

interproduct involvement by research personnel. Fourth, *product adaptability analysis should be conducted for services too.*

3M's Sophisticated Formula for Teamwork, Michael K. Allio, *Planning Forum* (November-December 1993), pp. 19-21

At a recent Planning Forum Conference, a presentation on the use of empowered teams was made by two managers from 3M: Robert Hershock, a group vice president and David L. Braun, corporate scientist. They reported on what happened in the establishment of a high-speed new product team to develop a new gas/vapor/particle personal filtering mask and develop the appropriate process for their team and other teams to follow. Their story contained much that is widely known about the creation and management of new product teams, but several of their ideas may be surprising to some readers.

1. They used the phrase "bosses were to become leaders." It was not explained, but it suggests that leadership has a subtle meaning that extends beyond or within bossing.
2. They stressed that the team needs a charter. Mission is the term more commonly used, but charter has a demanding directional dimension. Among other things, the charter gives goals and objectives and lays out parameters within which the team has the freedom to operate. For example, they suspend some normal checks and balances, such as when they allowed this team to order a press from Austria, on their own, and with air shipment.
3. They said that the team should be interdisciplinary, but not necessarily cross-functional. Advisors are called in when necessary; not every area needs to be on the team.
4. A phrase "hierarchies are *suspended*" suggests an interesting way of telling functional managers how they will relate to the new team. This is especially critical at 3M because their teams are part-time assignments, not dedicated.
5. Facilitation was stressed as perhaps the central function of the team leader.
6. A sponsor was "established" and "assigned" to the team. Often thought to be a function of the team leader to find such a higher-level supporter, 3M thinks it is so important they see that one is provided.
7. A three-day team-participation training session was held.

8. The team was allowed to spell out when senior management would intervene.
9. They think that teams go through a three-phase life cycle. The first phase is the transitional phase, when teams "suffer from divisions of loyalty." When dedication occurs, they enter the operating phase where most of the work is done. The team may enter a final critical phase, if conditions get so tough that the team players create auto-networks, small groups who must handle tough issues on a zero-time basis. During a critical phase team members may be put full-time on the task, via "grace periods" for their regular assignments.
10. Team members are asked to set their own rewards, even straight money, and decide who participates. One team asked that all of the important players be permitted to attend the official product launch in Germany.
11. Groups are disbanded "after they have met their objectives." But, this is unclear because the subject team was told the item was to be a \$10 million business in five years. Yet the inference was given that they were disbanded well before that time. (The new product exceeded this goal.)
12. The 3M managers "recommend that objective, outside consultants review the team's performance to understand its effectiveness and to gather lessons about the process."

Is National Design Dead?, Marilyn Stern, *Across the Board* (September 1993), pp. 32-37

The industrial designer is a key player on the product development team. Given that new product focus today is rapidly becoming transnational, or global, the question naturally arises: will design also become global? The answer varies—some say it already has, some say it is rapidly becoming so, some say no it just appears so, some say it may but should not, and some say it never will. Take your pick.

A group of top designers recently looked at twelve new products, and their average score was 16% correct national identification. This has especially happened in the industrial and business world, less so in fashion, textiles, and tableware.

Building blocks of style (where national "looks" appear) are being used in multicultural stews, or bouillabaisse. The Swatch watch, for example. Corporations are becoming globalized—production is being scattered all over the world, media are becoming more

mass, and everything is more mobile, including designers themselves. Major design studios have offices in various countries, with various country nationals in all offices. The author cites an example of a "British designer, working in the United States, designing a product for a Japanese client, to be produced in Taiwan, and marketed to a fifth country or more." What national design would one expect from that? Motorola's MicroTAC cellular phone is made in more than 200 versions for use around the world.

Today's designers must be chameleons, designing for any idiom. Of course, as they do it, they may be in fact be *using* national idioms. German design, for example is still thought of as solid and timeless. The French go for luxury and the bizarre. The Japanese lightness and miniaturization. And, there is still much national influence on design through function, if no longer form. One designer is quoted as attributing the fax creation in Japan to their difficulties in copying *kanji* ideograms.

There are objections to these conclusions, however. One designer said that we are confusing national with corporate, that much of what we see as national design is really that of a leading firm—e.g. Braun's work in Europe. Another said so called national designs are really local designs, within countries. Those still exist. Still another said that designers are artists, and that their inspirations come from everyday life—life practices that must reflect local cultures. He complains that we are urging biological diversity but design uniformity.

Lastly, an Italian designer said design, like language, is genetic and irrepressible; even though two thousand years from now there may be a universal language (such as English) he and most Italians will still be speaking Italian. The article seems to suggest that global design may be able to coexist with local or national designs, as languages are doing now.

How Bell Labs Creates Star Performers, Robert Kelley and Janet Caplan, *Harvard Business Review* (July-August 1993), pp. 128-139

This article concerns all types of knowledge workers, but their heavy role in product innovation warrants our attention. Too, the case used in the article is a Bell Labs engineering group. The article describes the firm's problem, the approach taken by the authors, and their findings and results.

It is well accepted that knowledge workers pose special problems for their managers. Their productiv-

ity is key to corporate success, but they already work hard and resist exhortations. They have options, including holding back on output, and studies show eight-to-one differences in productivity. Productivity has been thought to be primarily a product of innate differences, cognitive and social traits that are difficult to change.

Now it appears that cognitive skills are a necessary, but not sufficient, condition. Other factors are also necessary, and they *can* be improved by training. The authors tell how they tried the customary method for identifying the stars and for identifying how the stars differ from average workers. It did not work. Their conclusion: find those workers who are on management's star list *and* on peer group star lists (there's less than a 50% agreement between the two lists). Frequently, in the knowledge field, peers know more about what their colleagues do, who actually helped others, who pushed something along when it was idle, and so on.

Critical in all this is the fact that knowledge workers often work in groups, on teams. It's not surprising then that they identified cognitive skills (technical and other) as key, but also identified *work strategies* as the other part. Nine such strategies were identified, in this order of importance: taking initiative, networking, leadership, perspective, followership, teamwork effectiveness, self-management, organizational savvy, and show-and-tell (primarily making presentations). Taking initiative and networking turned out to be the key factors that were trainable, and on which even the experts said they were often confused and needed training.

The authors developed checklists of actions in each of the non-noncognitive areas, and selected some of the experts to help develop and then participate in a series of pilot training programs. In later programs (eventually covering more than 600 of the 5000 engineers) these experts became the facilitators and eventually the faculty. Results are cited in the article, including data for women and minorities, and the productivity increases are very significant. Productivity was continuing to grow a year after training, probably because the training focused on specific actions that could be identified and altered.

Several aspects indicate the flavor of the training. One is timing, the idea that networks must be created ahead of need, and they must be carefully cultivated by the individual's "contributions" early on and continuing. Average workers tend to try setting up a network when they meet a need for one, but such entreaties bring no answers to calls and e-mail messages. So the