustainable competitive advantage. If Hipster used community supply chain management software as the basis for a collaborative framework, it could exert more influence over its supplier base, synchronize supply and demand continuously over multiple enterprises, and implement community decision making to resolve supply chain prob-

[FIGURE 1] COMPLEXITY OF TRADITIONAL MANUFACTURING RELATIONSHIPS



lems. (See Figure 2 for an example of a community-based approach for supply chain management.)

The only way to consistently balance real-time demand and supply is to start with a central data hub. As depicted in Figure 2, today's community supply chains require that all community members share transactional data (such as forecasting from customers, sales orders from customers, purchase orders to suppliers, and inventory) in one common place—a community data hub—that continuously synchronizes demand and supply. Once the data is in place, users can then deploy that data for cross-community business-process management activities, enabled by a configurable software-as-a-service (SaaS) solution that ensures all partners and customers (irrespective of the systems they're running) are on the same platform.

Management by influence

When companies opt for outsourced manufacturing, they give up direct control over the supplier and customer community. That is, now that companies don't have their own manufacturing facilities, they need to constantly interact with suppliers to negotiate costs and the timing of deliveries. Since companies that outsource manufacturing are unable to directly control how quickly they can react to atypical or last-minute customer requests, their ability to meet customers' needs is dependent on their ability to influence suppliers and community members.

As a result, they must “manage by influence” if they are to address the risks and rewards of product sourcing. In order to make this approach work, companies must choose their partners based not only on their core competence but also on how effectively they can be managed and influenced. Companies cannot impose a one-size-fits-all approach to managing by influence because each business relationship is different. Getting the subtle nuances of these relationships right sets the foundation for trusting, sustainable relationships that will improve product velocity and reduce supply chain costs.

With the right partners, a brand-owning company can establish community goals and provide incentives for those partners to achieve community success. For example, instead of creating individual key performance indicators (KPIs), brand owners can set measures for the entire community and offer financial incentives for meeting them.

Managing by influence also requires breaking down the walls between marketing, design, engineering, and manufacturing. When a company decides to outsource manufacturing, these functions suddenly have less control over “brand values” that they used to manage, such as quality, compliance, and time-to-delivery. To ensure the same quality, reliability, and responsiveness that could be achieved if the brand-owning company handled the manufacturing itself, the company must adopt new business management and risk management processes. These include: set-

ting community goals and key performance indicators (KPIs); creating an environment of proactive sense-and-respond to change; paying close attention to supplier cost and business viability; and ensuring technology is user-friendly for the whole community and that data is reliable, consolidated, and available to decision makers. By establishing these new cross-community processes, wherein marketing, design, engineering, and manufacturing can collaborate more than they have in the past, the supply chain community will operate as one entity with multiple, harmonious parts and shared rewards.

Multi-enterprise synchronization

While technology can't on its own create lasting supplier relationships, it is at the heart of synchronizing supply and demand in a community model, especially because networks that rely on contract manufacturers face the inherent challenge of long order-to-fulfillment cycles. When deployed alongside the business processes listed in the sidebar, a global technology platform that is accessible via the Internet and functions as a hub for multi-enterprise visibility provides an important tool for creating a flexible, community supply chain.

To grasp the importance of such a platform, consider the earlier Hipster example. When the special orange MP3 player program came along, Hipster did not have sufficient leverage with suppliers to meet the unexpected spike in demand because the supply chain information it needed was scattered among disparate systems and spreadsheets. As a result, it was impossible to immediately gather the meaningful information it needed to make an informed decision and quickly adjust to a new demand scenario. If Hipster had a global platform with a single data repository that offered real-time visibility of all inventory, production, and planning information, the company and its partners would have had access to consistent, updated information. That visibility would have allowed the Hipster supply chain community to make informed decisions quickly enough to respond to—and take advantage of—the demand spike.

Because Hipster doesn't have the influence or power to ensure that its contract manufacturers will meet all of its demands, it needs a holistic view of supply and demand in order to determine where and when to gain leverage with its partners, shifting production and inventory in order to meet customer demand. When Hipster is able to combine the cost advantages of contract manufacturing with the business practices and technology that enable a community approach to supply chain management, it will gain a competitive advantage against the likes of Warbler.

Community-based decision making

As we have seen, strong partner relationships supported by a global technology platform will allow a brand-owning company to be more agile and adaptable in responding to changes in the marketplace. In the resulting supply chain community, suppliers and customers become part of the brand-owning company's business network, sharing in the collective risks and benefits and making timely and reliable decisions.

Central to this community-based approach to decision making is a move from one-to-one interactions, with a supply chain “dictator” giving indisputable directives, toward many-to-many, peer-to-peer relationships in which cost/benefit considerations are weighed at both the individual and community levels. This approach requires centralized, real-time, synchronized information that is accessible to all (with proper permissions, of course). For companies like Hipster, a community approach to decision making enabled by access to this type of information will improve their ability to orchestrate supply chain stakeholders.

If the community remains focused on long-term partnerships and sustainable business success, it may make decisions that will lead to a loss in the short term but an overall gain for the entire community in the long term. For example, the Hipster supply chain community may agree to absorb significant cost in the short term in order to fulfill the additional demand created by the “orange” promotion. However, the community will benefit in the long term from increased brand awareness and from greater loyalty among customers and (by its willingness to share the cost burden) among suppliers.

A community-based model for supply chain management that includes both technology and complementary business processes will help companies like Hipster benefit from long-term, influential relationships with manufacturing partners. Such a model also provides visibility into the entire business network, enabling companies to leverage elastic supplier capacity, lead times, and inventory for significantly improved supply chain performance.

For many companies, outsourced manufacturing seems like a can't-miss option. But unless they have stockpiles of cash and can use their leverage to influence suppliers, outsourcing alone won't save them money. Supply chains that rely on outsourced manufacturing demand a community approach, built on a global technology platform, if they are to achieve lower costs, increased product velocity, and better customer service. △

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[A FRAMEWORK FOR COMMUNITY SUPPLY CHAIN MANAGEMENT]

Effective community supply chain management requires not only a collaborative technology platform but also a new set of best practices that will help to synchronize activity across all business partners. Our recommendations:

- *Manage by influence.* Starting with supplier selection, focus on establishing trust and building sustainable relationships. Continue to build this trust throughout all your communication with contract manufacturers. Without this type of relationship it will be difficult, if not impossible, to synchronize your entire supply chain network.
- *Agree on a system of risks and rewards.* By replacing individual goals and key performance indicators (KPIs) with community goals and KPIs, you will create a foundation for carrying out informed group decisions and measuring supply chain performance.
- *Conduct online negotiations.* Instead of handling quantity negotiations by e-mail and fax, use a single online negotiation system that will allow you and your

partners to see the historical impact of demand and project its future impact on production and planning.

- *Be flexible.* Be proactive in anticipating, identifying, and addressing supply/demand shifts so that your supply chain remains flexible and agile. Don't sacrifice flexibility in your outsourcing arrangements; prepare your network to respond on short notice and thereby create competitive advantage.

- *Use a global software platform to enable timely, fact-based decision making.* Deploy a system that provides cross-community, real-time visibility into all forms of inventory, forecasts, and plans. A community supply chain management platform allows all trading partners to analyze, provide decision support, and manage execution.

- *Schedule periodic intercompany planning.* Involve all partners in periodic planning sessions to ensure that production capabilities will be able to respond as needed as you continuously synchronize demand and supply.