

## INDUSTRY OBSERVATION

**Refocusing Training Dollars for Higher Manufacturing Leverage**

The past decade we've seen a major shift in the approaches high-technology companies take toward employee development. The semiconductor industry, being relatively new, has evolved as an industry with a very vigorous thrust in this area.

U.S. industry as a whole spends about \$30 billion a year on training. This level of commitment is commendable. However, the breakdown of how industry spends this money deserves some serious reconsideration.

Management and administrative training absorbs most of the time and money spent. Do we really believe this money has resulted in a finely honed management of businesses in the USA?

Often we require operators on the factory floor, today, to do more than perform a repetitious job. We may require them to operate networks of automated equipment, troubleshoot machine failures, track the processes from a statistical standpoint and make critical decisions on a daily basis. Yet industry spends twice the money for management training than for operator training. We need much more attention placed into technical training of the entire workforce.

High-technology management in the USA appears to overlook the need for managers to maintain up-to-date technical competence. The usual argument is that their job is to manage, not hands-on work. While there is some truth to this, I see a problem with the model.

Our competition in Japan and Germany, for example, expects managers to be the technical equal or superior to their employees. This engenders a level of respect based on a person's abilities and not on the power of their position.

Consider this: Soichiro Honda, founder of Honda Motors, heard that an engineering group was stuck on an important technical problem. He put on a blue lab coat and spent several days working as an equal with the engineers to solve the problem.

Managers short on technical competency are typically not as effective in guiding or supporting the training paths of their employees. Again, I refer to foreign competition: Technical employees in Japan, and most Asian countries, consider their ongoing technical training a key barometer of their company's



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commitment to them. In Japan an employee may have a five- or ten-year career path, complete with training opportunities.

I have seen several occasions in the USA where talented Asian engineers resigned and politely stated that they simply wished a change. The fact was their training had been neglected and they knew obsolescence was around the corner unless they quickly obtained the latest technical knowledge.

In general upper management appears to be much more enthusiastic about training that involves communication skills and organizational development than it does about the less glamorous technical side of training. I believe this is because they tend to be preoccupied with organizational and communication issues in their own jobs.

Most companies position the manager of technical training, if they have one, somewhere down the line under a Human Resource function. This is a mistake because although "training" seems

to indicate sameness, the issues and concerns between technical and non-technical training are not really all that similar. Technical training should function at a high level within any operations group. The technical training manager should be able to influence upper management.

The new concepts of factory floor employees being multiskilled team members with greater decision-making authority places a greater burden on them and increases the company's reliance on their performance. Thus, training priorities should be somewhere near the top of the resource-allocation list. I have seen many instances where thorough, organized, detailed technical training yielded significant improvement in manufacturing performance.

The 1990s will be a decade of integrated multimedia-based training. Imaging technologies are finally beginning to realize their potential. Intel's Digital Video Interactive (DVI), for example, can capture, compress and decompress digital full motion video and audio with a personal computer.

With such revolutionary new technologies available, it magnifies the caution about emphasizing the wrong kinds of training. Corporate trainers tend to use the classroom education model. This could be a mistake that becomes significantly more costly if multimedia becomes used that way.

High-technology multimedia workstations should not be wasted on classroom type training. Neither should they be used for teaching subjects such as communication skills and use of policy handbooks. Tremendous opportunities exist as this new technology floods our training departments. The primary opportunity will be to focus on delivering technical skills and training rather than succumbing to the easy path — making it a glitzy entertainment tool to impress more management trainees.

Top level managers and executives must roll up their sleeves and get involved in refocusing training dollars to technical areas. Technical training strategies must be designed by technical training experts and not human resource generalists. This will require involvement and follow-through by senior management to ensure the effort is on track and sustained. □