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Farming out in-house operations has become a religion. Faith must now be tempered by reason.

f all manufacturers sang from the same hymnal—and many do—they would outsource almost everything: management gospel holds that manufacturing is too labor- and capital-intensive to support the high margins and fast growth that investors demand. By shedding assets, companies can be born again as product designers, solutions providers, industry innovators, or supply chain integrators—and, it is said, quickly boost their return on invested capital. Indeed, Standard & Poor's reports that in the year 2000, the market-to-book ratio of the S&P 500 was six times greater than it had been in 1981—a reflection of the declining importance of tangible assets.

Such pressures and perceptions make outsourcing an almost irresistible impulse for manufacturers. Global access to vendors, falling interaction costs, and improved information technologies and communications links are giving manufacturers unprecedented choice in structuring their businesses. Through outsourcing, companies can now dump operational headaches and bottlenecks downstream, often capture immediate cost savings, and avoid labor conflicts and management deficiencies. We are aware of no managers who have been taken to task for farming out in-house operations.

But in the race to hand over capital-intensive manufacturing assets to outside suppliers, companies may be ceding the very skills and processes that have distinguished them in the marketplace. Consider the case of Gibson Greetings, the oldest US greeting-card maker. In the 1990s, it started running out of cash. To realize savings, Gibson chose to outsource its manufacturing, but it soon ran into supplier-management problems that cost the company its place at large retailers. In the meantime, its competitors had been investing in more efficient printing and production technologies. Ultimately, one of those competitors acquired Gibson. An analyst observed, "The final nail in the coffin was that Gibson got out of the manufacturing business and started outsourcing."¹

Obviously, the decision to outsource usually doesn't produce such a drastic outcome; done right, outsourcing manufacturing or services can deliver game-changing levels of value. But by assuming that outsourcing is the answer rather than critically assessing its pros and cons, companies may be failing to do what really matters: improving a company's performance and maximizing value. Outsourcing can be instrumental in realizing these goals—but not always.

We are not suggesting a return to the time when Ford's River Rouge complex made its own glass, steel, and tires; an original-equipment manufacturer facing the complexities and asset intensiveness of that level of vertical integration would now collapse under its own weight. Indeed, about two-thirds of the North American auto industry's \$750 billion in value now resides with suppliers. This year, the average electronics OEM was hoping to outsource 73 percent of its manufacturing, according to Bear Stearns, and 40 percent of all OEMs were hoping to outsource the manufacture of 90 percent or more of their final product.² Pharmaceuticals companies have been witnessing the emergence of a \$30 billion contract drug-development and -manufacturing market with annual growth rates of 17 to 20 percent.³ In general, the outsourcing of operations and facilities across industries rose by 18 percent in the period from 1999 to 2000.⁴

¹Marcia Pledger, "The near-fall of Gibson," *Cleveland Plain Dealer*, March 9, 2000.

²Bear Stearns Fourth Annual Electronics Manufacturing Outsourcing Survey, May 2001.

³Leah Perry, "Outsourcing industry leaders," *Pharmaceutical Technology*, January 2001, pp. 68–73.

⁴*The 1999 Outsourcing Trends Report*, LaGrangeville, New York: Michael F. Corbett & Associates, March 1999.

Yet the rush to outsource has delivered much less value than it might have. A McKinsey study indicates that more effective outsourcing, which requires a better process for identifying and managing the "natural owner" of every activity in the value chain, could by itself almost double the auto industry's

total profits. But so far, most of the supply networks of the automakers have been notable less for capturing a larger share of the total value for themselves than for imposing punitive (and ultimately unsustainable) terms on suppliers (*see* sidebar, "Biting the hand that feeds you," on the next page).

In the wireless-telephone industry, as well, important players are grappling with such make-or-buy questions. One of the industry's most aggressive practitioners of outsourcing has found that it alone doesn't satisfy the investment community. By contrast, industry leader Nokia has been working to improve the productivity of its existing assets and to integrate its sourcing, sales, and manufacturing efforts. The company has designed its new Beijing complex, for example, to assemble phones with zero inventory for the supply base that it manages and the functions it hasn't already jobbed out. Antti Wäre, vice president of system business at Nokia (China) Investment Company, has said, "There's no point transferring your inventory to your suppliers, because they will then have the inventory costs, and you will see it showing up in your component prices. But if you can reduce the whole chain's inventory, then you will be very competitive."⁵

Many practitioners of outsourcing clearly recognize that such difficulties exist. One-fifth of the executives in a recent survey say that they are dissatisfied with the results of their outsourcing arrangements, while another fifth of the respondents say that they are neither satisfied nor dissatisfied—which suggests that they are not seeing clear benefits.⁶ Dun & Bradstreet reports that 20 to 25 percent of all outsourcing relationships (manufacturing, finance, information technology, and so forth) fail within two years and that 50 percent fail within five. Nearly 70 percent of the companies responding to a Dun & Bradstreet survey asserted that suppliers "didn't understand what they were supposed to do" and that "the cost was too high and they provided poor service."⁷

⁵Richard C. Morais, "Damn the torpedoes," *Forbes*, May 14, 2001, pp. 100–9.

⁶The 1999 Outsourcing Trends Report, LaGrangeville, New York: Michael F. Corbett & Associates, March 1999.

⁷Marq R. Ozanne, *D&B Barometer of Global Outsourcing*, 2000.

In such cases, it has often been forgotten that outsourcing isn't an end in itself but rather a strategic tool for enhancing overall performance. The ability of outsourcing to play this role depends partly on the form chosen—the release or sale of assets, a spin-off or initial public offering of the business, or the formation of an alliance or joint venture. If outsourcing isn't used strategically, it probably shouldn't be used at all.

Biting the hand that feeds you

US-based automakers, once shining examples of businesses that did it all, have steadily handed over manufacturing to their suppliers during the past two decades. By the late 1990s, General Motors and Ford had spun off much of their remaining parts-manufacturing operations: Delphi Automotive Systems and Visteon, respectively. Today, DaimlerChrysler, Ford, and GM mostly design and assemble vehicles, and their suppliers mostly make what goes into them. For the original-equipment manufacturers, competing fiercely in a maturing industry, deverticalization has meant moving their assets, activities, and inventories to their supply chains.

But the OEMs may have taken this strategy too far—squeezing their suppliers relentlessly, wringing out an endless series of price cuts, and extracting other operational and strategic concessions. As a consequence, most makers of auto parts have difficulty just maintaining, let alone raising, their margins, and many of these companies are earning less than their cost of capital. It isn't surprising that the market has turned against the suppliers, which are almost even with makers of fishing equipment in destroying shareholder value.¹ If this trend continues, struggling suppliers may have to cut their investments in innovation and quality—which would in turn impair the OEMs' performance. Worse, automakers may have to reintegrate assets and activities they once proudly outsourced.

What went wrong? Suppliers are in trouble for a number of reasons—above all, their lack of bargaining power. The OEMs are substantially bigger than their suppliers (both Ford and GM have more than five times the revenue of the largest) as well as more concentrated (over 80,000 makers of auto parts around the world vie for the business of a handful of large and midsize global OEMs).² This concentration of power has given OEMs the opportunity to outsource and the ability to squeeze their suppliers, which are powerless to stop them.

And squeeze they do. Since 1995, the real price of cars in the United States has declined by approximately 0.5 percent a year. The OEMs' response has been to pressure the suppliers; Ford, for instance, has demanded and won a price reduction of 3 to 5 percent from several suppliers over the past few years. Other OEMs have won similar cuts.

Now OEMs have raised the stakes for suppliers still higher by striving to produce more car models while using fewer underlying vehicle platforms. At the same time, OEMs are trimming the ranks of the suppliers they buy from and shifting Whether to outsource is one of the most significant decisions any executive team ever makes. Outsourcing involves massive changes to a business's delivery system—changes involving trade-offs and organizational trauma. It is difficult to reverse. It affects the livelihood of thousands of employees. And it opens critical aspects of a company's core business to the scrutiny of supply partners and other external forces, and to their disruptive interventions.

the responsibility for integration and even design engineering to the supply chain. Thus, the value of deals is rising for suppliers that don't want to be left behind. As the deals get bigger, so do the risks for suppliers that must invest in these new capabilities to win the deals and do the work. Lear Corporation, for instance, bought the United Technologies auto parts unit for \$2.3 billion, hoping to make a strong bid to participate in GM's Delta Car program. GM's decision to postpone its launch delayed Lear's return on the investment. Having to compete for such business puts suppliers under even greater pressure to cut prices.

Of course, the OEMs are not responsible for all of the woes of the suppliers. To grow and to strengthen their bargaining power, suppliers closed more than 1,500 M&A deals from 1995 to 2000, but many of the resulting combinations ultimately failed to yield returns above the acquirers' cost of capital. Moreover, overcapacity is rife in some segments of the supplier industry.

It turns out that the suppliers' difficulties, from whatever source, are creating trouble for the OEMs. DaimlerChrysler, for example, had to delay the launch of its Smart Car for several months because suppliers, struggling with new processes and techniques, initially couldn't meet the carmaker's quality targets. More problems may lie ahead. If margin-constrained suppliers cut back on R&D spending, the kinds of product failures and recriminations that have rocked Ford and Firestone could become commonplace. Even worse, OEMs could face an increasing number of bankruptcies among suppliers or their exodus from the sector. If either should happen, OEMs may be forced to lend financial support to troubled suppliers of key systems—or even to become manufacturers again.

There are no easy solutions to such problems. In the near term, suppliers must continue improving operations to stay ahead of eroding margins. In the longer term, OEMs will need to explore strategies for improving the performance of the value chain as a whole. But don't hold your breath: OEMs too are under tremendous pressure and aren't likely to change their spots any time soon.

—Anjan Chatterjee, T. V. Kumaresh, and Aurobind Satpathy

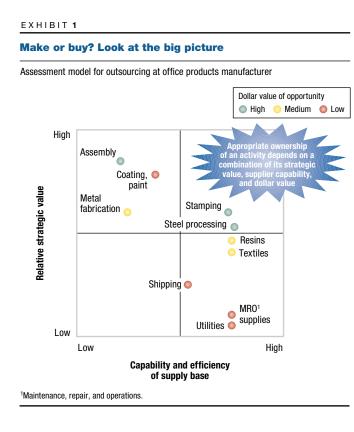
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¹During the past five years, auto suppliers have graced investors with a return of 4 percent a year, while the return for the S&P 500 has been 22 percent. Capital is fleeing the sector.

²The bargaining power that the automotive OEMs enjoy is unique. In the aerospace sector, for example, big buyers such as Boeing are matched by big suppliers such as GE.

The clued-in and the clueless

The make-or-buy riddle can be answered correctly only if you first understand the strategic (and not just the dollar) value of key activities and then assess the efficiency and capabilities of their providers, internal or external. A large office products manufacturer exemplifies this comprehensive approach (Exhibit 1), for it assessed its processes in a full operational



context. Managers asked not just how much they could save in direct costs if a given function were farmed out but also (in the case of steel stamping, for example) how much floor space could be opened up by doing so. The company realized that it could not only outsource the stamping operations at each of its plants but also move the operations of an entire plant into the vacated space.

Outsourcing the stamping operations should produce savings of 15

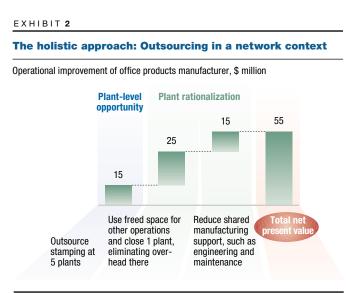
to 20 percent, and the plant closing will more than double the savings. Had the company looked at stamping alone, it would have kept that function inhouse, since operational improvements can produce savings comparable to those from outsourcing. But as a result of examining the big picture, the company can also eliminate overhead by mothballing a plant and improve the productivity of the remaining plants in ways that benefit the entire supply chain (Exhibit 2).

An aerospace company facing a slowing business environment and an asset base bloated by acquisitions provides a counterexample. Management had a gut feeling that the company ought to shed its \$50 million printed-circuitboard assembly operation, which was burdened by overcapacity at several facilities. Recognizing that local buy-in was important, senior executives delegated the task to plant managers, who considered creating an internal "center of excellence" that would shoulder the board-assembly work of the existing plants. Concerns about losing any portion of their business loomed large, however, since this course would raise their overhead rates, make their capacity even more underutilized, and thus pose a grave threat to their long-term viability. Moreover, none of the managers wanted to run the risk that someone else would be put in charge of so prestigious an operation. Establishing a center of excellence generally leads to initial cost savings of about 10 percent, but infighting and an instinct for self-preservation whittled the team's estimate to less than 1 percent.

Before deciding whether to go forward with the plan, the team asked suppliers to bid on the assembly business, even handing over the company's billof-materials costs. After seeing such vast inefficiencies and the managerial ineptitude that tolerated them, none of the bidders felt it had to offer more than a token 5 percent savings on the company's current costs. That ought to have been deemed too low to warrant moving the assets.⁸ The suppliers, given the higher volume of their purchased materials, should have been able

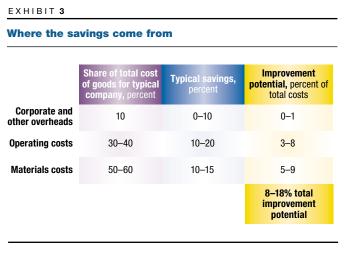
to deliver 15 to 20 percent savings in the cost of materials alone (9 to 12 percent of the full cost). Combined with direct-labor and overhead savings, this should have produced overall savings of 14 to 22 percent. Nevertheless, the managers took the bait.

The aerospace company fell victim to a hard truth: managers accustomed to meeting inter-



nal benchmarks often have no idea how their costs and capabilities compare with those available in the marketplace. Our experience shows that internal improvements can produce savings comparable to those of outsourcing—for

⁸Merely managing a supply relationship carries administrative costs for the client company of at least 3 percent (and sometimes more than 10 percent) of the value of a contract. See the report *Taking the Pulse of Outsourcing—Data and Analysis from the 2001 Outsourcing World Summit*, LaGrangeville, New York: Michael F. Corbett & Associates (Firmbuilder.com), 2001.



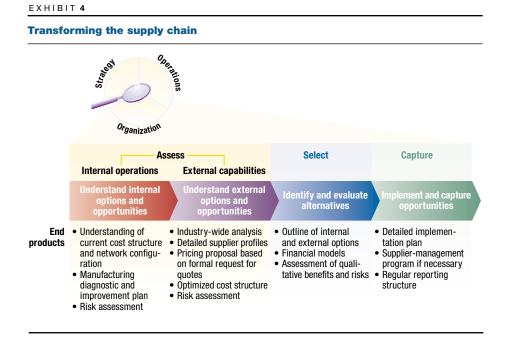
instance, 20 to 30 percent gains in directlabor productivity, better materials costs through improved purchasing practices, and significant reductions in required floor space. In most cases, a thorough makeversus-buy analysis will uncover total savings of 8 to 18 percent (Exhibit 3). They

may come from enhancing internal operations, from external suppliers, or from some combination of the two. Managers who accept less are probably leaving money on the table—or in their suppliers' pockets.

Making the assessment

It is vital to know how the true cost of manufacturing goods internally stacks up against the cost of acquiring these goods from suppliers. To make the assessment, senior management must consider three dimensions of performance.

- 1. Strategic: Does owning or enjoying preferential access to the asset have any strategic importance? How does the company's manufacturing strategy meet the needs of its overall business strategy? Ownership of design and manufacturing assets gives Intel, for instance, fast product ramp-ups and prevents the loss of technological know-how to outside suppliers.
- 2. Operational: What are the performance targets and the needs (such as lead times and unit costs) of the manufacturing process and the supply chain? Irrespective of ownership, what are the optimal supply chain arrangements for meeting those targets? Dell configured its supply chain to make good on its overall business strategy of delivering customized computers shortly after orders are placed.
- 3. Organizational: How does the business, having linked manufacturing strategy to business strategy, achieve results? Established companies, whether they manage reconfigured networks or operate long-standing internal ones, seldom have the skills to transform their supply chains.



Senior managers must use this three-dimensional perspective to assess, first, internal operations; then, external capabilities; and, finally, what combination of the two can create the most value and capture it through good network management (Exhibit 4).

Improving internal operations

Managers often don't know—sometimes because they don't want to—how their companies really stack up against the best-in-class providers. The costaccounting reports against which companies judge outside bids, for example, seldom accurately reflect all overheads embedded in plant activities. A supplier bid that appears to offer no savings over fully loaded costs, for example, could, during the course of three to five years, provide significant benefits by allowing managers to take on higher-value activities.

More common than ignorance is a tendency to base outsourcing decisions solely on current performance rather than on comparisons between the potential improvements offered by internal and external solutions. Even after years of belt-tightening and incremental gains in efficiency, we have found, most manufacturers can still achieve 20 to 30 percent gains in direct-labor productivity. Fewer than 5 percent of organizations around the world can really claim to have "lean" processes; the other 95 percent survive by being no worse than their competitors. Handing a process to a supplier, which probably isn't much better than its competitors and serves many companies in the same industry, confers parity, not a competitive advantage. And sometimes only proprietary products or processes distinguish a business from its competitors—one reason for Procter & Gamble's policy of investing heavily in the development of manufacturing processes as well as products, even building or designing much of its own equipment.

Every company faces different operational challenges. Nonetheless, decision makers have a basis for retaining any process that

- Can meet or beat industry performance norms within three years
- Confers a distinct competitive advantage that can't be replicated (such as wing assembly for Airbus)
- Isn't available in the supply base or likely to become so anytime soon
- Defines the company, as manufacturing does for commodity producers

Considerations that argue against retention, as a purely practical matter, may be a workforce that resists change and a managerial team that doesn't know how to lead it—perhaps because the managers are wedded to processes that offer little clear value to customers.

Consider the example of Toyota, which developed game-changing value in the auto industry by improving internal operations through lean production techniques and the development of innovative manufacturing processes. It then developed businesses run on the same principles in new markets (houses, boats, and aircraft). As a result, Toyota has higher returns on invested capital, operating profits, quality ratings, and price-to-earnings ratios than the Big Three US automakers. It has chosen to retain ownership of processes (such as stamping, welding, and injection molding) that affect the vaunted "fit and finish" of its cars, though some of these processes could be undertaken more cheaply elsewhere. It outsources the less visible components of its cars but maintains strict quality control and pushes suppliers to match its operational efficiency.

Few companies can equal Toyota's manufacturing prowess, but many can dramatically improve their internal operations. Alcoa, for example, rolled out an adaptation of Toyota's production system. Within five years, Alcoa had improved operations so greatly that it could produce aluminum in small batches of variable size on short notice—a capability opening up a whole new market of small to midsize customers that its competitors can't service.

Alcoa thereby eased the cyclical profit performance that aluminum prices had imposed on the company for years.

Gauging external capabilities

The balance begins to swing toward "buy" when the supply base offers

- Dramatic cost savings from cheaper labor and procurement, lower capitalintensiveness, and bigger scale
- A location, process technology, or skill set that would be hard to acquire or reproduce
- Greater productive capacity and a more diverse end-user base, which help to cut down on supply surpluses and shortages
- Shareable expertise that a specialist has acquired in other markets or industries

An assessment of the specific skill sets, capabilities, and cost structures of the supply base should also identify emerging players, spotlight regulations reshaping the industry's structure, reveal capabilities that vendors are developing, and show how competitors have reconfigured their value chains in response to these conditions.

Next comes a request-for-quote process in which an organization identifies the strongest candidates

to undertake outsourcing by virtue of their design skills, efficiency, and inventiveness, as well as the ability to sustain those qualities, among others. At the same time, the process must not overlook the possible drawbacks of the various bidders—drawbacks that might include longer lead times and convoluted distribution channels.

Determining the mix

With a clear picture of the costs and capabilities of internal and external providers, managers can begin to rebuild their supplier network. Market conditions, technological developments, and strategic considerations will also influence the selection of suppliers. The process usually leads managers to solutions both inside and outside the organization. Integrating these solutions is essential. Sony, for instance, has eliminated 11 of its 70 plants, plans to cut 4 more by 2003, and now outsources its original PlayStation to companies in China. Newly created manufacturing subsidiaries will oversee its remaining facilities, where novel, strategically important products such as its PlayStation 2 will be made. Sony expects this strategy to bring its current 5.5 percent return on equity closer to the 15 percent and more achieved by US technology competitors.⁹

Capturing value through relationships

Don't assume that it is easier to manage suppliers than to improve your company's internal performance. The money, capabilities, and effort needed

Don't assume that it is easier to manage suppliers than to improve your company's own performance

to develop and direct a new supplier network are considerable. It is necessary, for example, to define explicit objectives for suppliers, such as delivery times and cost reductions, and to incorporate those objectives in contracts that reward suppliers

for meeting or surpassing them. Supplier-management practices (such as ways of resolving problems) and vendor performance metrics must be developed. People have to be trained to use technologies such as the Internet to reduce the cost of transacting business with suppliers—by, for example, managing their performance in real time. Employees capable of understanding their industry's trends and technical advances and of applying their manufacturing know-how to supplier-management and purchasing operations need to be retained. And cross-company teams ought to be developed to facilitate the sharing of best practices with suppliers.

Corporate strategy begets manufacturing strategy

Every few years, the managers of the world get religion. Today, most of them believe in outsourcing. But if they are to serve their organizations well, they must temper faith with reason. The leap from "make" to "buy" requires a clear strategy and a factual assessment of a company's strengths, weaknesses, and objectives.

When IBM spun off much of its hardware and components manufacturing,¹⁰ in the mid-1990s, it showed how the reconfiguration of a company's manufacturing strategy can advance an overall strategic shift. Only after IBM had

⁹Peter Landers, "Foreign aid: Why some Sony gear is made in Japan—by another company," *Wall Street Journal*, June 14, 2001.

¹⁰Including the Lexmark International computer peripherals business and the facility that would later blossom into the \$10 billion electronics manufacturing-services firm Celestica.

redefined its core—e-business services and solutions, research and design, and semiconductor architecture and manufacturing—did it reconstruct its supply chain, thus creating, in the end, a different company. Ownership of computer hardware and components manufacturing is essentially nil at today's IBM, but the company's financial performance has soared—from losses of \$8.1 billion in 1993 to net income of \$8.09 billion in 2000. The return on invested capital rose similarly, from –5.7 percent in 1993 to 15.3 percent in 2000.

IBM's leaders couldn't have known, in 1994, how its future would unfold. But they had an idea of what they wanted, and they divested the company's manufacturing assets with those goals in mind. That is what it takes not just to outsource effectively but also to outperform competitors. Companies that blindly follow the herd never give themselves a chance to do so. M_{O}

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