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# **Managing Complexity:** *The Human Side*

By Richard E. Heckert

John White (project coordinator, Center for Economic Education) assigned me an enormously broad topic—"Economics, Private Enterprise, the Firm and the Market Place." The topic is so big that he felt obliged to add in a letter, "Please discuss the subject matter in any way that you think will be of interest to your audience."

That sentence gave me pause. I started thinking about what in this vast subject would be of particular interest to most students—and that led me back to thinking about what most interested me when I was a student and trying to decide what to do with my life.

One thing I didn't feel that I needed was a lot of grand philosophical advice.

The great poet T. S. Eliot understood that about young people. When a student on his way to Oxford stopped by Eliot's house and asked for a word of advice, Eliot responded, "Advice? What advice can I give you?" Then he paused for a moment and said, "Be sure to take long underwear."

What I did want to hear in college were the thoughts of people who had long experience in dealing with the complex problems of the world beyond the university.

I had learned very early in life that there are disciplines and rules that govern our activities. I had gained an early respect for religion, and for math and the physical sciences as well. I was searching for order in a complex world, and I wanted visiting speakers to give me the benefit of what they and others they worked with had learned about the human side of managing our own lives and our own institutions.

That, then, is my slightly more manageable topic: the human side of managing complexity. I emphasize the *human* side because, as you will see, I believe that training and enabling individuals to be fully productive is the key to organizational success.

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I believe that American society cannot go back to an economy that relies exclusively on small economic units. I believe that we must therefore learn to manage large institutions in ways that both increase employee satisfaction and improve productivity. And I believe that we can succeed.

Explaining why we cannot go backwards is a speech in itself. It is one that has often been made.

I am sure you have all heard about the enormous resources needed to drill for oil in the North Sea or to create and market worldwide a new product in chemistry or the biological sciences.

I am sure you have also heard of some of the disasters that overtook countries which insisted in doctrinaire fashion that small is beautiful. For instance, you can read how the havoc created by China's romance with backyard steel furnaces two decades ago lingered on long after Chairman Mao's ideologues conceded failure.

I am sure you know about our country's need to compete with the large corporations of Japan, Germany and other countries, or else face even greater unemployment problems and trade deficits.

Our need for large economic institutions is a given, one which brings with it many hard-to-answer questions, such as: Can we keep large corporations from becoming hopelessly mired in bureaucracy and red tape? Will we keep individuals from becoming cogs in these industrial machines? Should we restructure our organizations in some way?

As I prepared for those broad questions, I started thinking about the management practices and principles I have lived by during some 33 years at Du Pont, and I will be giving you some conclusions.

I should note, though, that I also sent out one of my young associates to go around the Du Pont Company and inter-

view a dozen senior managers to find out what they had learned. 13

The young associate had an interesting experience when he asked successful Du Pont managers about their practices and principles.

One manager believed strongly in participatory management, essentially group decision making, since "people who look through a single lens see a model of the world that is too brittle."

Another, equally successful, preferred a more traditional idea which he calls the "single fanny system"—namely there should be one person in charge, one person who is responsible for making things go right, one person who is culpable if they do not. This manager sees group decision making as a sign of weakness: "You form committees to cover your fanny when things are going wrong."

Conflicting answers were given throughout the interviewing process. Some successful managers argued strongly for one approach. Others contended for the opposite.

After completing the interviews, my associate told me the old Jewish story of the defendant who comes before a rabbi acting as judge and pleads his case with great passion. The rabbi tells the defendant, "You are right." Then the accuser tells his side of the story with even greater passion. When he is done, the rabbi says, "You are right too." Amazed, a bystander then tells the rabbi, "The stories are totally incompatible—how could they both be right?" To which the rabbi responds, "You also are right."

What my young associate had learned is that different Du Pont managers argue vigorously for different methods of management and most make a lot of sense in doing so.

Some Du Pont policies, such as fair treatment and respect for the individual, are quite uniform. But large corporations, like large universities and large governmental units, are not monolithic. Different managers, like different professors, have different ways of getting their messages

14 across. If there is one thing that my third of a century at Du Pont has taught me, it is that individuals—operating within a sound framework of basic policy—are more important than particular styles or methods.

No single method is automatically right, but many methods are workable if the manager who uses them knows his product, his people, and the culture of his corporation.

That may seem elementary, but if so, it is an elementary truth which hundreds of management theorists have not learned.

You can go into popular bookstores and pick up books advocating theory X, theory Y, and theory Z of management—or is it theory A (for America) and theory J (for Japan)?

You can order abstruse academic texts and read statistic-filled chapters on “competence potential and organization functioning,” “an integrative model of job satisfaction and performance,” and so on.

I'm sure that some of you are entirely familiar with this literature. Some of it is useful. Thoughtful professors such as Douglas McGregor gave considerable thought to the human side of managing complexity. But many recent works have a fundamental flaw: They treat people as numbers. They are not based on the realization that individual men and women of character can transform their environment.

There is a sense, of course, in which individuals can be shackled by their environment, particularly if they are deprived of their civil rights.

The brave members of Solidarity in Poland have, to our sorrow, learned that. So did Blacks who were enslaved in this country or, once freed, were actually beaten—or worse—when they tried to exercise their rights.

But when individuals are assured of their civil rights, all kinds of barriers can be overcome. Management can then choose the right individuals for the tough jobs and let them manage themselves

and their jobs as much as possible.

Let me review for a minute. I have brought out my two “givens.” The first is that we must learn to live with complexity, since we cannot go backward to smaller economic units. The second is that there is no single approach which works best throughout a large organization. The important thing, therefore, is to get the right people in the right jobs and let them go to work.

## II

Question: How does our society develop individuals of competence and character? Suggestion: Look at crucial formative influences in the lives of many successful individuals, such as family, church, school, college, sports and early work experiences.

I feel somewhat uncomfortable generalizing about the early influence of family and church. Some might say those areas have nothing to do with managing complex institutions such as corporations.

Yet, during all my years at Du Pont I have seen the importance of self-discipline, a sense of honesty and fairness, a willingness to listen to others, a basic respect for human beings as human beings, and some thoughtfulness about the consequences of decisions.

Those managers who have not had those qualities of character may have been successful for a while. Eventually, though, they tended to destroy themselves. Sometimes they dragged down others with them. That has not happened often, but it has happened. The management of complexity begins with the character of individuals.

Where do those qualities of character initially develop? Some of them, in one sense, are programmed into a person at conception; others, though, develop within the family at a young age, with assistance from community influences and churches. Favorable early work experience is important too.

Corporations and other complex institutions which pay no attention to the im-

portance of these formative experiences do so at their own peril. Corporations should not put such pressures on managers that they do not have time for other vital activities, such as the building of strong families and the furtherance of civic or church activities. The job of managing complexity starts with the formation of individuals who can manage.

For instance, let's just concentrate for a minute on one of the crucial aspects, early work experience.

I suspect that many of you learned quite a while ago, and at a very young age, that it's not work that makes you tired, it's frustration that comes from lack of work or lack of accomplishment. Real frustration comes when you cannot find useful work to do.

I grew up in the Ohio countryside. Others have grown up in the inner city. But there is more that unites us than separates us.

Howard is a great university. Students have to work hard to get in here and stay here. I worked hard too to get into college and stay there. I will spare you the long monologue on “when I was a boy,” but there is one experience that I think is relevant.

The experience is this: I remember working on the farm, acting in what was at first an unpleasant drama of discovery, entitled “work is hard.” I ached all over and was dead tired at the end of the first day on a new job. But after a few days my system adjusted and I got back to carousing at night again instead of going to bed at dusk. It was a great confidence builder. There was an exhilaration that I as an individual, as bad as I felt at first, could rise to the challenge and actually feel good at the end of the day.

You may ask, what does that simple farm experience have to do with the “management of complexity”? My point is this: Some might say that managing complexity means developing a “high tolerance for ambiguity” . . . or “manipulating 100 different variables” . . . or “building a holistic vision” . . . or words to

that effect. I suggest that you approach such jargon with a very critical mind.

The reason we should be skeptical about such concepts is that, to my mind, few people have ever solved a complex problem per se. Many people have solved a succession of relatively simpler problems, though. Good problem-solvers work to turn one hard problem into ten easier ones, and then methodically solve the easier ones.

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**By the year 2000, some 30 percent of the world's goods probably will be manufactured in the "Third World."**

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When a person works his way slowly but surely through the hard basic problems of the inner city, that person is learning to manage a series of tasks.

The same goes for a boy on the farm who learns that tasks which seemed impossible at the beginning of a summer are no trouble at the end. Both are gaining the experience that will someday allow them to manage a different series of tasks whose sum is complexity.

Successful management of complexity requires people with the experience of working through problems, one after the other. Confidence of that sort is something which is hard to develop in corporate mid-management training programs. It is vital for our society that jobs of the right kind be available for today's teenagers. They must learn what you and I have learned about work.

Those jobs can't be just any jobs. Jobs which teach that you get your pay whether you work hard or not are probably worse than no jobs at all. Jobs that help to build character are needed.

Developing real jobs for young people, jobs that develop character, is a key responsibility of our whole society. The private sector and government should be working together more vigorously to provide real jobs, jobs that produce something of value.

Similarly, managing complexity is im-

possible without individuals who have been trained to think through complex tasks. The training comes during both elementary and secondary school and, for many individuals, in college and graduate school.

In the U.S., more and more jobs will involve more and more employees in sequential problem-solving of a professional nature. They will not be tied to relatively simple mechanical or clerical tasks.

By the year 2000, some 30 percent of the world's goods probably will be manufactured in what are now called the "Third World" countries. These countries have some competitive advantages. Many have natural resources, and most have inexpensive labor by U.S. standards.

Quite properly, they use those competitive advantages to get on the economic ladder and start climbing. But that means increased international competition for some of this country's labor-intensive, product-related industries. That in turn accelerates the shift in this country from production to a service and information society.

In the years ahead, the continuing automation of routine tasks will see more jobs move to the "knowledge industries": computers, electronics, and other high-technology fields. We will not be able to handle these new jobs if we do not have a well-educated population. There are many non-utilitarian reasons for improving our schools and colleges, but we should not overlook this practical necessity.

With all the complaints about public schooling in recent years, I suspect that educators have found once again the right way to proceed: Concentrate on basics and make rigorous demands on students. Some institutions, such as Dunbar High in Washington, never forgot that straight and narrow path. The many schools throughout the country which did forget, though, are now reinventing the wheel. We have serious problems to face, but the fact that we have recognized them gives me cause for optimism.

The college and graduate school situation is a difficult story. Many are concerned about cuts in federal aid to higher education. We must examine recent educational budgets critically, but we must not overlook a basic principle that is at stake here. For at least 50 years in our country, we have believed that those talented enough to do rigorous intellectual work in colleges should be able to go with reasonable personal sacrifice, regardless of their financial condition. Part-time jobs, yes. Loans, yes. But such an overloading that a talented individual is unable to make progress, no.

If we move away from the principle of open-doors for ability, we are denying something basic in what America has come to mean. In the drive to bring back economic health in this country, we must make sure that we are not sacrificing the future and our nation's principles by making higher education available only to the rich. While the specific mechanisms for assuring equity are up for debate, the principle remains clear.

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### III

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Assuming that our social system produces individuals of competence and character who can handle complex tasks, how do we free those individuals from unnecessary restraints in the workplace so that they can be fully productive? Does that mean we have to govern and organize our corporations differently?

Clearly, we have to set up some ground rules for discussing this question. A large corporation has certain criteria for successful management which it is obliged to follow. It has to satisfy the expectations of not just employees but other groups as well: stockholders, customers and suppliers, the government, the media, and the public.

In that sense, the parallel some people make between a large corporation and a political, government structure breaks down very quickly.

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Clearly, we have to set up some ground rules for discussing this question. A large corporation has certain criteria for successful management which it is obliged to follow. It has to satisfy the expectations of not just employees but other groups as well: stockholders, customers and suppliers, the government, the media, and the public.

In that sense, the parallel some people make between a large corporation and a political, government structure breaks down very quickly.

A political leader is responsible to his constituency. A business leader is re-

sponsible to many constituencies.

A government *can* and *should* be run for the benefit of its citizens. A business *cannot* be run *solely* for the benefit of employees, because there are other interests at stake also.

Suggestions that corporate directors and executives should be chosen by employees, just as governmental leaders are chosen by citizens, are based on faulty logic and poor analogy. Nor is there hard evidence that boards of directors which include representatives from non-stockholder groups—the German co-determination concept, for instance—are any better off for that innovation.

In the absence of both solid logic and hard evidence, it doesn't make sense for us to transform our present method of corporate governance.

So, when I discuss ways to improve the management of complexity within firms, I am not arguing for a radical change in procedures of governance, although some improvements could undoubtedly be made.

I am arguing for a greater reliance on the individual working within the current system.

We have to start by recognizing that no two of us are alike, but no two of us are totally dissimilar. People are motivated by self-interest, but each person has to define what his own self-interest is. For instance, I like to fish and hunt, and my life will be partly governed by that self-interest. No matter what job I have, I'll find some time to fish and hunt.

Others, though, have other interests. Everyone has an ego, and everyone needs self-respect and the respect of others. That is part of the human condition which managers have to understand.

If an activity does not speak to a person's human needs, his personal needs, his *self-value* needs, he will not do a good job at it. So the job of managing complexity *within* the firm is, first of all, a task of coming to grips with diversity.

How do we do that? Essentially, we realize that to some extent diversity can-

not be managed. Diversity can overpower a manager who is too rigid. We try to make diverse talents and interests work for us, not against us.

We do that by breaking large and complex tasks into their logical parts. Then we find a person who can do the job and whose talents, interests and career development needs match it as well as possible. Then our goal is to delegate both authority and responsibility—the two have to go together—to get the job done.

Ideally, each person becomes his own manager, and supervisors have the responsibility of coordinating activities by analyzing systems and missions to make sure that we are carrying them out logically.

Even the complex job of top management becomes simpler if we proceed in this logical, sequential way. Top managers analyze all the systems of a company. They organize them into logical departments and divisions. They choose the appropriate people to manage those areas. Then they let these people make things happen.

In that connection, there are several general statements which are worth making about feasible ways to free the individual. Most of them are simple. None is earth-shaking. But my experience tells me they are sound.

There is an obvious need for what could be called "the new corporate federalism."

The Du Pont Company is famous in the management textbooks for developing a decentralized system of operation back in the 1920s. Decentralized management was adopted by many other companies as well. Often, though, there is the tendency to move away from sound decentralist principles in order to obtain more standardized procedures throughout a large corporation.

That is fine in some ways. But tradeoffs are large. The bigger and more complex some institutions necessarily become, the more we see the need for smaller units within the large structure—units which can call on all the resources of the larger

institutions, but which can retain the maneuverability of a small boat, not a battleship.

There is no single *right size* for these smaller units. The right size depends on the function and the individual involved, but it should be one in which each individual involved feels that he can have a significant impact on its operation.

There is nothing new about this concept of smallness within largeness. Aristotle wrote of the need for appropriately-sized units. But each generation has to come by itself to an understanding of this need.

Every department of Du Pont, for instance, has examined itself during the past decade with the objective of establishing smaller business units within it whenever possible. We have carved up our operations into what we call "strategic business units." There are now some 85 of these units. Each has major control over its own manufacturing and marketing but the ability to use wider corporate resources.

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***New ideas can be threatening. A big job of top management is to encourage creativity at all levels . . . .***

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Now, let me offer another point which sounds like a truism: the need for good communication. This is a significant point only when you examine the meaning of the word "communication." It comes from the same root as the word "communion." Its original meaning was not just telling, but sharing.

We have a different view of the role of managers at Du Pont now than we used to.

Oh, there is still the need for "telling." Our managers and supervisors have not abdicated. We still make sure that those individuals in charge have the combination of responsibility and authority which makes them *want* to get the job done, and allows them to require that it *be* done. But the emphasis now is on sharing knowledge, experience, and ability to



make a project work, not just telling others what to do.

Even "communication," in its properly-understood sense, is not a magic word. "Communication" is not a panacea. It has its price. The attempt to resolve different viewpoints through a sharing of ideas creates its own kind of conflicts. New ideas can be threatening. A big job of top management is to encourage creativity at all levels of the organization by making the rewards for innovation greater than the penalties for trying out an idea and failing.

In addition, sometimes too much "communication" can be as destructive to sound management as too little. People often need to and want to be left alone to work out problems. People want to manage themselves as much as possible. Different situations demand different solutions. The machine operator and his maintenance man have to talk together often. For the managers of a business venture, however, several dialogues a year with higher executives about the strategic direction of the venture may be sufficient.

Once again, the emphasis has to be on the individual. Flexibility has to be built into the system to allow individual judgment and preferences to assert themselves.

I want to stress the point of freeing the individual employee from unnecessary restraints so that he can develop a solid managerial attitude toward his work, whether he has the title of "manager" or not.

At Du Pont, we are working to reduce the number of levels of supervision. We are stressing increased delegation and greater involvement by every employee in the setting of objectives, standards and responsibilities.

The national debate over productivity during the past several years has sparked many useful proposals. But, to my mind, the most important component of productivity is not one that has surfaced very much during the debate. I would define

that component as a sense of *personal accountability for results*.

For instance, a maintenance man or woman at a Du Pont plant may want to hurry off to lunch when the clock says noon. But if a machine is down so that production is stopped, and that person says, "I can't leave until *my* machine is back on line," we have taken a big step toward improving productivity. That attitude, that "managerial perspective," is the bedrock of productivity.

The managerial attitude is that which makes the individual see his work and his product the same way a top-level manager sees them: in relation to the work of the entire business unit and the work of the whole company.

The managerial perspective can be developed by implementation of my first two points in this section: Corporate federalism and true communication. Sometimes it can be engendered at work by a talented supervisor. Essentially, though, it is very hard to create by organizational devices, although a poor organization can choke it off. The managerial attitude is present in individuals who have developed character and competence. It is very hard to develop at a later age if a person has not grown into it early on.

This goes back to my earlier stress on the importance of education and early work experience, but it is worth noting again: There is no substitute for training individuals properly and then relying on their hearts and minds, not company rule books.

If I assume that good things will happen in my company only when they are forced to by the rules I set up, then I will constantly need more and more rules. If a manager goes down that route, he spends all his time reacting to problems, instead of working to investigate and develop opportunities.

Instead of attempting to mandate a "zero-risk" atmosphere in the corporation, management should be engaging the thinking of the organization by encouraging managers to be creative, and

not satisfied with the way things are.

For the most part, fully challenged people tend to be satisfied people. Doing better work drives up not just productivity but the quality of working life as well. Many religious people believe that man is made in the image of a God who enjoys creating. Whatever your religious beliefs, I think you can see from the pattern of history that man likes to create also, and that institutional arrangements should provide the means for him to do so.

We are now coming to the final part of my presentation.

We have discussed growing up with character and competence. We have described ways to free the individual to manage complexity in the ways he sees fit. But we have not yet assessed the ways in which governments *can* aid in managing certain aspects of complexity but might *also* bite off more than they can chew.

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### ***Creating wealth for the entire society is possible only by freeing individuals to be fully productive.***

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Earlier, I alluded to Poland, and to the recent reimposition of a form of latter-day slavery on its people.

In assessing that political and economic disaster, I am reminded that the Soviet Union itself provides an object lesson in how *not* to manage complexity. The Soviets have management consultants and theorists just like we do, but they tend to arrive at some curious conclusions.

For instance, the Soviet academic Victor Afanasyev has written a book, *The Scientific Management of Society*, in which he describes the need for all economic power to be in the hands of the government so that a country can have "correct scientifically organized control of people."

"Society's development is made up, in fact, of the action of millions of people," Afanasyev writes. "That is what makes

18 controlling these activities and, through them, the whole of society with its diverse systems, such a difficult and responsible task."

As you can see, I favor the decentralized approach at Du Pont. I shirk from the task of controlling fully one company, let alone a whole country. But Afanasyev does not. In fact, he argues that one group of people *is* worthy and capable of exercising such control. "The Communist Party," Afanasyev contends, "exercises scientific control over the economic, political and spiritual life of Soviet society . . . The Party bears full responsibility for the state of the economy and directs the economic development of society."

Given the sorry state of the Soviet economy and that of its allies, it is admirable in some ways that Afanasyev and the Communist Party are willing to say, "the buck stops here."

But easy sarcasm is beside the point, and may make us miss an important point: Complexity inevitably works against highly centralized systems like those of the Soviet bloc, simply because they are too difficult to manage.

A properly-regulated private enterprise, market system may have some faults, but it has many virtues as well. Perhaps the most notable is that with it we release the energies of individual entrepreneurs.

Central planners try to make all the major decisions based on their perception of what is going on in their economies. A market system is able to manage, or at least muddle through, complex and changing circumstances without attempting to rely on a mastermind.

I am not for *laissez-faire* in the classic sense. Government is needed to provide a foundation for economic development. It is also needed to protect civil rights. One of the popular sayings of 1882 was, "Let buffalo gore buffalo, and let the pasture go to the strongest." No responsible person is suggesting that we bring back that idea in 1982.

What I would like to bring back is the distinction made in ancient Greece be-

tween two types of human economic activity: *oikonomia* and *chrematistike*.

Our word economics comes from *oikonomia*. The Greek word designated the behavior of the steward whose job was to manage the estate entrusted to him in such a way that it would continue to bear fruit and provide a living for those who lived and worked on it. The idea was to maintain productive possessions on behalf of everyone involved.

*Chrematistike*, though, meant something very different. The word was used negatively to express the cut-throat pursuit of self-enrichment at the expense of others. Workers, customers, suppliers, and trading partners could be ignored in the chase for short-term gain.

Just as some Greeks mixed up the two words, some people today mix up the two activities. Amidst complexity it is easy to lose sight of social objectives and concentrate solely on the task at hand, but that should not be done. Economic education, and current economic practice, should stress the importance of *oikonomia*, of creating wealth for the entire society.

The point to remember, though, is that *oikonomia* and individuality are not in conflict. Creating wealth for the entire society is possible only by freeing individuals to be fully productive.

We all give lip service to this concept, but a government cannot free individuals without freeing, as much as possible while assuring public safety and civil rights, the organizations in which they work.

The philosopher John Stuart Mill wrote about government in this way: "The worth of a State, in the long run, is the worth of the individuals composing it . . . a State which dwarfs its men, in order that they may be more docile instruments . . . will find that with small men no great thing can really be accomplished."

The same holds for the relationship of the government to corporations. A state that dwarfs its economic organizations will find that complex tasks cannot be ac-

complished. We need organizations with greater flexibility, not greater controls, to adapt to more complex tasks.

On what do I base that statement? On the nature of our political and economic system. Let me explain.

Some people think that the statement, "Our political and economic system is based on private property," is a truism. A truism is something that is not worth thinking about twice. But an unexamined truism is not worth repeating. Let us examine this one.

When we look upon private property as the bedrock of our system, is that because our interest is in private property per se? Or is our real goal individual freedom and the successful management of complexity, which is possible only under a system of limited government? And, therefore, do we emphasize property rights because the existence of private property is a vitally important limitation on government?

I put those statements in question form not to be rhetorical, but because there is sizable confusion about the role of private property. I see private property as leading to both political freedom and efficient management. The crucial part of the private property concept is not that *I* own something, but that the *government* cannot own everything. The government cannot control all rights and all goods. It cannot invade my home (unless there is sound suspicion of criminal activity). It cannot take the fruits of my initiative and labor without my consent (although we have allowed sometimes questionable exceptions to this rule).

Individuals can maintain their freedom over and against the state by organizing themselves into economic concerns based on property rights. Corporations, in this sense, are considerably more than locomotives of production. They are protection for the individual against governmental power, and freedom for the society to manage complex tasks in a rational manner. They give economic substance to political liberty.

To protect the individual and manage complexity, we must protect his organizations, including corporations.

### **The management of complexity requires a harnessing of the ambitions and efforts of each individual.**

The American private enterprise system has often been criticized in recent years. There are some justifiable grievances. But I tend to look at the overall historical record. What nation on earth has ever had a system that provided more economic opportunities and more chance for self-expression, both on and off the job, than does ours? Where are civil liberties, both on and off the job, better protected? What economic organizations have been more powerful engines for upward mobility than the American corporation?

The management of complexity requires a harnessing of the ambitions and efforts of each individual. Almost two centuries ago John Adams argued that "there is no people on earth so ambitious as the people of America. In other countries," he believed, "ambition and all its hopes are extinct," but in the United States the opportunity for success "makes the common people brave and enterprising," as well as "sober, industrious and frugal."

John Adams opposed slavery but, much to his sorrow and this nation's further tragedy, most of the other "founding fathers" overruled him. Thus, his comments about freedom for ambition did not apply to all Americans for many years; even now, the damage is still evident.

For most Americans, though, this country was an exception to the general rule that the economic plight of the father was visited upon the son. Historians who have studied records of social mobility in cities as different as Boston, Birmingham, Indianapolis and Chicago have seen that, as our society became more complex, the skills of individuals from various ethnic groups were increasingly called upon.

As more people from different races, ethnic groups, sexes, and philosophical backgrounds are thrown together in common economic endeavor, though, there are bound to be tensions. But they do not have to be disabling. Managers at Du Pont, as my young associate found out, have very different styles and preferences. But we all manage to work together.

We do that not because we are mandated to, and not because our employee handbooks tell us how to, but because we have a common sense of striving for quality and fairness.

That may sound like I am boasting about Du Pont, but there is nothing to boast about. Du Pont did not create the ethical reserves in its employees which are vital to its continued success.

*As the German economist Wilhelm Roepke once noted, "The market, competition, and the play of supply and demand do not create these ethical reserves; they presuppose them and consume them. These reserves have to come from outside the market, and no textbook on economics can replace them. Self-discipline, a sense of justice, honesty, fairness, chivalry, moderation, public spirit, respect for human dignity, firm ethical norms—all of these are things which people must possess before they go to market and compete with each other."*

As you can see, I have now come full circle in this discussion of the individual, the organization, and the society, and of how all three can combine to make complexity work—or to let it overcome us.

I have moved from small to large: person to organization to society. I have started with the importance of early education and training, followed individuals so trained into the organization and discussed some basic organizational principles, and then looked at a few somewhat-philosophical questions involved in the relationship of the organization with

Throughout, the stress has been on the individual. Successful management of complexity depends on him or her. □

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