Work Teams That Work

Using classic HRD tools, a line manager built a textbook organization. And it works.

By PATRICIA GALAGAN

"It's about simplicity," insists Bruce Dillingham, the Digital manager who built from scratch a manufacturing plant dedicated in equal parts to a profitable product and to the autonomy of the workers who produce it.

The visible product at Digital's Enfield, Connecticut, plant is an electronic module that goes into one of the company's computers. The intangible product is an HRD technology that Dillingham and others at Digital would like to see more managers use. After five years spent developing the Enfield plant and serving as its manager, Dillingham has just fulfilled his own succession plan and stepped out. Digital will now market his skills in the development of self-managed organizations.

Back in 1981, starting with only his vision of a plant that could tap its employees' full potential, Dillingham spent months convincing the right people that his ideas would work. "I'd been running a Digital plant in Canada," he explains. "Running a plant, you see lots of things that could be done differently; things that are done a certain way only because that's the way it's always been. You see people with good ideas who can't make any headway because somehow the bureaucracy just doesn't allow anything new to happen."

Dillingham had spent 15 years at Digital before he got permission to try his experiment. He came up through the ranks, starting as a technician. After time spent as a field service engineer for the company's computer lines, he had a series of management and supervisory positions in manufacturing. "We're a technology company, and the way to solve problems has always been to put in more automation. In applying technology all the time we forget the people. That's what triggered me. All that potential in the people."

Dillingham, big and bearded with an eagle tattooed on his left forearm, seems a bearlike presence in a company full of sleeker animals. He speaks the language of OD, and it took him a long time to line up the management support necessary to do Enfield. "My vice president was very supportive. He gave me the space, and he trusted and believed. He allowed it to happen. Any project like this needs someone to protect and shield it."

First Dillingham hired 15 people who shared his essential vision of an autonomously run plant. With a model and some theories borrowed from one of Digital's OD people, they figured out they couldn't start up the plant in the six months allotted to them. "I had to go back to my boss and ask to delay production for another six months. Essentially I was asking to build a plant and not produce anything in it for a whole year. I had to do quite a bit of talking."

The vision

"I wrote down a set of visions of what I really wanted to accomplish. One part of it was to have people be responsible for more than just making the product. Another was to tap the full potential of the people who would work there. I thought that automation should be limited to where it was needed and that information systems should tell you only what you needed to know. The vision included the idea of not having any stockrooms or any inspection of the parts we would buy. We would trust the vendors. We would never ship a bad product, and we would build a perfect product the first time. In the manufacturing department we would never raise costs."

In the selection process, Dillingham started by explaining his vision. He admitted not knowing how to make it happen and hired people who were comfortable with the prospect of inventing the plant from the ground up. One by one, he assembled a team of people who shared his vision.

"I started by hiring the traditional people you have in a plant—a materials manager, a production manager, a finance manager. Luckily they were secure in what they had done. They didn't need to prove themselves in a particular job, and they weren't threatened by the fact that things would change as we got into the vision."

About 70 percent of this group came from within Digital. Dillingham characterizes them as inquisitive people. "They wanted to know how things happen rather than just doing them. We didn't use any scientific method for our selection. We just talked to them about what we believed in and saw how they reacted. We wanted them to understand that they would be doing the same kind of work they'd done before, but they could influence how they did it." Members of the start-up team were hired with the expectation that they would help design systems in their particular disciplines, but that they wouldn't be needed forever. "Traditionally you put people like this in a hierarchy and keep them around. But we didn't need them all over the long haul, and it was a trick bringing people to Enfield for a year and then making it okay to leave."

The selection process had a built-in bonus: people who didn't like what was being described selected themselves out.

Up and running

It took a year to get ready to make the first product, much too long in Dillingham's estimation. "People were so deeply into design mode that they got out of manufacturing mode."

The plant opened in 1981. Dillingham was at the top with six managers below him and everyone else in the third remaining rung of a very flat organization. "Not many places have a three-level structure. It's right for open communication and visibility, but it's a hard structure for a start-up operation." The managers had to develop work teams at the same time they

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were stepping into a plant management role. It took a lot of integration.

The plant ran well at first, but then things began to erode. "We had done a good job designing things for where we wanted to be in five years, but we didn't pay enough attention to where we were in the present. We had designed our system in such a way that teams of people would be building a total product and would know all aspects of its production. We expected them to perform well in their specialty and also to do support work, materials handling, purchasing, interviewing, quality inspections, and hiring. On top of that we asked them to design their own pay system.

"Our expectations were just too high. There was a tremendous training need that we hadn't foreseen. The knowledge wasn't in people's heads to support the vision. We learned the hard way how to bridge the gap and ended up keeping support people in the plant a lot longer than we'd planned."

The teams

The work teams include 12 to 18 people, though Dillingham believes the optimum size is 14 or 15. By design the teams are a mixture of ages, races, and backgrounds. There are roughly equal numbers of men and women.

"We wanted a multicultural organization, so we hired accordingly. We wanted to benefit from a lot of different viewpoints."

All team members should know how to receive materials, how to build the product, how to set up and maintain the

learn how it functions. It started as a self-study course of about 80 hours that included reading, interviews, and exercises. Now we hire whole teams at once and put them through the assimilation process as a group." The idea for this came from one of the teams that elected to stay together for its initial training. It takes about 13 weeks for a new employee to become proficient at manufacturing the product and understanding the culture. A condition of employment is to be certified on the floor as having the skill to produce the entire product on time. From that point, an individual's growth is self-determined, but there is a strong push from the Enfield reward system.

The reward system

Developed by the employees, the reward system at Enfield recognizes not only the need to earn more money, but the need to have more responsibility or to know more about what's going on in the plant. It rewards teamwork as well as the individual acquisition of skills, and it allows growth within the plant's flat structure. "As we designed the pay system we realized that it's not just a question of how you pay people but of how the plant itself learns and grows. How do you capture the knowledge in other people's heads and put it into a form that other people can learn consistently? How do you test for that?"

Raises at Enfield are based on the demonstration of skills and knowledge accumulated. There are a series of computer-based tests that the employee elects to take. The test shows, in video for-

basic set of skills to be learned. "I don't think there needs to be a ceiling. You're giving people knowledge they will use to make the business more productive, so you can afford to give them plenty of higher skills." Dillingham maintains that people will select their own level of development or their ability will select for them.

Managing the culture

If the teams and their managers are autonomous, what is the role of the plant manager? After developing a vision of the plant and convincing people to support it, Dillingham's job became that of managing the culture. He had to manage the values that the whole group had developed and make them visible.

Among the values that evolved at Enfield were trust, openness, and a willingness to share information. "You had to be willing to share what you knew with people at levels other than your own. We valued the idea of allowing people to develop whatever talent they had regardless of the position they held. As the plant manager, you have to be a role model. If you make mistakes, people have to be able to call you on them because we set that as a norm."

Dillingham also spent a lot of time doing what he calls "managing the boundaries." A project like Enfield, because it was different from the rest of Digital, needed protection. "I looked at the larger environment and what was expected of us, and I shielded us. Eventually we reached a point where it was safe to open our concepts to others, and the walls we had built got in the way. We thought we had the greatest thing since sliced bread, but of course no one wanted to hear that. We had to learn how to talk about it."

Talking about it involved speaking the language of the potential adversary. Enfield people learned to liken their efforts to a set of components and integrated circuits that serve different purposes in a computer depending on how they're used. "Once we began to talk about it this way, people were more receptive to our ideas as new ways of doing things."

Lonely at times, Dillingham looked for support among his peers at other companies trying out high-performance work teams (GE, GM, Frito-Lay, Pepsi-Cola).

"I learned that just results were not enough. I had thought that if the numbers were good—and they were—that would make everyone want to run with the same thing tomorrow. But that's not true. It all depends on the culture of the company."

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automated equipment, how to test the finished product and fix it if necessary, and how to put it in a box and ship it. Some team members have higher level skills or special expertise not needed by everyone on the team, but the team decides what skills it needs as a team.

There is an organization development person in the plant as a resource to the teams, but they decide when they need further development. Team members are responsible for arranging for their own training and development, and a number of computer-assisted systems are available for self-directed training. People can use these tools at their own pace.

"At first we put everyone through an assimilation process that allowed them to understand the values at the plant and to

mat, what skills one must have to be competent. Teams sort out what skills members need to make sure people grow in the right dimension to meet the team's needs. Not every team member, for example, needs to be an expert in repair. Dillingham notes that it took a lot longer than expected to design the pay system. "Our system of skills to be learned has four or five levels, and only the first one is designed and operating. For higher-order skills, there are some electives and some prerequisites. You might elect something that interests you personally, or your team might steer your selection."

Enfield hopes to avoid the quick topping-out that often takes place in skill-based pay systems by allowing room for growth into other dimensions beyond the

What Makes Work Teams Succeed?

Work teams came to this country from the English coal mines and, for the most part, have not transplanted well. Quality circles, imported from Japan, are still only tenuously grafted onto American business methods. The failure of these and other participative movements to catch on widely in this country has little to do with results. When quality circles and autonomous work groups work, they show impressive results. Why, then, is there so much resistance to the notion of letting employees work smarter?

Experts such as Raymond E. Miles, dean of the University of California's business school at Berkeley, believe that "the problem with participative management is that it works."

General Electric has initiated almost 90 work teams in the past 20 years. Though the teams made productivity gains in nearly all instances, most have disappeared or dwindled. A survey of former team members found that they did not want to see the teams end but believed that general foremen, top management, and non-team members did. "The most important condition for the success of work teams," says management consultant Billie Alban, "is that the management above the plant understands and buys into the philosophy and values that are involved."

In addition, she points out, top management must demonstrate its commitment to a number of difficult changes: in work design, in organizational structure, and in information and measurement systems, to name just a few. There must be a reward system that recognizes team effort and values people's input to the team, and there must be performance appraisal of the team as a team.

It is the complexity and difficulty of achieving such changes that sink most work teams. Among the survivors, most started from scratch at new sites like Digital's Enfield plant or Exxon's Venetia refinery. TRW and Proctor and Gamble have also had success with work teams at new plant sites.

Bill Byham, whose firm Development Dimensions International trains managers and others in participative skills, believes that work teams offer their members a strong psychological incentive to participate and benefit from the energy of group process techniques. But his chief condition for success is plenty of training for the workers and their supervisors. In a work team setting, both groups need particular skills. Workers may need training in taking initiative while supervisors need to learn nonmanagement leadership.

Wilson Learning Corporation recently surveyed 20 companies on the design of high performance work teams. Vice president for curriculum development, Steve Buchholtz, summarizes the following ingredients for success:

■ authentic participation;
■ wide scope of activities (many problems to solve or many solutions to deal with);
■ ideas consistent with organization's culture;
■ perception of trust;
■ rewards for participants spelled out clearly.

For Steve Cohen, CEO of Wilson Learning's Interactive Technology Group, the key to success is empowerment. "Participative management only works if individuals are empowered to make decisions, to contribute, and to act without the encumbrance of an organizational structure that prevents risk-taking."

Who's got the numbers?

From a certain cost accounting perspective, Enfield was very successful. It started operation with half the number of people ordinarily needed to produce its kind of product. Though the number of people has grown as the work has changed, the plant still gets along with fewer people than the average.

"In a system like ours you don't need people to make linkages between disciplines because there are no boundaries. To get a meaningful metric, we look at the productivity of the whole plant. We moved away from all those narrow little cuts that companies usually make and looked at the total output per person.

"With a system like this, which makes everyone concerned about quality, you get a good product the first time. You don't need to spend a lot of time repairing things. You don't need space for expensive test equipment, and there's less rework. Awareness of quality gave us some real increases in yields. The product worked more often the first time you plugged it in. We saw a 40 percent increase in productivity, and product yields doubled.

"A real value of a system like ours is the close coupling with engineering. That was hard to measure at first, but it meant we could get our products to market quicker. We're already working with engineering on products we will be building four or five years from now. When these products come downstream into manufacturing, they will already fit the manufacturing process. We'll have the right technology ready for them."

Although technology was one of Enfield's two major strategic directions, it suffered some neglect during the heavy design phase of the plant. "Our social systems took so much energy that our technology suffered," admits Dillingham. "We didn't bring on the latest technologies as fast as we should have. Now we've learned to do it faster because of the base we built. For us, technology is a pull instead of a push."

Letting go

Dillingham prepared for his departure with a carefully executed succession plan. The management team first went through a renewal cycle, looking back over the past five years to see if the plant's visions were still valid. "Surprisingly, they still were."

As a group they wrote down their operating principles so they would be preserved. They looked at their strong and weak points and at changes in the environment—at Digital and elsewhere. Together they mapped a profile of the kind of person needed to carry the plant forward and selected one of two people in the plant they felt were qualified. It will be his responsibility to do something with the data gathered in the renewal process.

"It was clear that the plant was already on course and that in leaving I was only stepping off while it kept moving."