Don't Let Your Supply Chain Control Your Business

Manufacturers are delegating too much power to top-tier suppliers, undermining their own ability to innovate, cut costs, and manage risk. *by Thomas Choi and Tom Linton*

In the past 25 years, major original-equipment manufacturers around the world have shifted to the Japanese tiered approach to supply chains. They've radically reduced the number of suppliers that they directly manage and off-loaded responsibility for supervising the rest, along with the task of building major subsystems, to a handful of first-tier suppliers. The attractions for OEMs were faster new-product introductions, larger volume discounts, reductions in the capital and risks associated with developing and producing the subsystems, and the ability to spend less management time on overseeing the multitude of lower-tier suppliers and more on building core competencies.

But we believe that the delegation has gone too far. Our conclusion is based on studies of the practices at some 20 leading multinational corporations that one of us (Thomas Choi) conducted and the longtime experience that the other (Tom Linton) has had as a purchasing executive at such companies as LG Electronics (LGE), Agere Systems, Freescale Semiconductor, and IBM. We discovered that a heavy reliance on first-tier suppliers is dangerous for OEMs. It weakens their control over costs, reduces their ability to stay on top of technology developments and shifts in demand, and makes it difficult to ensure that their suppliers are operating in a socially and environmentally sustainable fashion. The remedy is for OEMs to forge direct relationships with a select number of lower-tier suppliers, and in this article, we'll explain how.

The Dangers

But first, let's look at the risks of giving top-tier suppliers too much responsibility.

Less control over costs. Managers of large OEMs assume that they can save money by outsourcing the design and production of major supply subsystems. But here's what happens when a company delegates considerable control over a product's bill of materials: The total costs of ownership of the product (including such things as transportation and inventory management) become opaque to the OEM. And, as some manufacturers found out the hard way during the recent recession, that means the company has little leverage to reduce costs—especially if it has handed over an entire subsystem to a single supplier and can't quickly stage a competition or switch suppliers.

ILLUSTRATION: BRETT RYDER

Managers also need to factor in various hidden costs. One is the resources and time required to investigate and resolve problems rooted in lower-tier suppliers. Another is quality. Honda of America learned that when it allowed top-tier suppliers to select their own vendors of plastic parts, the textures and colors of the parts often didn't match, because their makers bought resins from different companies.

Less visibility into technology developments. Lower-tier suppliers can provide valuable information about the latest manufacturing advances and technological innovations. In consumer electronics, for example, having direct access to the newest ideas of chip-design houses, which often are second- or third-tier suppliers, is critical. Such access has enabled companies like Apple and LGE to influence the development of emerging technologies, incorporate them into products before their rivals do, and secure supplies at an advantageous price. Conversely, companies that lack such access have found themselves reacting to competitors' innovations and struggling to match their features and prices. We have seen the same pattern in other industries, including aerospace, automobiles, and telecommunications-network equipment.

Less access to market information. Lower-tier suppliers that serve a number of markets sometimes spot shifts in the economy early. OEMs that don't have close relationships with such suppliers can miss opportunities to adjust orders and lock in favorable prices for parts and materials, losing ground to more-astute competitors. This happened in the consumer electronics industry in early 2009, when a number of companies didn't realize that demand for semiconductors was about to rebound. (Read on for more about that.)

Less control over sustainability. Environmentally and socially sensitive consumers are increasingly holding manufacturers accountable for the performance of their individual suppliers. (See "Don't Tweak Your Supply Chain—Rethink It End to End," HBR October 2010.) For example, the massive contamination of the Pearl River Delta area in China by suppliers to the denim industry had the potential to damage the image of Western apparel makers, and suicides at a Chinese contract manufacturer used by Dell, Hewlett-Packard, and Apple could have tainted those companies' brands. As technology makes the supply chain much more transparent to end customers (see "The Transparent Supply Chain," HBR October 2010), more and more companies will face the fallout from their suppliers' misbehavior.

Many OEMs incorrectly believe that creating an approved vendor list (of the companies from which top-tier suppliers are supposed to buy parts and materials) will protect them from the dangers described above. But this common practice poses potential problems. First, ensuring that top-tier suppliers abide by the list is easier said than done. They will naturally look for ways to depart from the list when it's in their interest—for example, if they can boost their profits by getting a better price from another subcontractor or can obtain a volume discount by pooling orders from several OEM customers. What's more, having a comprehensive approved vendor list can make it easier for a top-tier supplier to build a business that competes with its OEM customer.

But in our view, *not* having a list poses bigger risks. Left to their own devices, top-tier suppliers will likely keep most if not all of the cost savings they wring from the lower tiers. In addition, the lack of a list can make it much more difficult for an OEM to switch top-tier suppliers. The OEM would then be changing not just the one company but the entire supply chain beyond that firm. Also, when OEMs don't have an approved vendor list, the loyalty of the subcontractors typically shifts to the top-tier supplier.

Even with an approved vendor list, an OEM may put itself at risk if it delegates the management of lower-tier vendors to the top-tier supplier—as a large aerospace manufacturer discovered when it stopped buying raw material directly for one of its top-tier suppliers. That supplier then developed

Idea in Brief

Big original-equipment manufacturers have gone too far in delegating management of lower-tier vendors to top-tier suppliers.

By doing so, OEMs have weakened their control over costs, reduced their ability to stay on top of technology developments and shifts in demand, and made it more difficult to ensure that suppliers are operating in a sustainable fashion.

The remedy: OEMs should selectively re-establish direct relationships with lower-tier suppliers. These include suppliers that have the most significant impact on the total cost of goods sold, are leaders in developing innovative solutions, pose the biggest sustainability risks, and can provide early information on impending shifts in the economy.

a close relationship with the raw-material vendor. When the aerospace company wanted to switch to a new top-tier supplier and asked a prospective candidate to submit a proposal, the candidate contacted the raw-material vendor for a price quote, and the vendor leaked word to the incumbent top-tier supplier. The result: The incumbent purposely kept its inventory of finished parts for the aerospace manufacturer so low that the manufacturer couldn't make the transition to a different supplier.

So what's the answer? An OEM should have a list, be vigilant about getting suppliers to abide by it as much as possible, and directly manage relationships with select lower-tier suppliers itself.

How to Choose

Best-practice companies such as Apple, Dell, HP, Honda, IBM, LGE, and Toyota do what we just advised: They have approved vendor lists but never completely relinquish decisions about a product's components and materials to top-tier suppliers. They carefully determine which items they should directly source themselves and which they should totally delegate. Here are some guidelines:

Retain control over items that have the most significant impact on the total cost of goods sold. Typically, 20% of the items on the list of a product's parts and materials—the bill of materials, or BOM—account for 80% of the total cost. A standard mobile phone, for example, contains two or three semiconductors and an LCD screen that represent more than 50% of its total BOM cost. Usually, even a 1% reduction in the price of such items translates into considerable savings. If decisions about purchasing them are turned over to a first-tier supplier, it might make changes to the BOM that are not in the OEM's best interest. For instance, that supplier might try to replace a key part with one that is used in a competing OEM's product, which could lead to problems: In times of high demand, the supplier of the part might put the other OEM's needs first.

Manufacturers that retained control over their BOMs, developed deep knowledge of the critical costs in their supply chains, and selectively maintained direct ties with lower-tier suppliers were able to react quickly when the Great Recession occurred. Take LGE. In 2009, its 18 major commodity teams worked with about 300 top- and lower-tier suppliers to reduce costs in a way that everyone felt was fair—and found savings of more than $6 billion. One such collaboration resulted in the revelation that the power cords on LGE's products were longer than those on competitors' offerings. Shortening the cords and standardizing their color (making them all black) saved $10 million annually. In another case, an LGE-Qualcomm team figured out how to combine on one chip functions that had previously been performed on multiple chips, eliminating the need for several components.

Had LGE merely imposed a unilateral price reduction on top-tier suppliers, as many OEMs do, it could never have realized such large savings and probably would have alienated critical top-tier suppliers.

Consider a supplier's innovation potential. In emerging markets in general and in India, China, and Taiwan in particular, the rapid growth in the

Lower-tier suppliers that serve a number of markets often spot shifts in the economy early on—and can warn customers about them.

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number of college graduates is spawning a network of creative new suppliers. But OEMs that have outsourced purchasing and cut their own purchasing staffs might not be able to spot these up-and-comers.

If a particular supplier shows promise, an OEM should consider retaining control over that relationship. While this might seem obvious, a lot of companies don't do it—mainly because they are focused too much on bottom-line issues and too little on how suppliers could help them innovate.

Managers should remember that the suppliers of important technology might not necessarily be those currently responsible for the highest-cost items on the BOM. A case in point is human-machine interface (HMI) technology, which makes the operation of products more intuitive. Five years ago the suppliers that delivered HMI-related software and design work did not represent a significant portion of a product's total cost. But Apple, for one, felt that HMI technologies would play a strategic role in future products, so it maintained close relationships with companies in that domain. That was wise: HMI technologies now account for more than 40% of the iPad 2's total cost, according to iSuppli, a market research firm.

How can an OEM identify inventive lower-tier suppliers? One way is to look for suppliers that have been especially successful at reducing the cost of what they produce. Cost innovators usually are also technology innovators. Another is to look for suppliers that serve multiple industries and whose vendors also serve several industries. They typically are exposed to a wide diversity of ideas.

Take into account the environmental and social impact of parts, including the processes used to produce them. We suggest that in addition to using approved vendor lists, OEMs employ an updated form of value analysis when making sourcing decisions—including which items top-tier suppliers will be allowed to purchase on their own. Traditionally, value analysis has focused on maintaining the functionality of a product while reducing its cost. The new sustainable value analysis focuses on maintaining the functionality and cost of a product while reducing its negative effects on the environment.

This kind of analysis led IKEA to learn how to design and manufacture furniture from wood with knots, which in the past had been considered waste. The move reduced the environmental impact of IKEA's furniture and significantly lowered its cost. Similarly, LGE swapped the metal it used for the back panel of its TVs for a plastic composite, thereby decreasing the environmental impact, weight, and cost of those products.

Stay close to vendors that can provide early information on shifts in the economy. These also tend to be firms that serve a wide range of industries, such as Taiwan Semiconductor Manufacturing Company (TSMC). In January 2009, LGE bypassed top-tier supplier Qualcomm and established a direct tie with TSMC, one of the world's largest chip foundries. Concerns that Qualcomm wasn't passing on the savings from then-plunging chip prices and uncertainty about what would happen to the global economy that year prompted Tom Linton, who was then LGE's chief procurement officer, to take this step. In the first quarter LGE learned that TSMC's orders from a large number of industries were picking up, that its capacity was tightening, and that lead times were increasing. Those were all indicators that the global economy was going to rebound in 2009, sooner than many anticipated. In response, LGE rushed to negotiate deals with suppliers and was able to lock in cost savings before prices rose. Caught off guard, a number of competitors couldn't do the same.

An OEM can forge direct ties with lower-tier suppliers in a number of ways. It can build informal personal relationships with the suppliers' executives even if it doesn't have contracts with those companies. Alternatively, it can establish a formal agreement. Honda of America and Toyota, for example, negotiate contracts with select lower-tier vendors, and then order their top-tier suppliers to use those vendors exclusively and execute the terms. (See the exhibit "A Model Supply Chain.")

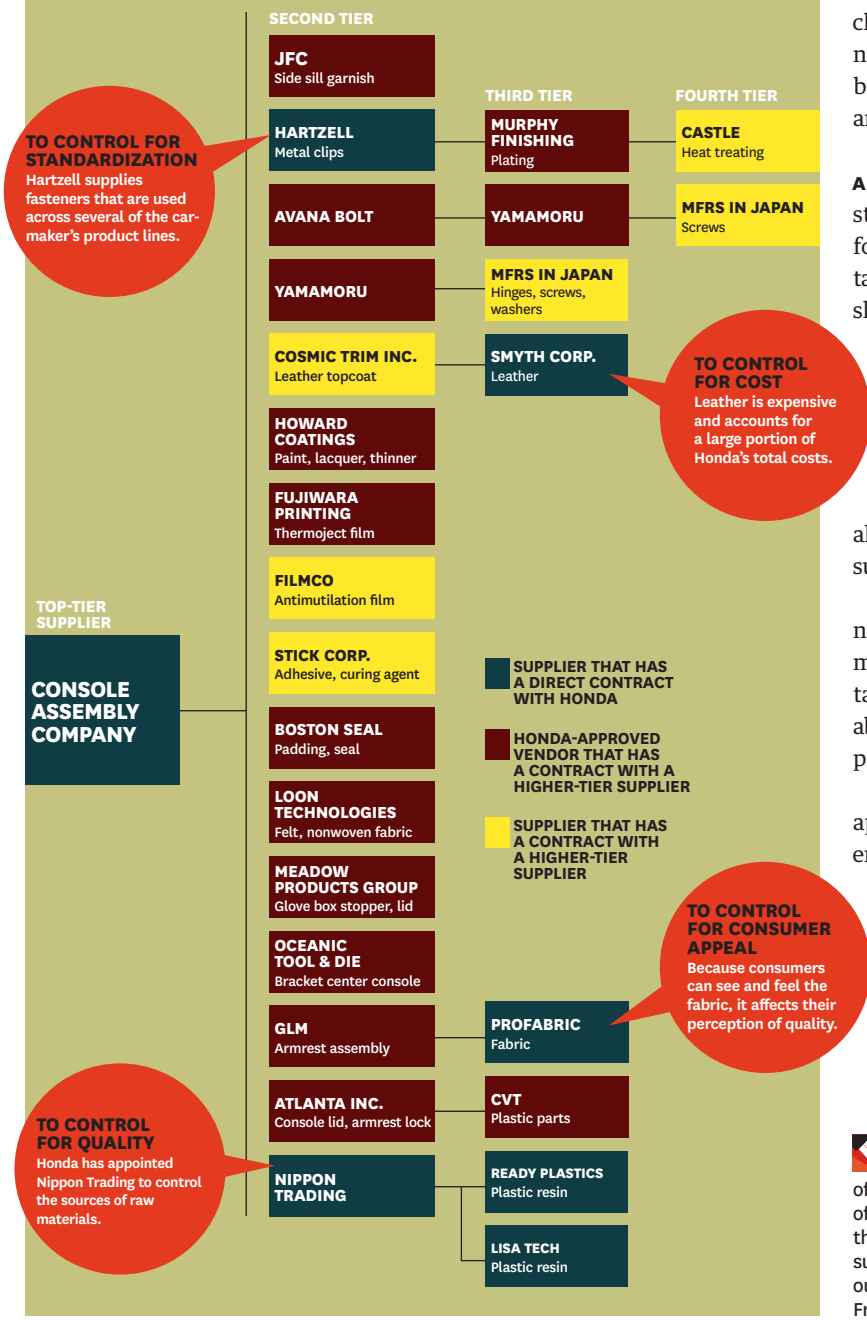
Revamping Purchasing

Switching to the approach to supply chain management that we've described may require OEMs to

A Model Supply Chain

Honda of America often contracts directly with key second- and third-tier vendors and then asks its top-tier suppliers to receive the contracted parts from those vendors. In essence, Honda is asking the top-tier suppliers to manage those vendors for quality and delivery, while it manages them in areas related to cost and technology. The diagram below illustrates how this works in the portion of the Honda Accord Center's supply chain that has been delegated to its console assembly company. (Note that all suppliers' names have been disguised to provide anonymity.)

This approach allows Honda to be efficient but retain control over vendors that have a significant impact on cost and quality. Honda protects itself against risks with the remaining lower-tier suppliers by requiring that most of them be chosen from its approved vendor list.



reshape their purchasing functions. Manufacturers that radically shrank their purchasing departments when they delegated sourcing may have to expand them in order to handle more relationships. They may need to supplement or replace people who have only commercial expertise with people who have analytical skills and deep knowledge of commodity markets. And companies that have organized their purchasing functions around particular commercial relationships or types of commodities might have to change their teams' focus to staying on top of technological, supply-and-demand, and cost trends in broader commodity sectors like semiconductors, oil and plastic resins, and metals.

A MOVE to managing select lower-tier vendors constitutes a major change for OEMs that have been focusing predominantly on top-tier suppliers. It can take one to two years to accomplish. In addition to reshaping the purchasing function, it involves getting the buy-in of key internal stakeholders such as the product divisions, the chief technology officer, and the chief financial officer. (Since one aim of the approach is to consolidate commodity purchases further, product divisions may be asked to compromise on particular components or materials.) For all these reasons, purchasing will need the support of the company's leaders to sell the change.

Since they stand to lose power, top-tier suppliers naturally will not be happy with the new arrangement and may resist it. So another challenge is maintaining the peace and persuading them that by enabling the OEM to be more competitive and sell more products, they will profit over the long term, too.

Even though implementing the new multitier approach isn't easy, OEMs have no choice but to embrace it. In an era when the pressures to continually drive down costs and stay on top of trends in technology and sustainability are growing more intense by the day, it's essential. The reality is that an OEM simply cannot delegate responsibility for keeping itself competitive to its top-tier suppliers. It must control its own destiny.

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