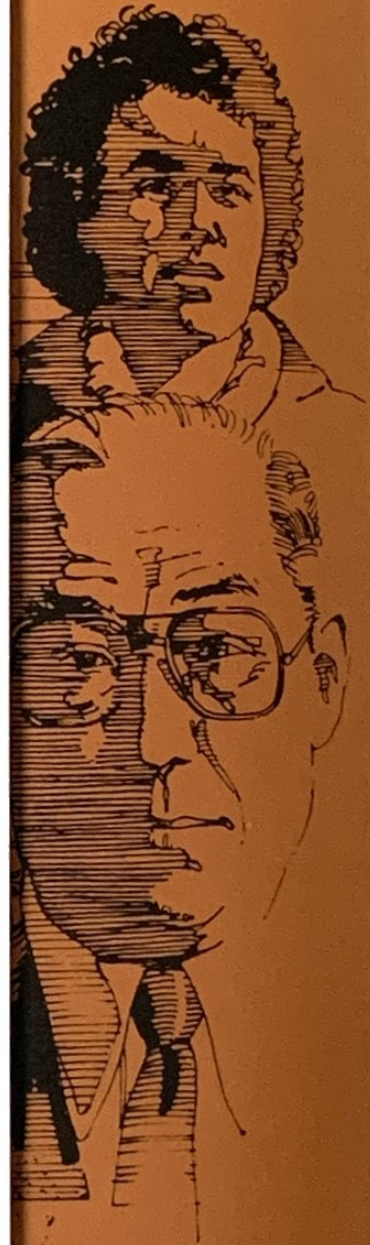
A large photograph of a sunset over the ocean. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water. The waves are rolling in, and the overall scene is serene and majestic.

*By the mystery of his intellect,
mankind has brought reliability
to machines similar to nature's
ancient rhythms of day and night
or rolling tides.*

*Do they want us?
Do they need us?*

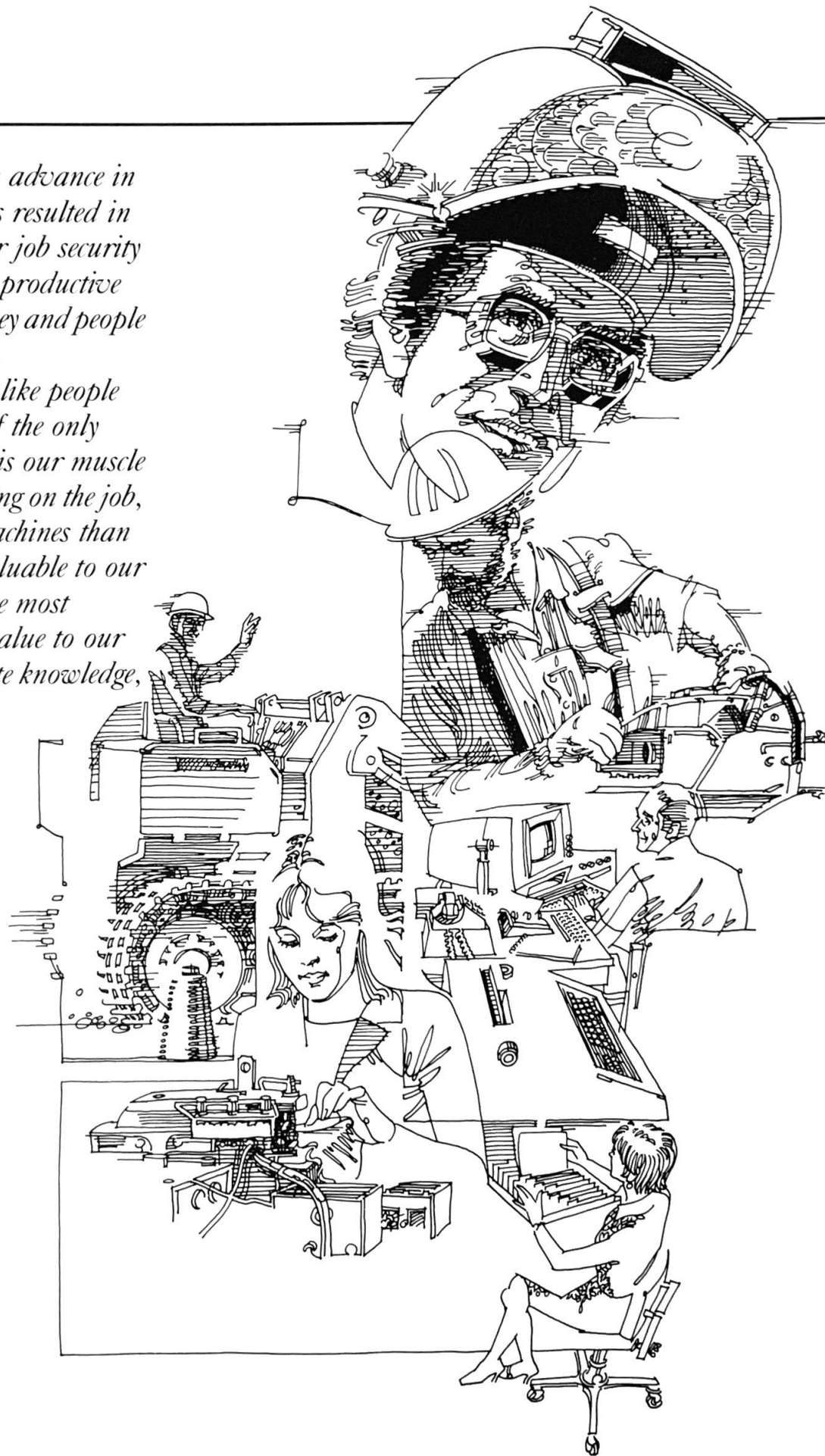


Do they want us? Do they need us?

Did you ever wonder where American industry is heading regarding the need for people who run our factories and plants? We know we have to stay competitive or else our companies will suffer losses in sales volume leading to cutbacks or layoffs or even plant closings. But to stay competitive with countries like Japan where extensive use of robotics is accepted may mean layoffs anyway. If we fight mechanization we lose because our companies will lose sales because of high cost, but if we accept these new technologies we also lose. This appears to be a dilemma, but there is another viewpoint.

Remember that every advance in technology in the past has resulted in more work, not less. Our job security rests on our ability to be productive and grow. Growth is the key and people are the ultimate resource.

But people must act like people and not like machines. If the only contribution we provide is our muscle power and routine thinking on the job, then we are more like machines than humans. We are most valuable to our company when we are the most human. When we add value to our work. When we contribute knowledge, skill and ideas.



Do they need us? Do they want us?

To make it easier to understand the uniqueness of people and how that uniqueness can be used to add value to our work, let's review those things a human being can do better than a machine:



1. The human being is sensitive to a wide variety of stimuli such as noise, verbal communications, light, color, words, symbols, roughness, smoothness, shapes, odors, sweetness and sourness. Machines simply cannot handle such variety. It is this characteristic that allows us to notice changes in our environment such as a different noise coming from a compressor that may mean some problem is developing.



Do they want us? Do they need us?

2. The human being can recognize patterns such as in time, data or events and make generalizations about them. For example, a person might see that every time we optimize yield we start to have severe corrosion problems with our refrigeration machines. A machine doesn't have this versatility.

3. A person has the ability to detect important signals even when there is a lot of surrounding noise. For example, people can detect a cry for help when a radio unit has a lot of static, and they can spot an increase in process interruptions caused by wet raw materials when the data shows several other potential problems. People have to be alert to do these things, but when they are, the machine can't compete.

4. People have the ability to store random knowledge (experience) for long periods of time and recollect it at the appropriate moment. For example, we had a plant several years ago where the process was eating up yield. Someone remembered that a filter change of different material caused the same problem four years previous. Thanks to that experience the plant was made competitive again.

5. We have the ability to exercise judgement when events cannot be completely defined. For example, at one plant someone observed that every time they had a black iron piping repair or installation in the previous six months, they had joint leaks. That someone wondered if something was wrong with the piping components. Sure enough, the black iron nipples in the storeroom were of poor quality as a result of a vendor change.

6. People are good at improvising and adopting flexible procedures. People can work within guidelines, robots need specific instructions. For example, we can go after increases in productivity by pooling ideas and yet maintaining important constraints such as quality.

7. We have the ability to react to unexpected low probability events. Machines can't do this. For example, while driving home, John heard a strange noise. It sounded like the universal joint. He slowed down and stopped at the next service station. He was right. A robot couldn't do that nor could it recognize someone turning the wrong valve. We could warn that person. The robot couldn't warn them because it can't recognize unexpected events.

8. Human beings can apply originality in solving problems. Coming up with alternate solutions is where people really shine. For example, one employee had an idea for changing the shape of the lever so that a pinch point would be eliminated. Another person had a problem with a machine's output. They put it to their quality circle group and didn't get one solution, but *got five solutions. Fantastic!* Let's see a machine top that.

9. People have the ability to profit from experience and alter a course of action. For example, overheard at a vendor's shop: "You better cradle that tank before shipping. The way you are loading it is going to result in the customer receiving a dimpled tank. I know, it happened to me before."

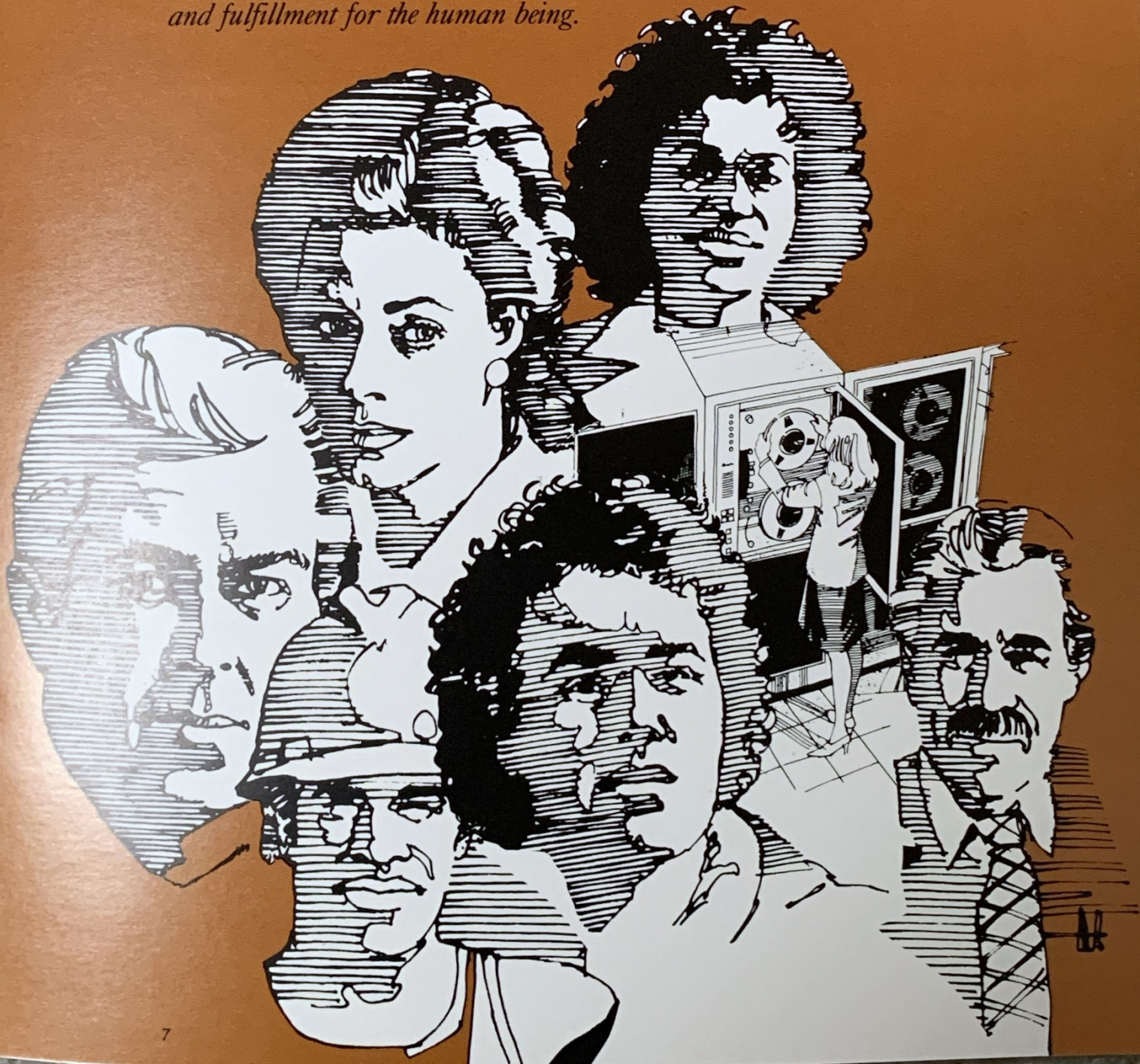
10. Only people have the ability to perform very fine manipulations where they are unexpectedly called for. For example, getting the clearances right when repairing a gearbox that fails.

11. People can continue to perform even when overloaded. This is not recommended because it can lead to accidents, but it's good to know that we have the capability in extreme emergencies to endure. (When the near miss occurred, fifteen alarms went off but Al kept his head and sorted it out in time to prevent the incident from becoming a catastrophe.)

12. We have the ability to make generalizations about information coming into the senses. This is one of the greatest potential values of the human being. (It appears to me that maintaining a temperature below 90°F allows the machine to run better.) (Vendors one and three provide components that work best but whenever vendor number two supplies us, we have trouble.)

These attributes of the human being are presented because they represent some of the characteristics that distinguish us from machines. They are our domain. The exercise of them represents the value that we can add to our jobs. When we add value to our jobs we decrease substantially the likelihood of losing our jobs to the competition.

Lest this appear an indictment of machines, let's use the machine to help us to perform the mundane work; to do the number crunching and the heavy stuff. And let it perform the routine tasks, those that lack challenge and fulfillment for the human being.



Do they want us? Do they need us?

Below are some situations that can be discussed in light of what has been presented. Each situation is a standalone piece in that additional commentary is given to superimpose on the groups after they have debated the situation. The idea is for people to use their inherent abilities on their jobs and to have fun doing it. Again, remember the human being is the ultimate resource.

Good luck!



Situation

You tell us:

You know it really irks me. Every time there is a really challenging machine problem, you know who is going to work on it. Jesse Martin or Jose Sanchez. You would think the rest of us were stupid. I guess that is exactly what they think. Well I guess I am lucky to be working; it is security for the wife and kids but I wish it wasn't such drudgery.

Question: How can Al, our mechanic in the story, enjoy his work? Is it important that he enjoy his work?

Discussion

Challenging work is a necessary ingredient for feeling good about the job and it is a form of recognition. Jesse and Jose are good at their jobs and most everybody recognizes this. Even Al didn't deny it. When the machine in the story stopped producing, the foreman put Jesse on it because he felt Jesse or Jose afforded him the least risk. They always perform. If he put Al or one of the other guys on it, they may have botched the job. No siree. The foreman is not going to leave himself open for criticism with the boss.

Given the same situation we might do the same thing. But let's evaluate the losses as well as the gains. Jose and Jesse can do the job and they'll enjoy the work. We grant you that but there are eight other people in the crew that are being turned off. These eight are not contributing value to their work because there is nothing to contribute to. The routine dull work they do is safe and lifeless. No zest, no fun. The fun in life, the real fulfillment is in facing reasonable challenges.

So let's hedge our bets. Consider assigning one of the eight to work with Jesse and Jose on two-man jobs. Eventually let them lead the team and finally pull the stars away for other exciting work. In this way everyone can share the fun and in so doing contribute their ideas to improving the plant.

Situation

You tell us:

I volunteered to be on one of those teams to help solve plant problems. Most of the others except Jenny are from other departments. A couple are from maintenance, one guy is from quality controls, Sandy Jensen is from stores and Carol, Sindela and Abe are from other production line stations including packout.

I think I made a mistake volunteering. I mean one of these girls talked about a spray gun problem and I could tell she didn't know what she was talking about. She and that guy Abe do all the talking so what's the use. I really felt uncomfortable. If it wasn't for Jenny I'd pack it in. Who needs it.

We met twice. I'll give it a couple more meetings and if I still can't get a word in edgewise, I'll give it up.

Question: What can be done to improve this group so that everyone can participate?

Discussion

What Frank, the production line operator in the story, was experiencing was probably normal given the time the group had been together.

It takes time for each member of the group to identify with the group's destiny. A kind of feeling we get when we are all heading in the same direction.

At the present time two people are trying to influence the group by monopolizing the discussion. For the group to be healthy and contribute to their fullest, members must learn that authority and influence will have to pass from person to person depending on the issue being discussed.

Eventually each member of the group will learn what to expect from the other members. Groups perform like magic when such expectations are filled.

Keep in mind that each member of the group has a particular ability or competence that they can contribute. When the members learn to respect each other's talents and expertise, the group will really be percolating.

Finally, groups learn their own magic, that is, when to collaborate with other members and when to compete. When they can do this without hurting the group's effectiveness, they will be able to reach the heights of group dynamics.

How can you tell when the above issues are resolved? Look for these signs as they are the signs of a healthy group that has powerful ability to solve problems.

1. An informal, comfortable and relaxed atmosphere.

2. Plenty of discussion with everyone participating; however, discussion is relevant to the task at hand.

3. Goals are understood and accepted.

4. People listen to each other — every idea is given a hearing.

5. Disagreements, but reasons for disagreements are examined. Attempts are made to resolve rather than suppress.

6. Most decisions are reached by consensus.

7. Criticism frequent and frank, but comfortable with little evidence of personal attack.

8. People feel free to express ideas and feelings, not only on problems, but also on how the group is working.

9. Assignments are clear and accepted.

10. Leader does not dominate — the issue is not who controls but how to get the job done.

11. Group is self-conscious about its own work (good functioning groups sense they are good and feel that people looking over their shoulder are intruding and may hurt the group — in other words they become protective of the group).

