partment or functional lines. American Express now focuses on college seniors, corporate users, etc., not green, gold, or platinum cards.

The approach also requires information—both before, in selection, and after, in implementation. The firms do believe that what gets measured gets managed. Accounting systems have to become more flexible, but, strangely enough, Hewlett-Packard and others have shown that customers will cooperate in supplying information themselves into a supplier system, if they feel that information will be used to their benefit. The lines between maker and user are becoming blurred, often because of the imperative for information.

Much of the article speaks to issues of direct customer service—order processing and the like. But two new product dimensions were made clear. First, if the firm commits to selling the customer the right product (the most direct and successful way to satisfaction) then they must have the right product to sell. There is no question about customer involvement in the new products process—the whole operation leads to new products that customers will buy, happily and at higher value prices.

The several programs that report on service calls, product breakdowns, modes of customer use on various products, etc., all contain the essence of problem- or needs-based product innovation. Product strategists and developers have in-depth information on customer needs no further away than the keyboard of a company computer.

Lastly, management means motivation, and several companies told how they are changing their salesperson reward system away from number of sales calls (or a variant) to the profits from a group of customers. The entire multifunctional team for that customer group is rewarded that way. Salespeople's reaction to the firm's new products will change, under those circumstances.

Patents: A Managerial Perspective, Tim Hufker and Frank Alpert, *Journal of Product and Brand Management* (Volume 3, Number 2, 1994), pp. 33–54 (GPL)

This is a patent primer, and persons lacking an understanding of patent basics might benefit from reading it. Experienced new products people will recognize the three requirements for patent (novelty, nonobviousness, and utility), the different types of patents, and the general procedure for securing patents.

The authors also suggest several patent management strategies.

1. *Licensing:* Because a patent is personal property, it may be bought and sold, or the patent rights may be licensed without selling the patent outright.
2. *Accumulating related patents:* If a patent protects a new product that threatens an existing product, a company may wish to buy the rights to the patent, even if there is no intent to market the new product. This strategy involves searching patent files for all patents related to the company's major product lines and negotiating licensing arrangements and assignments with the owners of such patents. One caveat: this may be found to be anticompetitive behavior in violation of the Sherman Act.
3. *Cross-licensing:* This entails sharing patents with competitors in return for the same treatment, permitting standardization and quicker diffusion of innovation. A potential antitrust problem arises when extensive cross-licensing ("patent pooling") excludes newcomers from an industry.
4. *Bibliometrics:* This is a form of statistical analysis used to scan patents and scientific papers to figure out which ones are most important. The strategy is practiced by most technology-driven firms.
5. *Benchmarking:* This is the strategy of designing around another firm's patents by reverse engineering (also called benchmarking) to a full understanding of the patented product.
6. *Patenting improvements and processes:* A defensive strategy is to conceptualize in advance the possible improvements or modifications that competitors can make to a firm's upcoming new item, and patent them. This forecloses competitive leapfrog options.

There are also some recommendations about marketing strategies designed to maximize the profits from patents. First, patents usually allow the producer to demand a premium price, but this gives incentive to competitors to design around the patent, to rush to market a competitive product, or to infringe on the patent at the risk of facing penalties or fines. Monopoly pricing also heightens the chances of a patent challenge in court.

Because there is no such thing as an international patent (they are obtained individually in each country), patent rights should be so sought. Some countries require that a patented product be "worked" in the resident country, by manufacture or importation.

Patent value is often enhanced by promotion. Including explicit references to a patent or to a product's uniqueness may be beneficial ("the one and only," "state of the art," or "patented new process").

A Second Look at Japanese Product Development,
Rajan R. Kamath and Jeffrey K. Liker, *Harvard Business Review* (November-December 1994), pp. 154–170

This is a research report on manufacturer-supplier relationships in new product efforts. The authors found differences between Japanese firms and their non-Japanese counterparts, differences that are critical to good partnerships and determinant of new product overall process design.

Most importantly, the research revealed a widespread misunderstanding of manufacturer-supplier relationships in Japan. The impression is that there are few suppliers, and that each is intimately involved in the manufacturing process. In fact, there are four relationships, and only the top one fits the stereotype. No manufacturer could have only close relationships, and no supplier could either. Moreover, suppliers do not work on freeflowing teams to develop new products. Even the closest ones have specific targets they are to meet (product, volume, and time). All key issues are resolved early, and some twenty-seven months before launch, tasks are certain. (We have heard that specifications are frozen, but there is much more to this relationship than that.)

The Japanese use four roles, not one. The first, called partner is the publicized role. It is reserved for suppliers with great technological capabilities, sophisticated management, and global reach. The two firms have a relationship between equals, the supplier tends to take an extra subsystem and is involved from the very beginning (probably from well before that, because partnering is reserved for suppliers who have had previous relationships). An example is Nippondenso, formerly a unit within Toyota, and now a large independent supplier with advanced R&D capabilities.

The second role is just a little less than partner, and is called mature. There is still a major assignment, but there is more guidance from the customer. The customer provides specifications, but the supplier has design freedom in meeting them. An example is Hirotec, which makes, among other things, stamped door panels for Mazda. Mazda provides CAD data on the surface, Hirotec designs the internal supporting beams, manufactures the panels, and sends them to the assem-

bly plant. They had better work when they get there, so Hirotec has a role in product testing.

The third role is *child*. Here there is less technology input from the supplier; a door panel would already be designed when the specifications arrived. The supplier works out the design details, and designs and builds the prototypes. Many of these products are not changed very often (a gearshift lever, for example).

The fourth role is that of *contractual*, and the difference is just one more step down the line—the item is a commodity, contractual suppliers are strictly manufacturers (often only to supplement internal manufacturing capability).

A key element in all of this is the system used by Japanese manufacturers of complex assembly products such as automobiles. Their product development system is simple, even on one page. The charts capture a high-level view and include clearly tagged milestones that begin several years before production. This contrasts with extensive staged-process systems, running to hundreds of pages, used by most US and other non-Japanese firms. A good example is the prototype. The Japanese want working prototypes, models that can be approved for go. Such targets are critical, and suppliers will put out huge efforts to meet them. They know what such a target means, and what is expected of them to meet it. The system is thus a pulled system, pulled by explicit customer requirements.

The higher the role of a supplier, the more the opportunity to affect the prototype requirements, and the greater the opportunity to make changes down the line (given that there will be no disruption to other targets).

Chrysler is an example of a non-Japanese firm that has adopted this system of target controls rather than activity schedules. What a target should be and when done is the control, not what activities suppliers undertake to do the job.

Creating High-Performance Teams, Michael F. Wolff, *Research Technology Management* (November-December 1993), pp. 10–12 This article is the result of a discussion session of twelve human resource directors from firms with successful teamwork experience.

The discussion ended up with five prerequisites for high performance teams, the first of which is that a larger firm must face some strong business pressure—something that mandates the type of change a major team activity entails. Second, there must be someone who spots this need for change and can convince oth-