1062

BUSINESS MANAGEMENT PRACTICES AND THE PRODUCTIVITY OF THE AMERICAN ECONOMY

HEARINGS

BEFORE THE

JOINT ECONOMIC COMMITTEE

CONGRESS OF THE UNITED STATES

NINETY-SEVENTH CONGRESS

FIRST SESSION

MAY 1 AND 11, AND JUNE 1 AND 5, 1981

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
83-184 O WASHINGTON : 1981

CONTENTS

WITNESSES AND STATEMENTS

FRIDAY, MAY 1, 1981

MONDAY, MAY 11, 1981

MONDAY, JUNE 1, 1981

AFTERNOON SESSION

FRIDAY, JUNE 5, 1981

SUBMISSIONS FOR THE RECORD

BUSINESS MANAGEMENT PRACTICES AND THE PRODUCTIVITY OF THE AMERICAN ECONOMY

FRIDAY, MAY 1, 1981

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to notice, at 10 a.m., in room 6226, Dirksen Senate Office Building, Hon. Henry S. Reuss (chairman of the committee) presiding.

Present: Representatives Reuss and Heckler.

Also present: James K. Galbraith, executive director; and William R. Buechner, Paul B. Manchester, Helen T. Mohrmann, Mark R. Policinski, and Timothy P. Roth, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE REUSS, CHAIRMAN

Representative REUSS. Good morning.

The Joint Economic Committee will be in order for the first of three hearings on what American business is doing and might be doing to improve productivity.

Members of this committee wholeheartedly—and I think unanimously agree—on the need to improve the productivity of the American economy. Whereas output per worker between 1950 and 1965 grew at an average of 2.4 percent per year, between 1973 and 1978 the average annual productivity increase was only 0.4 percent. And since then, productivity has actually declined.

All members of the committee recognize the need for investment incentives. We agree on the need to cut unnecessary regulation and on the need to improve job training. But this series of hearings will rather concentrate on how business can itself become more productive and thus more competitive.

Our witnesses will demonstrate that there is nothing inevitable about the decline in U.S. productivity or the superior performance of foreign competitors, Japanese or European.

We welcome today two Harvard Business School professors, William Abernathy and Robert Hayes, whose recent Harvard Business Review article on American business management has stirred some healthy controversy; as well as two businessmen, Robert Lynas, a group vice president and general manager of TRW with factories in Japan; and Chris Wada, assistant vice president of Sony Corp., a Japanese firm with factories in the United States.

Gentlemen, we appreciate your getting to us your comprehensive, prepared statements, and under the rule, and without objection, they will be placed in full in the record.

I will now ask you to proceed to orally summarize or to add to your prepared statements.

Let's hear first from the Harvard Business School team in whatever arrangement you prefer.

STATEMENT OF ROBERT H. HAYES, PROFESSOR OF BUSINESS ADMINISTRATION, HARVARD BUSINESS SCHOOL, BOSTON, MASS.

Mr. HAYES. Thank you, Mr. Chairman.

You had an opportunity to look over the article that Professor Abernathy and I wrote last year and the monograph on Japanese manufacturing management practices that I submitted several weeks ago to the committee.

Rather than repeat large segments of those two documents, I would prefer to summarize briefly our argument as well as some of the relevant data for you, and then Professor Abernathy will provide you with some examples of specific U.S. industries and companies which illustrate various aspects of our argument.

You are all, as you have indicated very well aware of, and informed about, the slowdown in the productivity growth rate in the private sector of our economy. Economists, businessmen, and Government leaders have proposed a variety of possible explanations for this decline. These explanations have been examined in a number of studies. They include such factors as the increased size of our Government, and the increased degree of its intervention in our economy, which may have led to reduced capital investment and R. & D. investment.

Another factor that's been looked at is the change in the work ethic of the American worker and constraints imposed by organized labor.

A third explanation that is sometimes advanced is the oil crisis that developed after 1973, with its associated price increases, dislocations, and uncertainties.

Another factor is the influx of untrained workers into our economy, both from the baby boom and the vast increase in the number of women and minority group members incorporated into our work force.

Individually, a number of studies have indicated that none of these factors appear to have great explanatory power. And collectively, they do not explain more than half of the total decline in productivity growth over the last 20 years.

Moreover, several of the factors that do appear to have considerable explanatory power are themselves symptoms, rather than underlying causes. We know capital investment and reduced R. & D. expenditures have some relationship to the reduction in productivity growth. The question is, what has caused the reduction in capital investment and R. & D.?

The persuasiveness of these explanations is further undermined by the fact that other countries who have experienced many of the same "causes" as our own country did not experience a productivity slowdown nearly as great as our own.

As an example, West Germany has a government sector that is larger than our own, and higher tax rates. It has an even greater oil energy crisis than we do, because they have none of their own domestic oil with which to average out changes in price or temporary shortage.

They have a much greater degree of involvement of the unions in their government; companies must deal with a variety of worker groups on all major decisions, and they have had the same influx of untrained workers in their economy. Yet their productivity growth over the last 10 years has actually increased from about 3 percent per year to well over 4 percent per year.

Similarly, the beginning of the slowdown in our productivity growth, which occurred about the middle 1960's, predated several of the supposed causes. For example, the oil crisis, which began in late-1973, occurred long after the downtrend in productivity growth was well established in our economy.

Several of these explanations should have influenced certain sectors of our economy more than others. For example, if Government interference, environmental protection legislation, the impact of organized labor, and the oil crisis are all important contributing factors, then we should expect to see a slowdown in productivity in the heavy manufacturing sector which is much greater than in other sectors which are not organized as heavily, do not utilize as much energy, and are not nearly as capital-intensive.

That is not true. If we look across our economy, we find that, in sector after sector, productivity growth has slowed and this productivity growth has slowed in some sectors considerably more than it has in heavy industry.

For example, retail and wholesale trade both have exhibited greater productivity slowdowns than heavy industry. Therefore, how do we explain the falloff in productivity?

We propose, Professor Abernathy and myself, another factor, one which is very difficult to quantify, but we feel is important and ultimately more persuasive than many of those raised previously. And that is the so-called "management factor."

Let me give you just three brief reasons behind our concern that American management practices may be a major cause of the slowdown in productivity growth.

One is the personal experience of both Professor Abernathy and myself, who lived and worked in Europe for a period of time as part of Harvard Business School's European Center for Research on International Management. Managers in Europe and Japan hold different assumptions, display different attitudes and follow different practices than U.S. managers. Moreover, they're becoming more and more critical of U.S. managers, whereas a decade ago they regarded U.S. management practices with great respect.

Second, there's evidence that U.S. management practices and attitudes have undergone a profound change in the last 30 years. Japanese and European businessmen almost invariably refer to what we call modern management theories, or modern management practices, as modern U.S. management theories and modern U.S. management practices, and differentiate those very much from their own attitudes and practices.

Third, there are theoretical bases for arguing that these new U.S. management practices might be expected to cause many of the problems that we are seeing.

For example, our performance measurement systems, compensation practices, and the promotion expectations that have developed in this

country over the last 30 years all tend to encourage short-term bases on the part of American businessmen.

Second. the organizational designs that we have adopted and the marketing orientation of American companies encourage a reduced emphasis on technological competition.

And third. the backgrounds of U.S. businessmen, their modes of training. their orientation. and the increasing diversification of large U.S. companies tend to encourage detached, analytical, and often superficial management understanding of the businesses they are entrusted to manage.

Now, our intent in this presentation is not to put all the blame for our current problems on the backs of U.S. managers, but is to emphasize that they share in the blame, and they must share in the solution.

Our problems will not go away if the Government gets off their back, or if OPEC gets off their back, or if organized labor gets off their back, or inflation goes away. The problem is a systemic one. And we are all, in some measure, responsible for it.

For example, the low rate of savings and forced investment in nonproductive assets, while they may have held back investment in productive capital equipment, does not explain why business itself has been investing less and less of the capital that it does have available in capital equipment.

If we look at the total cash flow available to American business since 1970—that's profit after tax, plus depreciation allowances—we find a decreasing proportion of that total cash flow has been invested in capital equipment in almost every year since 1970. It does not explain why industrial R. & D. spending, as a percent both of GNP and sales dollars, has decreased to just about 60 percent of its value 15 years ago; or why the amount spent by manufacturing and mining firms on acquiring other firms during the same interval has increased by almost five times.

The year 1979 is instructive, I think. U.S. companies spent somewhat less than $30 billion on R. & D. in 1979, but they spent about $45 billion for acquisitions. In other words, they spent 50 percent more for acquiring used assets than for creating new assets.

Therefore, we cannot rely too confidently on the ability of Government actions to redress this situation. For example, currently, Congress is debating various measures for reducing the depreciation tax lives of investment in capital equipment in an attempt to encourage increased expenditures. But in this sense, the United Kingdom has probably been one of the most attractive locations for investment in new capital equipment for a number of years. In the United Kingdom, for most classifications of new capital equipment, businesses are allowed to write off for tax purposes their investment in the very first year. Instead of a "10–5–3" program, it is a "1" program.

We cannot guarantee, therefore, that Government measures will, by themselves, encourage U.S. businesses to change their behavior. U.S. businessmen must themselves want to change. We are heartened by the evidence that there are a number of U.S. companies who have either begun to change from or have never changed to, some of these modern practices that we are concerned about.

Professor Abernathy will now describe some of the American companies that both illustrate the practices that we are concerned about and some of the American companies that appear to be making the appropriate kinds of changes. Thank you.

Representative REUSS. Thank you. Mr. Abernathy, please proceed.

STATEMENT OF WILLIAM J. ABERNATHY, PROFESSOR OF BUSINESS ADMINISTRATION, HARVARD BUSINESS SCHOOL, BOSTON, MASS.

Mr. ABERNATHY. Thank you, Mr. Chairman. Let me say it's an honor to be here and be able to make a presentation before this committee. I would like to follow on Professor Hayes' testimony and to cite a few examples. One particular example I would like to call to the attention of the committee is the consumer electronics industry in total as an example. In 1955, the United States had at least a 2-to-1 sales advantage in the consumer electronics worldwide. The Japanese had only $70 million in sales, and the United States had $1.5 billion in sales.

Sharp reversals, however, have occurred since this period of time. The Japanese now have a 2-to-1 advantage over the United States in consumer electronics. It's not only the sales volume that counts, however. We have got to look very carefully at the innovativeness of the firms at the same time. The Japanese were the first ones to introduce innovations like the pocket radio, transistorized television sets, the Trinitron tube, which Sony developed, the home video recorder, and so forth. Whereas the United States produced the major innovations in all of these fields, the Japanese have been much more successful in commercialization.

Let me go over a few just for a second. Whereas we contributed the major innovation that created the transistor in 1949 and early 1950's, we find that it was, in fact, the Japanese who first produced the transistorized pocket radio. Why is this? It would seem that the logic of the situation would have the inventors of the transistor commercializing that product. Such is not the case. Whereas we created television as an initial innovation, the Japanese were the first to provide solid-state electronics for the sets. Whereas the first video recorders were developed at Ampex in 1959 as a spectacular innovation, the Japanese were the first to produce the first commercialized home video recording system.

I think this particular—the last act of video recording is very instructive. As I understand the situation, Mr. Morita, who, as a senior executive at Sony back in 1955, viewed the early video recorder, and then set a design goal involving a hundredfold decrease in the cost of manufacture. This goal was for a Sony home video recorder. Indeed, over the years, Sony stumbled and fell many times in terms of this objective. They introduced video recorders that were not commercially successful, but they ultimately succeeded in a hundredfold decrease in the cost of a tape recorder. The "Beta Max" is the resulting product.

This goal was set over a 20-year lifespan of activity by Sony management, which represents an exception to anything that U.S. financial management principles, or present value tables, or other management techniques would tell you. By formal financial techniques, one would

have difficulty justifying a realistic development budget for any project over a 20-year period. Yet, somehow, poor, unfortunate Sony didn't understand that and were able to somehow develop this video recorder anyway.

I think this example is particularly instructive, because, one, the basic genesis of the problem goes back far beyond our current ills, as my colleague, Professor Hayes, has recounted, and provides a concrete example of an industry whose problems go back far beyond our current ills. There were no inflation problems in that particular point. The structural kinds of realities that the FTC and the Justice Department worry about certainly were not apparent in the consumer electronics industry at that time.

There were 150 television set manufacturers in the United States alone in 1955. There are now almost no sets produced in the United States. The sets which are produced are produced by Japanese firms, and they tend to do a better job managing our own people, our own work force, than we do ourselves, at least based on the productivity data and quality data I've seen.

We also, I think, failed to keep up to date in developing an effective manufacturing system, but perhaps the next example will best cite that.

I happen to be honored by being the panel chairman for the National Academy of Engineering study on the competitive status of the U.S. automobile industry. I went into this study thinking that the differences in cost were going to be explained by the labor rate. For example, say, 100 labor hours are required to produce a car in the United States. With an $8 an hour difference in labor cost, there would be an $800 differential in production cost. This leads to an advantage for the Japanese. I was astounded to find that this is not nearly the whole story. That, in fact, the productivity gap is perhaps as large or larger as the labor cost gap.

Consistently, the automobile industry finds in case after case that there is as much as a 50-percent differential in labor productivity. This is based on the industry's own data, by the way, since they were kind enough to share many of their findings and trip reports. Whereas we may take 100 hours to produce a car, Japanese firms produce them with 50 labor hours; for some engine cases, the gap is as high as a 3 to 1 productivity differential.

In 1974 or early 1970's, we were supposedly at exact parity with the Japanese, in terms of productivity. Now we're in a situation in which there is a 2 to 1 disadvantage. It's very popular to say that this is due to robotics, or capital investment and I have heard people testify to this before a congressional committee, citing the elaborate sophistication of Japanese factories. This does not seem to be the case. It's the opinion of some members of the automobile industry, at least, that for comparably automated plants, the productivity gap is still 2 to 1. The Japanese, in general, use the same machine tools that we do, and essentially operate them in a different way.

We have an explanation which runs counter to the cost in Reaganomics terms. The problem is not capital investment; totally, the problem is a people investment issue, as a matter of fact, that the Japanese work force is able to produce more products of higher quality in a given period of time than we are. The explanation is not principally

a work pace story. In fact, many of the findings suggest that the work pace is actually lower on many of the lines in Japan, but the quality is higher. When you get it right the first time, you don't have to fix it, and that makes a lot of difference.

So we have come to a turning point, I think, in this country. The automobile industry should be singled out for its deficiency in this area, because I think many mechanical-based industries find that their costs due to productivity is running 2 to 1 in favor of corresponding Japanese producers, even when production is in our own country.

The interpretation I give on this is that we are not dealing with a macro problem. The temptation is to try to search out those giant switches and levers which can be pulled in the economy— macro actions which you can take—to solve the Nation's problems. This involves getting inflation down, and many other related things. There's a good chance, as Professor Hayes said, that if inflation went away, the problem wouldn't.

Certainly, reducing the inflation rate will help and capital investment would help, but the first and primary task is to get the technology problem and the short-range management perspective turned around. This means correcting problems in U.S. management. The emphasis is not so much on the Government sector.

We find corporations have a very short-range viewpoint, whereas foreign firms have taken a much longer viewpoint and tend to deal more in terms of technological results and not so much in terms of the bottom line, so to speak.

To summarize, we find also that the Japanese factories are producing at a higher productivity level. They are better managing their own work forces, and better managing their own manufacturing than we are. All is not dark, however, because there are many firms that do get it right. When you look at examples like Caterpillar, Black & Decker, Hewitt-Packard, 3–M, among others, that, in fact, we find firms that are doing the right thing, and are, in fact, experiencing the favorable results which we might expect.

There is, nonetheless, a great need to turn our competitive record around in general. It's going to take time for many U.S. corporations to learn how to solve these problems but it is happening. And I hope that they will continue to do so. Thank you very much.

[The article referred to by Mr. Hayes and Mr. Abernathy follows:]

Managing our way to economic decline

Robert H. Hayes and William J. Abernathy

Modern management principles may cause rather than cure sluggish economic performance

How are we to fix responsibility for the current malaise of American business? Most attribute its weakened condition to the virus of inflation, the paralysis brought on by government regulation and tax policy, or the feverish price escalation by OPEC. Not quite right, say the authors. In their judgment, responsibility rests not with general economic forces alone but also with the failure of American managers to keep their companies technologically competitive over the long run. In advancing their controversial diagnosis, the authors draw on their own extensive work in the production field as well as their recent association with Harvard's International Senior Managers Program in Vevey, Switzerland. Having taken a long, hard look from abroad at how American managers operate, they propose some strong medicine for improving the health of American business.

Mr. Hayes is professor of business administration at the Harvard Business School and has served as faculty chairman of the International Senior Managers Program. He is the author of several HBR articles, the most recent being "The Dynamics of Process-Product Life Cycles" (coauthor, Steven C. Wheelwright, March-April 1979). Mr. Abernathy, also professor of business administration at the Harvard Business School, is a leading authority on the automobile industry. He is the author of *The Productivity Dilemma: Roadblock to Innovation in the Automobile Industry* (Johns Hopkins University Press, 1978). This is his second HBR article.

During the past several years American business has experienced a marked deterioration of competitive vigor and a growing unease about its overall economic well-being. This decline in both health and confidence has been attributed by economists and business leaders to such factors as the rapacity of OPEC, deficiencies in government tax and monetary policies, and the proliferation of regulation. We find these explanations inadequate.

They do not explain, for example, why the rate of productivity growth in America has declined both absolutely and relative to that in Europe and Japan. Nor do they explain why in many high-technology as well as mature industries America has lost its leadership position. Although a host of readily named forces—government regulation, inflation, monetary policy, tax laws, labor costs and constraints, fear of a capital shortage, the price of imported oil—have taken their toll on American business, pressures of this sort affect the economic climate abroad just as they do here.

A German executive, for example, will not be convinced by these explanations. Germany imports 95% of its oil (we import 50%), its government's share of gross domestic product is about 37% (ours is about 30%), and workers must be consulted on most major decisions. Yet Germany's rate of productivity growth has actually increased since 1970 and recently rose to more than four times ours. In France the situation is similar, yet today that country's productivity growth in manufacturing (despite current crises in steel and textiles) more than triples ours. No modern industrial nation is immune to the problems and

pressures besetting U.S. business. Why then do we find a disproportionate loss of competitive vigor by U.S. companies?

Our experience suggests that, to an unprecedented degree, success in most industries today requires an organizational commitment to compete in the marketplace on technological grounds—that is, to compete over the long run by offering superior products. Yet, guided by what they took to be the newest and best principles of management, American managers have increasingly directed their attention elsewhere. These new principles, despite their sophistication and widespread usefulness, encourage a preference for (1) analytic detachment rather than the insight that comes from "hands on" experience and (2) short-term cost reduction rather than long-term development of technological competitiveness. It is this new managerial gospel, we feel, that has played a major role in undermining the vigor of American industry.

American management, especially in the two decades after World War II, was universally admired for its strikingly effective performance. But times change. An approach shaped and refined during stable decades may be ill suited to a world characterized by rapid and unpredictable change, scarce energy, global competition for markets, and a constant need for innovation. This is the world of the 1980s and, probably, the rest of this century.

The time is long overdue for earnest, objective self-analysis. What exactly have American managers been doing wrong? What are the critical weaknesses in the ways that they have managed the technological performance of their companies? What is the matter with the long-unquestioned assumptions on which they have based their managerial policies and practices?

A failure of management

In the past, American managers earned worldwide respect for their carefully planned yet highly aggressive action across three different time frames:

> *Short term*—using existing assets as efficiently as possible.

> *Medium term*—replacing labor and other scarce resources with capital equipment.

> *Long term*—developing new products and processes that open new markets or restructure old ones.

The first of these time frames demanded toughness, determination, and close attention to detail; the second, capital and the willingness to take sizable financial risks; the third, imagination and a certain amount of technological daring.

Our managers still earn generally high marks for their skill in improving short-term efficiency, but their counterparts in Europe and Japan have started to question America's entrepreneurial imagination and willingness to make risky long-term competitive investments. As one such observer remarked to us: "The U.S. companies in my industry act like banks. All they are interested in is return on investment and getting their money back. Sometimes they act as though they are more interested in buying other companies than they are in selling products to customers."

In fact, this curt diagnosis represents a growing body of opinion that openly charges American managers with competitive myopia: "Somehow or other, American business is losing confidence in itself and especially confidence in its future. Instead of meeting the challenge of the changing world, American business today is making small, short-term adjustments by cutting costs and by turning to the government for temporary relief. . . . Success in trade is the result of patient and meticulous preparations, with a long period of market preparation before the rewards are available. . . . To undertake such commitments is hardly in the interest of a manager who is concerned with his or her next quarterly earnings reports." [1]

More troubling still, American managers themselves often admit the charge with, at most, a rhetorical shrug of their shoulders. In established businesses, notes one senior vice president of research: "We understand how to market, we know the technology, and production problems are not extreme. Why risk money on new businesses when good, profitable low-risk opportunities are on every side?" Says another: "It's much more difficult to come up with a synthetic meat product than a lemon-lime cake mix. But you work on the lemon-lime cake mix because you know exactly what that return is going to be. A synthetic steak is going to take a lot longer, require a much bigger investment, and the risk of failure will be greater." [2]

These managers are not alone; they speak for many. Why, they ask, should they invest dollars that are hard to earn back when it is so easy—and so much less risky—to make money in other ways?

1. Ryuhei Suzuki, "Worldwide Expansion of U.S. Exports—A Japanese View," *Sloan Management Review*, Spring 1979, p. 1.

2. *Business Week*, February 16, 1976, p. 57.

3. Burton G. Malkiel, "Productivity—The Problem Behind the Headlines," HBR May-June 1979, p. 81.

Why ignore a ready-made situation in cake mixes for the deferred and far less certain prospects in synthetic steaks? Why shoulder the competitive risks of making better, more innovative products?

In our judgment, the assumptions underlying these questions are prime evidence of a broad managerial failure—a failure of both vision and leadership—that over time has eroded both the inclination and the capacity of U.S. companies to innovate.

Familiar excuses

About the facts themselves there can be little dispute. *Exhibits I-IV* document our sorry decline. But the explanations and excuses commonly offered invite a good deal of comment.

It is important to recognize, first of all, that the problem is not new. It has been going on for at least 15 years. The rate of productivity growth in the private sector peaked in the mid-1960s. Nor is the problem confined to a few sectors of our economy; with a few exceptions, it permeates our entire economy. Expenditures on R&D by both business and government, as measured in constant (noninflated) dollars, also peaked in the mid-1960s—both in absolute terms and as a percentage of GNP. During the same period the expenditures on R&D by West Germany and Japan have been rising. More important, American spending on R&D as a percentage of sales in such critical research-intensive industries as machinery, professional and scientific instruments, chemicals, and aircraft had dropped by the mid-1970s to about half its level in the early 1960s. These are the very industries on which we now depend for the bulk of our manufactured exports.

Investment in plant and equipment in the United States displays the same disturbing trends. As economist Burton G. Malkiel has pointed out: "From 1948 to 1973 the [net book value of capital equipment] per unit of labor grew at an annual rate of almost 3%. Since 1973, however, lower rates of private investment have led to a decline in that growth rate to 1.75%. Moreover, the recent composition of investment [in 1978] has been skewed toward equipment and relatively short-term projects and away from structures and relatively long-lived investments. Thus our industrial plant has tended to age. . . ."[3]

Other studies have shown that growth in the incremental capital equipment-to-labor ratio has fallen to about one-third of its value in the early 1960s. By contrast, between 1966 and 1976 capital investment as a percentage of GNP in France and West Germany was more than 20% greater than that in the United States; in Japan the percentage was almost double ours.

To attribute this relative loss of technological vigor to such things as a shortage of capital in the

Exhibit I
Growth in labor productivity since 1960 (United States and abroad)

	Average annual percent change	
	Manufacturing 1960-1978	All industries 1960-1978
United States	2.8%	1.7%
United Kingdom	2.9	2.2
Canada	4.0	2.1
Germany	5.4	4.2
France	5.5	4.3
Italy	5.9	4.9
Belgium	6.9*	–
Netherlands	6.9*	–
Sweden	5.2	–
Japan	8.2	7.5

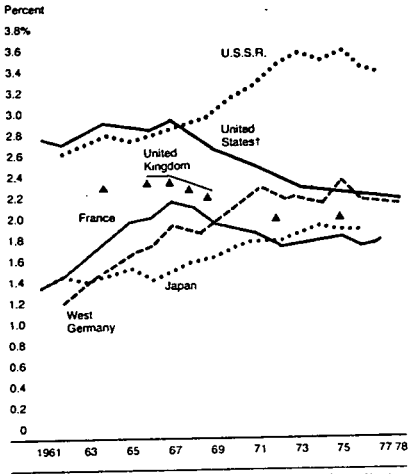
*1960-1977.
Source: Council on Wage and Price Stability, *Report on Productivity* (Washington, D.C.: Executive Office of the President, July 1979).

Exhibit II
Growth of labor productivity by sector, 1948-1978

	Growth of labor productivity (annual average percent)		
Time sector	1948-65	1965-73	1973-78
Private business	**3.2%**	**2.3%**	**1.1%**
Agriculture, forestry, and fisheries	5.5	5.3	2.9
Mining	4.2	2.0	−4.0
Construction	2.9	−2.2	−1.8
Manufacturing	3.1	2.4	1.7
Durable goods	2.8	1.9	1.2
Nondurable goods	3.4	3.2	2.4
Transportation	3.3	2.9	0.9
Communication	5.5	4.8	7.1
Electric, gas, and sanitary services	6.2	4.0	0.1
Trade	2.7	3.0	0.4
Wholesale	3.1	3.9	0.2
Retail	2.4	2.3	0.8
Finance, insurance, and real estate	1.0	−0.3	1.4
Services	1.5	1.9	0.5
Government enterprises	−0.8	0.9	−0.7

Source: Bureau of Labor Statistics
Note: Productivity data for services, construction, finance, insurance, and real estate are unpublished.

Exhibit III
National expenditures for performance of R&D as a percent of GNP by country, 1961-1978*



*Gross expenditures for performance of R&D including associated capital expenditures.
†Detailed information on capital expenditures for R&D is not available for the United States. Estimates for the period 1972-1977 show that their inclusion would have an impact of less than one-tenth of 1% for each year.
Source: *Science Indicators – 1978* (Washington, D.C., National Science Foundation, 1979), p. 6.
Note: The latest data may be preliminary or estimates.

United States is not justified. As Malkiel and others have shown, the return on equity of American business (out of which comes the capital necessary for investment) is about the same today as 20 years ago, *even after adjusting for inflation*. However, investment in both new equipment and R&D, as a percentage of GNP, was significantly higher 20 years ago than today.

The conclusion is painful but must be faced. Responsibility for this competitive listlessness belongs not just to a set of external conditions but also to the attitudes, preoccupations, and practices of American managers. By their preference for servicing existing markets rather than creating new ones and by their devotion to short-term returns and "management by the numbers," many of them have effectively forsworn long-term technological superiority as a competitive weapon. In consequence, they have abdicated their strategic responsibilities.

The new management orthodoxy

We refuse to believe that this managerial failure is the result of a sudden psychological shift among American managers toward a "super-safe, no risk" mind set. No profound sea change in the character of thousands of individuals could have occurred in so organized a fashion or have produced so consistent a pattern of behavior. Instead we believe that during the past two decades American managers have increasingly relied on principles which prize analytical detachment and methodological elegance over insight, based on experience, into the subtleties and complexities of strategic decisions. As a result, maximum short-term financial returns have become the overriding criteria for many companies.

For purposes of discussion, we may divide this *new* management orthodoxy into three general categories: financial control, corporate portfolio management, and market-driven behavior.

Financial control

As more companies decentralize their organizational structures, they tend to fix on profit centers as the primary unit of managerial responsibility. This development necessitates, in turn, greater dependence on short-term financial measurements like return on investment (ROI) for evaluating the performance of individual managers and management groups. Increasing the structural distance between those entrusted with exploiting actual competitive opportunities and those who must judge the quality of their work virtually guarantees reliance on objectively quantifiable short-term criteria.

Although innovation, the lifeblood of any vital enterprise, is best encouraged by an environment that does not unduly penalize failure, the predictable result of relying too heavily on short-term financial measures—a sort of managerial remote control—is an environment in which no one feels he or she can afford a failure or even a momentary dip in the bottom line.

Corporate portfolio management

This preoccupation with control draws support from modern theories of financial portfolio management. Originally developed to help balance the overall risk

4. Roger Bennett and Robert Cooper, "Beyond the Marketing Concept," *Business Horizons*, June 1979, p. 76.

and return of stock and bond portfolios, these principles have been applied increasingly to the creation and management of corporate portfolios—that is, a cluster of companies and product lines assembled through various modes of diversification under a single corporate umbrella. When applied by a remote group of dispassionate experts primarily concerned with finance and control and lacking hands-on experience, the analytic formulas of portfolio theory push managers even further toward an extreme of caution in allocating resources.

"Especially in large organizations," reports one manager, "we are observing an increase in management behavior which I would regard as excessively cautious, even passive; certainly overanalytical; and, in general, characterized by a studied unwillingness to assume responsibility and even reasonable risk."

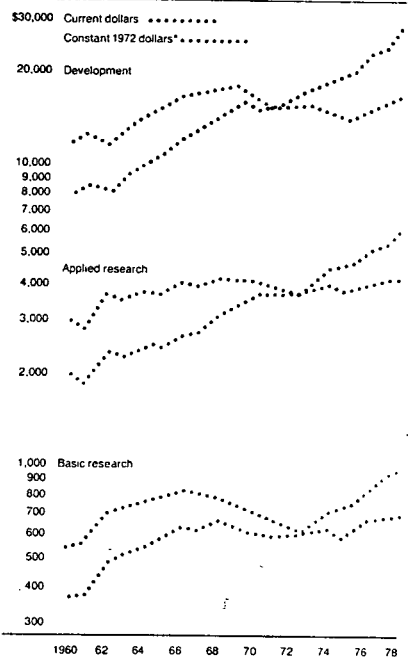
Market-driven behavior

In the past 20 years, American companies have perhaps learned too well a lesson they had long been inclined to ignore: businesses should be customer oriented rather than product oriented. Henry Ford's famous dictum that the public could have any color automobile it wished as long as the color was black has since given way to its philosophical opposite: "We have got to stop marketing makeable products and learn to make marketable products."

At last, however, the dangers of too much reliance on this philosophy are becoming apparent. As two Canadian researchers have put it: "Inventors, scientists, engineers, and academics, in the normal pursuit of scientific knowledge, gave the world in recent times the laser, xerography, instant photography, and the transistor. In contrast, worshippers of the marketing concept have bestowed upon mankind such products as new-fangled potato chips, feminine hygiene deodorant, and the pet rock. . . ." [4]

The argument that no new product ought to be introduced without managers undertaking a market analysis is common sense. But the argument that consumer analyses and formal market surveys should dominate other considerations when allocating resources to product development is untenable. It may be useful to remember that the initial market estimate for computers in 1945 projected total worldwide sales of only ten units. Similarly, even the most carefully researched analysis of consumer preferences for gas-guzzling cars in an era of gasoline abundance offers little useful guidance to today's automobile manufacturers in making wise product investment decisions. Customers may know what their needs are, but they often define those needs in terms of existing products, processes, markets, and prices.

Exhibit IV
Industrial R&D expenditures for basic research, applied research, and development, 1960-1978 (in $ millions)



*GNP implicit price deflators used to convert current dollars to constant 1972 dollars
Source: *Science Indicators – 1978*, p. 87
Note: Preliminary data are shown for 1977 and estimates for 1978

Deferring to a market-driven strategy without paying attention to its limitations is, quite possibly, opting for customer satisfaction and lower risk in the short run at the expense of superior products in the future. Satisfied customers are critically important, of course, but not if the strategy for creating them is responsible as well for unnecessary product proliferation, inflated costs, unfocused diversification, and a lagging commitment to new technology and new capital equipment.

Three managerial decisions

These are serious charges to make. But the unpleasant fact of the matter is that, however useful these new principles may have been initially, if carried too far they are bad for U.S. business. Consider, for example, their effect on three major kinds of choices regularly faced by corporate managers: the decision between imitative and innovative product design, the decision to integrate backward, and the decision to invest in process development.

Imitative vs. innovative product design

A market-driven strategy requires new product ideas to flow from detailed market analysis or, at least, to be extensively tested for consumer reaction before actual introduction. It is no secret that these requirements add significant delays and costs to the introduction of new products. It is less well known that they also predispose managers toward developing products for existing markets and toward product designs of an imitative rather than an innovative nature. There is increasing evidence that market-driven strategies tend, over time, to dampen the general level of innovation in new product decisions.

Confronted with the choice between innovation and imitation, managers typically ask whether the marketplace shows any consistent preference for innovative products. If so, the additional funding they require may be economically justified; if not, those funds can more properly go to advertising, promoting, or reducing the prices of less-advanced products. Though the temptation to allocate resources so as to strengthen performance in existing products and markets is often irresistible, recent studies by J. Hugh Davidson and others confirm the strong market attractiveness of innovative products.[5]

Nonetheless, managers having to decide between innovative and imitative product design face a difficult series of marketing-related trade-offs. *Exhibit V* summarizes these trade-offs.

By its very nature, innovative design is, as Joseph Schumpeter observed a long time ago, initially destructive of capital—whether in the form of labor skills, management systems, technological processes, or capital equipment. It tends to make obsolete existing investments in both marketing and manufacturing organizations. For the managers concerned it represents the choice of uncertainty (about economic returns, timing, etc.) over relative predictability, exchanging the reasonable expectation of current income against the promise of high future value. It is the choice of the gambler, the person willing to risk much to gain even more.

Conditioned by a market-driven strategy and held closely to account by a "results now" ROI-oriented control system, American managers have increasingly refused to take the chance on innovative product/market development. As one of them confesses: "In the last year, on the basis of high capital risk, I turned down new products at a rate at least twice what I did a year ago. But in every case I tell my people to go back and bring me some new product ideas."[6] In truth, they have learned caution so well that many are in danger of forgetting that market-driven, follow-the-leader companies usually end up following the rest of the pack as well.

Backward integration

Sometimes the problem for managers is not their reluctance to take action and make investments but that, when they do so, their action has the unintended result of reinforcing the status quo. In deciding to integrate backward because of apparent short-term rewards, managers often restrict their ability to strike out in innovative directions in the future.

Consider, for example, the case of a manufacturer who purchases a major component from an outside company. Static analysis of production economies may very well show that backward integration offers rather substantial cost benefits. Eliminating certain purchasing and marketing functions, centralizing overhead, pooling R&D efforts and resources, coordinating design and production of both product and component, reducing uncertainty over design changes, allowing for the use of more specialized equipment and labor skills—in all these ways and more, backward integration holds out to management the promise of significant short-term increases in ROI.

These efficiencies may be achieved by companies with commoditylike products. In such industries as ferrous and nonferrous metals or petroleum, backward integration toward raw materials and supplies tends to have a strong, positive effect on profits. However, the situation is markedly different for companies in more technologically active industries. Where there is considerable exposure to rapid technological advances, the promised value of backward integration becomes problematic. It may provide a

5. J. Hugh Davidson, "Why Most New Consumer Brands Fail," HBR March-April 1976, p. 117.

6. *Business Week*, February 16, 1976, p. 57.

quick, short-term boost to ROI figures in the next annual report, but it may also paralyze the long-term ability of a company to keep on top of technological change.

The real competitive threats to technologically active companies arise less from changes in ultimate consumer preference than from abrupt shifts in component technologies, raw materials, or production processes. Hence those managers whose attention is too firmly directed toward the marketplace and near-term profits may suddenly discover that their decision to make rather than buy important parts has locked their companies into an outdated technology.

Further, as supply channels and manufacturing operations become more systematized, the benefits from attempts to "rationalize" production may well be accompanied by unanticipated side effects. For instance, a company may find itself shut off from the R&D efforts of various independent suppliers by becoming their competitor. Similarly, the commitment of time and resources needed to master technology back up the channel of supply may distract a company from doing its own job well. Such was the fate of Bowmar, the pocket calculator pioneer, whose attempt to integrate backward into semiconductor production so consumed management attention that final assembly of the calculators, its core business, did not get the required resources.

Long-term contracts and long-term relationships with suppliers can achieve many of the same cost benefits as backward integration without calling into question a company's ability to innovate or respond to innovation. European automobile manufacturers, for example, have typically chosen to rely on their suppliers in this way; American companies have followed the path of backward integration. The resulting trade-offs between production efficiencies and innovative flexibility should offer a stern warning to those American managers too easily beguiled by the lure of short-term ROI improvement. A case in point: the U.S. auto industry's huge investment in automating the manufacture of cast-iron brake drums probably delayed by more than five years its transition to disc brakes.

Process development

In an era of management by the numbers, many American managers—especially in mature industries—are reluctant to invest heavily in the development of new manufacturing processes. When asked to explain their reluctance, they tend to respond in fairly predictable ways. "We can't afford to design new capital equipment for just our own manufacturing needs" is one frequent answer. So is: "The capital equipment producers do a much better job, and they can amortize their development costs over sales to many companies." Perhaps most common is: "Let the others experiment in manufacturing; we can learn from their mistakes and do it better."

Exhibit V
Trade-offs between imitative and innovative design for an established product line

Imitative design	Innovative design
Market demand is relatively well known and predictable.	Potentially large but unpredictable demand; the risk of a flop is also large.
Market recognition and acceptance are rapid.	Market acceptance may be slow initially, but the imitative response of competitors may also be slowed.
Readily adaptable to existing market, sales, and distribution policies.	May require unique, tailored marketing distribution and sales policies to educate customers or because of special repair and warranty problems.
Fits with existing market segmentation and product policies.	Demand may cut across traditional marketing segments, disrupting divisional responsibilities and cannibalizing other products.

Each of these comments rests on the assumption that essential advances in process technology can be appropriated more easily through equipment purchase than through in-house equipment design and development. Our extensive conversations with the managers of European (primarily German) technology-based companies have convinced us that this assumption is not as widely shared abroad as in the United States. Virtually across the board, the European managers impressed us with their strong commitment to increasing market share through internal development of advanced process technology—even when their suppliers were highly responsive to technological advances.

By contrast, American managers tend to restrict investments in process development to only those items likely to reduce costs in the short run. Not all are happy with this. As one disgruntled executive told us: "For too long U.S. managers have been taught to set low priorities on mechanization projects, so that eventually divestment appears to be the best way out of manufacturing difficulties. Why?

"The drive for short-term success has prevented managers from looking thoroughly into the matter of special manufacturing equipment, which has to be invented, developed, tested, redesigned, reproduced, improved, and so on. That's a long process, which needs experienced, knowledgeable, and dedi-

cated people who stick to their jobs over a considerable period of time. Merely buying new equipment (even if it is possible) does not often give the company any advantage over competitors."

We agree. Most American managers seem to forget that, even if they produce new products with their existing process technology (the same "cookie cutter" everyone else can buy), their competitors will face a relatively short lead time for introducing similar products. And as Eric von Hipple's studies of industrial innovation show, the innovations on which new industrial equipment is based usually originate with the user of the equipment and not with the equipment producer.[7] In other words, companies can make products more profitable by investing in the development of their own process technology. Proprietary processes are every bit as formidable competitive weapons as proprietary products.

The American managerial ideal

Two very important questions remain to be asked: (1) Why should so many American managers have shifted so strongly to this new managerial orthodoxy? and (2) Why are they not more deeply bothered by the ill effects of those principles on the long-term technological competitiveness of their companies? To answer the first question, we must take a look at the changing career patterns of American managers during the past quarter century; to answer the second, we must understand the way in which they have come to regard their professional roles and responsibilities as managers.

The road to the top

During the past 25 years the American manager's road to the top has changed significantly. No longer does the typical career, threading sinuously up and through a corporation with stops in several functional areas, provide future top executives with intimate hands-on knowledge of the company's technologies, customers, and suppliers.

Exhibit VI summarizes the currently available data on the shift in functional background of newly appointed presidents of the 100 largest U.S. corporations. The immediate significance of these figures is clear. Since the mid-1950s there has been a rather substantial increase in the percentage of new company presidents whose primary interests and expertise lie in the financial and legal areas and not in production. In the view of C. Jackson Grayson, president of the American Productivity Center, American management has for 20 years "coasted off the great R&D gains made during World War II, and constantly rewarded executives from the marketing, financial, and legal sides of the business while it ignored the production men. Today [in business schools] courses in the production area are almost nonexistent."[8]

In addition, companies are increasingly choosing to fill new top management posts from outside their own ranks. In the opinion of foreign observers, who are still accustomed to long-term careers in the same company or division, "High-level American executives . . . seem to come and go and switch around as if playing a game of musical chairs at an Alice in Wonderland tea party."

Far more important, however, than any absolute change in numbers is the shift in the general sense of what an aspiring manager has to be "smart about" to make it to the top. More important still is the broad change in attitude such trends both encourage and express. What has developed, in the business community as in academia, is a preoccupation with a false and shallow concept of the professional manager, a "pseudo-professional" really—an individual having no special expertise in any particular industry or technology who nevertheless can step into an unfamiliar company and run it successfully through strict application of financial controls, portfolio concepts, and a market-driven strategy.

The gospel of pseudo-professionalism

In recent years, this idealization of pseudo-professionalism has taken on something of the quality of a corporate religion. Its first doctrine, appropriately enough, is that neither industry experience nor hands-on technological expertise counts for very much. At one level, of course, this doctrine helps to salve the conscience of those who lack them. At another, more disturbing level it encourages the faithful to make decisions about technological matters simply as if they were adjuncts to finance or marketing decisions. We do not believe that the technological issues facing managers today can be meaningfully addressed without taking into account marketing or financial considerations; on the other hand, neither can they be resolved with the same methodologies applied to these other fields.

7. Eric von Hippel "The Dominant Role of Users in the Scientific Instrument Innovation Process," MIT Sloan School of Management Working Paper 75-764, January 1975.

8. *Dun's Review*, July 1978, p. 38.

Complex modern technology has its own inner logic and developmental imperatives. To treat it as if it were something else—no matter how comfortable one is with that other kind of data—is to base a competitive business on a two-legged stool, which must, no matter how excellent the balancing act, inevitably fall to the ground.

More disturbing still, true believers keep the faith on a day-to-day basis by insisting that as issues rise up the managerial hierarchy for decision they be progressively distilled into easily quantifiable terms. One European manager, in recounting to us his experiences in a joint venture with an American company, recalled with exasperation that "U.S. managers want everything to be simple. But sometimes business situations are not simple, and they cannot be divided up or looked at in such a way that they become simple. They are messy, and one must try to understand all the facets. This appears to be alien to the American mentality."

The purpose of good organizational design, of course, is to divide responsibilities in such a way that individuals have relatively easy tasks to perform. But then these differentiated responsibilities must be pulled together by sophisticated, broadly gauged integrators at the top of the managerial pyramid. If these individuals are interested in but one or two aspects of the total competitive picture, if their training includes a very narrow exposure to the range of functional specialties, if—worst of all—they are devoted simplifiers themselves, who will do the necessary integration? Who will attempt to resolve complicated issues rather than try to uncomplicate them artificially? At the strategic level there are no such things as pure production problems, pure financial problems, or pure marketing problems.

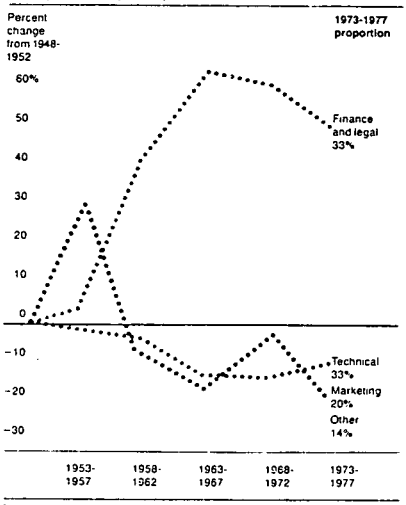
Merger mania

When executive suites are dominated by people with financial and legal skills, it is not surprising that top management should increasingly allocate time and energy to such concerns as cash management and the whole process of corporate acquisitions and mergers. This is indeed what has happened. In 1978 alone there were some 80 mergers involving companies with assets in excess of $100 million each; in 1979 there were almost 100. This represents roughly $20 billion in transfers of large companies from one owner to another—two-thirds of the total amount spent on R&D by American industry.

In 1978 *Business Week* ran a cover story on cash management in which it stated that "the 400 largest U.S. companies together have more than $60 billion in cash—almost triple the amount they had at the beginning of the 1970s." The article also described the increasing attention devoted to—and the sophisticated and exotic techniques used for—managing this cash hoard.

Exhibit VI

Changes in the professional origins of corporate presidents (percent changes from baseline years [1948-1952] for 100 top U.S. companies)



Source: Golightly & Co International (1978)

There are perfectly good reasons for this flurry of activity. It is entirely natural for financially (or legally) trained managers to concentrate on essentially financial (or legal) activities. It is also natural for managers who subscribe to the portfolio "law of large numbers" to seek to reduce total corporate risk by parceling it out among a sufficiently large number of separate product lines, businesses, or technologies. Under certain conditions it may very well make good economic sense to buy rather than build new plants or modernize existing ones. Mergers are obviously an exciting game; they tend to produce fairly quick and decisive results, and they offer the kind of public recognition that helps careers along. Who can doubt the appeal of the titles awarded by the financial community; being called

a "gunslinger," "white knight," or "raider" can quicken anyone's blood.

Unfortunately, the general American penchant for separating and simplifying has tended to encourage a diversification away from core technologies and markets to a much greater degree than is true in Europe or Japan. U.S. managers appear to have an inordinate faith in the portfolio law of large numbers—that is, by amassing enough product lines, technologies, and businesses, one will be cushioned against the random setbacks that occur in life. This might be true for portfolios of stocks and bonds, where there is considerable evidence that setbacks *are* random. Businesses, however, are subject not only to random setbacks such as strikes and shortages but also to carefully orchestrated attacks by competitors, who focus all their resources and energies on one set of activities.

Worse, the great bulk of this merger activity appears to have been absolutely wasted in terms of generating economic benefits for stockholders. Acquisition experts do not necessarily make good managers. Nor can they increase the value of their shares by merging two companies any better than their shareholders could do individually by buying shares of the acquired company on the open market (at a price usually below that required for a takeover attempt).

There appears to be a growing recognition of this fact. A number of U.S. companies are now divesting themselves of previously acquired companies; others (for example, W.R. Grace) are proposing to break themselves up into relatively independent entities. The establishment of a strong competitive position through in-house technological superiority is by nature a long, arduous, and often unglamorous task. But it is what keeps a business vigorous and competitive.

The European example

Gaining competitive success through technological superiority is a skill much valued by the seasoned European (and Japanese) managers with whom we talked. Although we were able to locate few hard statistics on their actual practice, our extensive investigations of more than 20 companies convinced us that European managers do indeed tend to differ significantly from their American counterparts. In fact, we found that many of them were able to articulate these differences quite clearly.

In the first place, European managers think themselves more pointedly concerned with how to survive over the long run under intensely competitive conditions. Few markets, of course, generate price competition as fierce as in the United States, but European companies face the remorseless necessity of exporting to other national markets or perishing.

The figures here are startling: manufactured product exports represent more than 35% of total manufacturing sales in France and Germany and nearly 60% in the Benelux countries, as against not quite 10% in the United States. In these export markets, moreover, European products must hold their own against "world class" competitors, lower-priced products from developing countries, and American products selling at attractive devalued dollar prices. To survive this competitive squeeze, European managers feel they must place central emphasis on producing technologically superior products.

Further, the kinds of pressures from European labor unions and national governments virtually force them to take a consistently long-term view in decision making. German managers, for example, must negotiate major decisions at the plant level with worker-dominated works councils; in turn, these decisions are subject to review by supervisory boards (roughly equivalent to American boards of directors), half of whose membership is worker elected. Together with strict national legislation, the pervasive influence of labor unions makes it extremely difficult to change employment levels or production locations. Not surprisingly, labor costs in Northern Europe have more than doubled in the past decade and are now the highest in the world.

To be successful in this environment of strictly constrained options, European managers feel they must employ a decision-making apparatus that grinds very fine—and very deliberately. They must simply outthink and outmanage their competitors. Now, American managers also have their strategic options hedged about by all kinds of restrictions. But those restrictions have not yet made them as conscious as their European counterparts of the long-term implications of their day-to-day decisions.

As a result, the Europeans see themselves as investing more heavily in cutting-edge technology than the Americans. More often than not, this investment is made to create new product opportunities in advance of consumer demand and not merely in response to market-driven strategy. In case after case, we found the Europeans striving to develop the products and process capabilities with which to lead markets and not simply responding to the current demands of the marketplace. Moreover, in doing this

they seem less inclined to integrate backward and more likely to seek maximum leverage from stable, long-term relationships with suppliers.

Having never lost sight of the need to be technologically competitive over the long run, European and Japanese managers are extremely careful to make the necessary arrangements and investments today. And their daily concern with the rather basic issue of long-term survival adds perspective to such matters as short-term ROI or rate of growth. The time line by which they manage is long, and it has made them painstakingly attentive to the means for keeping their companies technologically competitive. Of course they pay attention to the numbers. Their profit margins are usually lower than ours, their debt ratios higher. Every tenth of a percent is critical to them. But they are also aware that tomorrow will be no better unless they constantly try to develop new processes, enter new markets, and offer superior—even unique—products. As one senior German executive phrased it recently, "We look at rates of return, too, but only after we ask 'Is it a good product?' "[9]

Creating economic value

Americans traveling in Europe and Asia soon learn they must often deal with criticism of our country. Being forced to respond to such criticism can be healthy, for it requires rethinking some basic issues of principle and practice.

We have much to be proud about and little to be ashamed of relative to most other countries. But sometimes the criticism of others is uncomfortably close to the mark. The comments of our overseas competitors on American business practices contain enough truth to require our thoughtful consideration. What is behind the decline in competitiveness of U.S. business? Why do U.S. companies have such apparent difficulties competing with foreign producers of established products, many of which originated in the United States?

For example, Japanese televisions dominate some market segments, even though many U.S. producers now enjoy the same low labor cost advantages of offshore production. The German machine tool and automotive producers continue their inroads into U.S. domestic markets, even though their labor rates are now higher than those in the United States and the famed German worker in German factories is almost as likely to be Turkish or Italian as German.

The responsibility for these problems may rest in part on government policies that either overconstrain or undersupport U.S. producers. But if our foreign critics are correct, the long-term solution to America's problems may not be correctable simply by changing our government's tax laws, monetary policies, and regulatory practices. It will also require some fundamental changes in management attitudes and practices.

It would be an oversimplification to assert that the only reason for the decline in competitiveness of U.S. companies is that our managers devote too much attention and energy to using existing resources more efficiently. It would also oversimplify the issue, although possibly to a lesser extent, to say that it is due purely and simply to their tendency to neglect technology as a competitive weapon.

Companies cannot become more innovative simply by increasing R&D investments or by conducting more basic research. Each of the decisions we have described directly affects several functional areas of management, and major conflicts can only be reconciled at senior executive levels. The benefits favoring the more innovative, aggressive option in each case depend more on intangible factors than do their efficiency-oriented alternatives.

Senior managers who are less informed about their industry and its confederation of parts suppliers, equipment suppliers, workers, and customers or who have less time to consider the long-term implications of their interactions are likely to exhibit a noninnovative bias in their choices. Tight financial controls with a short-term emphasis will also bias choices toward the less innovative, less technologically aggressive alternatives.

The key to long-term success—even survival—in business is what it has always been: to invest, to innovate, to lead, to create value where none existed before. Such determination, such striving to excel, requires leaders—not *just* controllers, market analysts, and portfolio managers. In our preoccupation with the braking systems and exterior trim, we may have neglected the drive trains of our corporations.

[9] Business Week, March 1, 1980, p. 76.

Representative REUSS. Thank you. Mr. Lynas, please proceed.

STATEMENT OF ROBERT M. LYNAS, GROUP VICE PRESIDENT AND GENERAL MANAGER, CHASSIS COMPONENTS, AUTOMOTIVE WORLDWIDE, TRW, INC., CLEVELAND, OHIO

Mr. LYNAS. Thank you. Mr. Chairman. It is a pleasure to be here today. I will summarize my prepared statement.

I am a group vice president and general manager of Chassis Components of Automotive Worldwide of TRW, Inc.

TRW is a worldwide diversified manufacturer of high-technology products and services for car and truck, electronics and space, and industrial and energy markets.

I have responsibility for divisions, plants, joint venture companies in the United States, Canada, Venezuela, Brazil, Argentina, and Japan.

The Chassis Components Group of AWW has over 9,000 employees. We market, engineer, and manufacture a broad range of products for the automotive industry, such as valves, steering linkage, rack and pinion steering gears, ball joint suspension, precision forgings, and cold formed parts for passenger cars, light trucks, heavy duty trucks, farm and construction equipment for both the original equipment and after market application.

I will direct my remarks particularly to the Japanese challenge to the American automobile and parts supplier industry. I want to emphasize the need to accelerate innovative change in U.S. management technology and engineering technology and state that the acceptability of accelerated change will succeed or fail on attitudes—management and union attitudes particularly—but also on the attitude of the people in our organizations, all of them.

One, there are changes required in attitude and approaches to some of the basic management philosophies that have permeated our industry.

Two, we need changes in attitude and approaches to the quality engineering disciplines in all of our engineering departments.

Three, we need changes in attitudes and approaches to many management systems, particularly first-tier systems that are strangling our ability to improve quality and productivity.

As we are painfully aware, the Japanese challenge is formidable. They are succeeding in achieving an ever-increasing market share for several reasons. Basically, I perceive that, one, the Japanese are effectively using quality as the primary strategic marketing weapon. The Japanese are outengineering us, perhaps not overwhelmingly in the product design area, but they are doing a superior job in the critical engineering areas of quality and plant engineering functions, and are doing a better job in manufacturing engineering and industrial engineering.

The Japanese have developed and are using more effective management systems, and as I say, particularly the first-tier management system.

The Japanese, in addition, have taught broad, technical skills to their employees through extensive educational and training programs;

and that education and training has resulted in superior productivity from machines, tools, and the equipment that they use.

The Japanese success is based on simple, logical business attitudes, exacting engineering disciplines and advanced management systems.

The following is a summarization of my recommendations to improve U.S. productivity:

One, we need an essential change that relates to the improvement of managing engineering and controlling product quality which we all heard about, the results of which will produce positive gains in productivity. They are interrelated and inseparable.

The challenge of the 1980's to the U.S. industry is to increase the emphasis on quality management and before-the-fact quality engineering.

In addition, we need some changes in some basic management philosophies related to attitudes. Let me give you some examples:

Quality versus price and quality costs. In my opinion, American management still has not fully recognized that quality is more critical than price in the fight for market share.

In addition, we should inspect our management attitude about the people capability that we have. I would like to comment on one myth concerning American workers that has been widely disseminated and often repeated: That because of the ethnic background of the Japanese versus the Americans, we cannot compete. I don't think that is the case. I believe that if we do the engineering and the management job that we should, it will come down to work pace only. And I believe that we can live with that difference, because U.S. industry has other real economic offsets.

Another management approach that must change is one that I refer to as the "demand philosophy."

In the United States, management sees productivity as being the result of management demand. That is, we manage using the demand philosophy for getting production. To oversimplify, U.S. management systems are cost driven.

Productivity, as it is commonly perceived, is measured by pieces per hour. And if the numerical goal is achieved, optimum cost is the expected result. Unfortunately, quality is the stepchild of the demand for pieces per hour from machines and equipment.

Also, the demand philosophy sacrifices the reliability and repeatability of machines and tools to get those pieces per hour.

Conversely, I see the Japanese management system as using a reliability philosophy for getting high quality products and productivity. Japanese management systems are quality driven. The Japanese approach requires exacting engineering disciplines. Productivity is engineered into both the product and the process, and are inseparable.

Significantly, the result of the quality-driven management philosophy is optimum cost.

And finally, organization structure.

I believe U.S. business organizations are too rigidly structured to achieve optimum product quality and productivity. We are too far away from the people, and we have got to get closer to the people and their attitudes.

We need to advance quality engineering disciplines and to balance our engineering input to product quality. I am convinced we are only as strong as our weakest engineering department's input quality and productivity, and therefore, each function should be making a nearly equal contribution.

Hence, you can understand the reason for my emphasis on improving plant engineering and quality engineering, because they are after-the-fact engineering functions today, not before the fact. I believe these engineering departments are not performing well as compared to the Japanese.

We need changes in many management systems. I will identify three:

Our present use of time standards is questionable. Management must review the objectives for having and using time standards and performance standards. As used in most plants, they are a work measurement to measure the performance of people, and are the root of the demand philosophy for pieces per hour.

Another is that business must decentralize work specialization back to the technology centers, or put about 80 percent of the work tasks back to the machines and to the people who operate them and decentralize it out of skilled trades areas.

Another is that we must provide a much greater degree of technical training for our people; we must inundate our technology centers, our machines, and equipment with more technical skills.

U.S. industry can do almost anything if we put our minds to it. American managers must have greater confidence in the intelligence of the employees, and take advantage of their individualism. The Japanese have taken about 30 years to reach the current level of management sophistication and leadership. I think it is going to take us 5 years plus to turn this around.

[The prepared statement of Mr. Lynas follows:]

PREPARED STATEMENT OF ROBERT M. LYNAS

Improving Quality and Productivity in U.S. Automobile Supplier Industry

I am Robert M. Lynas, Group Vice President and General Manager of Chassis Components of Automotive Worldwide (AWW) of TRW Inc. TRW is a worldwide diversified manufacturer of high technology products and services for car and truck, electronics and space, and industrial and energy markets. I have responsibility for divisions, plants and joint venture companies in the United States, Canada, Venezuela, Brazil, Argentina and Japan. The Chassis Components Group of AWW has over 9,000 employees. The group markets, engineers and manufactures a broad range of products such as: automotive valves, steering linkage, rack and pinion steering gears, ball joint suspension assemblies, precision forgings and cold formed parts for passenger cars, light and heavy duty trucks, farm and construction equipment for both original equipment and aftermarket applications.

I will direct my remarks particularly to the Japanese challenge to the American automobile industry and identify a program that we are working on in the Chassis Components Group which I believe can help to significantly improve product quality and productivity. Also, I want to emphasize the need to accelerate innovative change in U.S. management technology and engineering technology and state that, the acceptability of accelerated change will succeed or fail on the basis of attitudes, management and union attitudes particularly, but also on the attitudes of all the people in our organizations. To be more specific

there are changes required in attitudes and approaches; to some basic management philosophies that permeate our business today, to quality engineering disciplines in all of our engineering departments, and to many management systems, particularly first tier systems, that are strangling our ability to improve quality and productivity.

As we are painfully aware, the Japanese challenge is formidable. They are succeeding in achieving ever increasing market share for several reasons. Basically, I perceive that:

1. The Japanese are effectively using quality as a primary strategic marketing weapon.
2. The Japanese are out engineering us, perhaps not overwhelmingly in the product design area, but they are doing a superior job in critical quality and plant engineering functions and are doing a better job in manufacturing and industrial engineering.
3. The Japanese have developed and are using more effective management systems in most operations areas.
4. The Japanese have taught broad technical skills to their employees through extensive educational and training programs. That education and training has resulted in superior productivity from the employees, machines, tools, and equipment.

The result of the Japanese effort is that three out of the four American passenger car producers are now running a poor second to the Japanese in the world market for car sales. First-tier vehicle parts suppliers such as TRW–AWW are facing the same challenge.

The current U.S. passenger car business; warranty and recall problems (75.5 million cars or about 60 percent of all the cars we have produced in the last 15 years have been recalled); loss of market share to imports; and the outlook for the 80's are clear warnings that U.S. car makers and parts suppliers have lost customer confidence. I believe that the loss of confidence and Japanese success will continue if some of our major engineering, management systems and other efforts are not redirected.

We can be certain that the erosion of U.S. world market position in automobiles will not be the last competitive challenge to U.S. industry from the Japanese. Indeed, look at what the Japanese have done to world competition—in the shipping industry, motorcycles, cameras, televisions, watches, and steel, etc. In each instance, the Japanese goal was world dominance. In each case, the goal was achieved. The Japanese objective is nothing less than world dominance in connection with automobiles. Moreover, the Japanese challenge does not end with automobiles. What's next? The Japanese are now attacking the U.S. data processing and computer business and I predict they will also move into a predominant position in the machine tool, intermediate and heavy truck, and the aircraft industries in years to come. The Japanese success is based on logical business attitudes, exacting engineering disciplines and advanced management systems.

But what can we do? There are solutions. However, we must attack the core of the problem and deal with the real issue and be willing to change.

One essential change that is required relates to improvement in managing, engineering and controlling product quality, the results of which will be positive gains in productivity. I'll describe a program which is in its initial stages in my group, that I believe can help significantly.

INCREASE EMPHASIS ON QUALITY MANAGEMENT AND QUALITY ENGINEERING TO BALANCE TECHNOLOGIES

Quality is not limited to the production line. It embraces all business functions, both line and staff. All operating unit departments affect product quality, either directly or indirectly.

The Chassis Components Group of TRW–AWW has been working on a program to improve product quality and productivity involving all areas of the business and people within a manufacturing operation. I have named the program Quality-MEC. The letters "MEC" identify the three technologies involved in producing high quality products and increasing productivity. Quality-MEC is:

QUALITY [M] ANAGEMENT
QUALITY [E] NGINEERING
QUALITY [C] ONTROL

A program to achieve high quality products at competitive prices requires balance among the above three business functions.

The challenge of the 80's for U.S. industry is to increase the emphasis on quality management and "before-the-fact" quality engineering.

To date, we at TRW have concentrated on developing quality engineering technology and have been working within each engineering department to identify the technical disciplines required to improve quality and productivity.

The basic premises upon which technology centers are designed are that: (1) product quality and productivity are achieved on the engineer's drawing board; and (2) repeatability and reliability of processes, machines and tools are established on the engineer's drawing board. Hence, high quality products can be fully preengineered. I just referred to a "technology center". A technology center or a Quality-MEC center as we call it, is a self-contained manufacturing work area. It may be one machine or many. The center should be the result of the combined engineering technology of five engineering departments (not four). The five are product engineering, manufacturing engineering, industrial engineering, plant engineering, and quality engineering. A technology center is designed, built and installed with product quality and productivity built into the product design and manufacturing process. Quality is achieved during the planning stage, and hence, the technology center is the best possible application of the combined balance efforts of the above five engineering disciplines.

The engineered Quality-MEC center has: (1) the necessary quality engineering tasks completed by each of the five engineering departments before ordering or building a machine and; (2) all operator work tasks, which are reasonably possible, engineered therein.

For example, such tasks as handling parts (to-from-and-through the center), washing parts, checking parts, part quality responsibility, tool quality, tool change, pre-set-up of tools, tool grinding, tool control, limited machine maintenance, chip removal, oil changes, and machine greasing, should be engineered into the center and automated or made as convenient for manual performance as possible. All continuing operating procedures that are required to maintain process repeatability and reliability are also engineered during the planning phase. At TRW, we intend to emphasize Quality-MEC centers. The result is certain to be improved product quality, productivity and profitability.

Product quality can be maintained and sometimes improved by operating employees after a well-designed and engineered center is put in place. Stated otherwise, employees cannot significantly improve the quality of products that are poorly designed or made on inadequate machines and tools. Hence, a fully engineered Quality-MEC center becomes the standard against which management can evaluate alternative processing and fully identify cost compromises that may affect product quality.

CHANGE SOME BASIC MANAGEMENT PHILOSOPHIES AND ATTITUDES

Quality versus price and quality costs.—In my opinion, American management still has not fully recognized that quality is more critical than price in the fight for marketshare. Some people in the U.S. automotive industry say we're losing the battle for customers because of price. I disagree. To those who insist that price is the controlling factor, I want to mention a few familiar Japanese names. Honda, Toyota, Sony, and Seiko, etc. Their products cost more than comparable U.S. products. However, many Americans are paying more to buy Japanese. Why? Simply because the Japanese products create a mental image of high product quality. Indeed, I perceive that no world competitor of the U.S. automobile industry has been winning the battle for sales on the basis of lower prices. Hence, I believe quality is the controlling issue.

Also, American management assumes high quality costs money and under our current "reject and sort" management philosophy it does. In the U.S., we consider a 1 or 2 percent reject rate acceptable. Hence, we are willing to sort out the bad parts to achieve an acceptable final product quality. I believe this management concept is a primary cause of the warranty problems and many of the product recalls our industry has experienced. Conversely, the Japanese truly believe that the "design it right, make it right" concept is the only way and that "high quality does not cost money; it saves money." I agree. I am a strong advocate of the Japanese philosophy. (As a footnote, when I say "Quality" I'm speaking comprehensively of high product quality, reliability, and durability.)

Our people capability and their attitudes.—I would like to comment on one myth concerning American workers that has been widely disseminated and is often repeated.

Many times you have read and heard that U.S. industry cannot compete in world markets because our American workers' attitudes are poor, and that it is the Japanese's work ethic which provides strong discipline and results in high quality and productivity? I am in violent disagreement with this conclusion. In my opinion, it's a copout when management excuses itself, from taking leadership responsibility by assigning an undue portion of quality and productivity problems to the production worker. He is only one important element of a manufacturing business. Business is the aggregate of many elements, and it is how well these parts are brought together which determines the success or failure of a business. If management will do some of the things I am discussing and others which will improve our product quality and productivity, I am convinced the difference between the Japanese worker and the U.S. worker can be reduced to work pace. I am convinced American business can live with that difference because U.S. industry has other real economic offsets.

Another management approach that must change is one I call: *The Demand Philosophy.*

In the United States, management sees productivity as being the result of a management demand. That is, we manage using a demand philosophy for getting production. To over simplify, U.S. management systems are cost driven. Productivity, as it is commonly perceived, is measured by pieces per hour, and if the numerical goal is achieved, optimum cost is the expected result. Unfortunately, quality is a step-child of the demand for pieces per hour from people and machines. Also, the demand philosophy sacrifices the reliability and repeatability of machines and tools for pieces per hour.

Conversely, I see the Japanese management as using a reliability philosophy for getting high quality products and productivity. Japanese management systems are quality driven. The Japanese approach requires exacting engineering disciplines. Productivity is engineered into both the product and the process and is inseparably related to quality. Significantly, the result of the quality driven management philosophy is optimum cost.

Japanese companies are managing their fixed assets better than U.S. companies. The Japanese in most cases are putting machines, tools, and facilities in place for 50 percent or less of the cost than we are. Furthermore, they are managing their variable assets better and are using less investment because of improved systems for production control, material control, tool design and tool control, and maintenance of machines and equipment. (I could name more.) Also, the Japanese are managing their human resources more effectively. The Japanese are bringing to the man, better engineered machines and equipment, better management systems and the training necessary to allow each person to use his time and machines in the best possible manner.

The Japanese success in obtaining high quality and exceptional productivity is primarily due to the reliability and repeatability of their machines, tools, equipment and facilities. This reliability and repeatability is the result of careful engineering of tools and machines and their ability to maintain these fixed assets at a high level of use over an extended period of time. Also, the Japanese emphasis on reliability helps achieve optimum economic use of variable assets, i.e., inventory. In Japan, in-process inventory is often less than 30 percent of that seen in corresponding U.S. businesses. Inventory control is directly associated with the reliability and repeatability of manufacturing processes, machines, and tools. Their effective use of people is also directly related to the reliability and repeatability of manufacturing processes, machines, and tools. Their effective use of people is also directly related to the reliability and repeatability of manufacturing processes. In my opinion, Japanese management more effectively combines investment, technology and human resources into a successful business.

Organization structure.—I believe U.S. business organizations are too rigidly structured to achieve optimum product quality and productivity. We need greater organizational flexibility in managing our complex business today. Often, U.S. business organization structures impede effective communications by too many levels of management. New organizations and new simpler management structures are required to accomplish the goals of improved quality and increased productivity. Specifically, managers must get closer to the work, to the people

and to the decisions which actually control product quality and affect productivity.

I believe a matrix organization offers an opportunity for significant improvement in communications. Essentially, matrix organization, on a well-defined basis, allows a person to work effectively for more than one manager. A proper matrix organization will help to more clearly define responsibility for decisions involving people in more than one group or function help bridge geographical gaps, improve line and staff relationships, help define line and program management responsibilities, and reduce the levels of management. Matrix organization works effectively when the lines of communication are complicated, where uncertainty exists as to responsibility in the decision making process, and where staff responsibility can become confused with line responsibility. In my experience, matrix organization can be used to improve communications with all of the people in a position to achieve better product quality and increased productivity.

ADVANCE QUALITY ENGINEERING DISCIPLINES AND BALANCED ENGINEERING INPUT TO PRODUCT QUALITY

I have reviewed the contribution of various engineering disciplines to product quality and productivity within the Chassis Components Group. I was surprised by the results of my evaluation. In terms of effectiveness to design quality into the product and manufacturing process, on a scale of one-to-ten, I found the contribution of our product engineering departments to be about 7; manufacturing engineering 6; industrial engineering 4; plant engineering 1; and quality engineering 1. I am convinced we are only as strong as our weakest engineering departments input to quality and productivity and, therefore, each function should be making a nearly equal contribution. Hence, you can understand the reason for my emphasis on improving plant and quality engineering.

Quality engineering.—Indeed, an essential element is to elevate quality engineering to a position equal to the other engineering departments. I am creating, a new engineering department to handle all quality functions. In the past, quality engineering has, in most organizations, been a subgroup of the quality control department primarily assigned to the analysis of inspection data and the investigation and correction of quality problems—all of which are after-the-fact activities. This must change.

What is planned in our Group is a new quality engineering organization, with a manager at the operating unit level, who will take an active part in the preproduction engineering of product designs, facilities, machines, and manufacturing processes. Quality engineering will become an integral part of the other engineering departments through the establishment of quality engineering delegates (QED's) using a matrix organization approach in order to assure that quality is engineered into the product and reliability and repeatability into the manufacturing process whether it be in a supplier's plant, our plant, or the customer's plant.

To achieve the engineering of quality into product design and manufacturing processes requires greater emphasis on : quality engineering discipline in product engineering ; quality engineering discipline in manufacturing engineering ; quality engineering discipline in industrial engineering; quality engineering discipline in plant engineering.

In the short-term, U.S. industry needs to train innovative quality engineers for all engineering departments. In the long-term, industry efforts must be supported by college graduates from good engineering schools, who are fully trained to design quality into products and processes. I believe the result of the training of quality engineers will be to reestablish customer confidence and satisfaction in American product quality. Today few U.S. colleges and universities have the word "quality" in their curriculum, let alone offer a degree in quality engineering. Product quality must be identified as a technical discipline requiring a full curriculum comparable to mechanical engineering, electrical engineering, and industrial engineering. I recommend that we try to influence education of students in the quality philosophy.

Plant engineering.—The success of engineering quality into the process and maintaining it depends on a new approach to the Plant Engineering function.

Balanced engineering input is a requirement for achieving good product quality and productivity. Therefore, contribution to product quality of our plant engineering departments must improve. Today most plant engineering functions

are maintenance departments. Hence, like quality engineering, plant engineers are after-the-fact repairmen, not before-the-fact engineers. The proper before-the-fact use of plant engineering is important. Specifically, I believe that fully 50 percent of Japanese superiority in quality and productivity is derived from their commitment to properly design and maintain machines and tools. The properly designed and maintained machine avoids overloads and tool breakage. The Japanese have extended the life of production machines to two and three times those which are commonly accepted by the U.S. industry. Importantly, the Japanese engineering philosophy significantly reduces inventory without any loss of productivity. Obviously, this result has great significance. At TRW, we are developing a plan to completely restructure plant engineering to accomplish the improvements achieved by the Japanese.

CHANGE SOME MANAGEMENT SYSTEMS

Now, I'd like to identify some of the management systems and approaches that have impregnated U.S. business that, in my opinion, are limiting our ability to compete with Japanese quality and productivity.

Let's start with:

The elimination of second and third class citizens.—I believe U.S. industry must eliminate second and third class citizens. What comes to mind when I say these words—office worker, skilled tradesman, production workers, laborers?

How about white collar workers and blue collar workers?

How often do we use the words direct labor supervision, indirect labor supervision, labor contracts?

I'm sure you get my point. The business of today and the future does not need three or four classes of employees. What we need is dedicated "Business Citizens". I believe something as simple as a change in language to eliminate some of the obvious distinctions between salaried and hourly people and the elimination of such things as time clocks and time cards will produce progress.

The use of time standards.—Management must review the objectives for having and using time and performance standards. As used in most plants, time standards and work measurement are the root of the demand philosophy (pieces per hour) of managing. I do not want to indicate that the measurement of work is wrong. However, I do believe management's use of standards as a means of measuring employee performance is not correct and must change. Time and performance standards should be used as part of the evaluation of costs and as criteria for designing appropriate technology centers. We must take time standards from the plant floor and substitute personal responsibility therefor.

Work centralization vs. decentralization.—American business must decentralize work specialization and put 80 percent or more of all work tasks which are now performed by skilled tradesmen back to the work place, the technology center, or what I refer to as the Quality-MEC center.

How many here can remember when management promoted work simplification as a great way to get productivity? Essentially, the thrust of work simplification is to divide production work into simple tasks which any employee can do. The object was to achieve easy repetitive tasks. It worked to a point. Unfortunately, simplification of work tasks caused greater centralization of the skilled trades, increased the proliferation of job classifications and caused dissatisfaction with the quality of work life. Actually, this experience has shown that this management approach has reduced quality and limited productively. I believe in decentralization of work tasks back to the production machines where operator decisions can be made at a time when action will increase quality and productivity. Of course, the tasks and responsibility of the operator will be more complex and greater. But isn't that what most people want? Obviously, more complex tasks and greater responsibility require that we must educate, train and rely on our "Business Citizens" to perform responsible job tasks. Perhaps, such education, training and reliance will put greater meaning in the phrase quality of work life.

Technical education of employees.—It is clear to me that American businesses must provide more technical training for employees. We must innundate technology centers with technical skills. Trained workers actually improve the product quality and productivity. In most U.S. plants, even when a good engineering job is done to put a new machine in place, within two years product quality and productivity have decreased. Conversely, in Japan, they will have increased. Why? A primary reason is that the U.S. cannot match the

average Japanese worker's technical skills. We have not effectively trained our people and hence, they do not have sufficient technical skills. In Japan, the producing people are trained in statistical analysis, machine and tool repair, machine setup, etc. Conversely, in the United States, we have machine operators and we have skilled tradesmen. This problem can be overcome by giving all employees the opportunity for technical education and on-the-job training.

Of course, if a technical education program is going to be successful, there must be an incentive to learn and the subjects must relate clearly to the concept of the "do it right" philosophy. Basically, the thrust of incentive to learn is increased compensation that will be paid to employees who learn and apply technical skills. For example, production employees should be able to earn the rate being paid in a manufacturing facility, which is now usually paid to a class "A" toolmaker only. When a broad base of technically trained people becomes available, they will be assigned to the technology centers, and eventually fully 80% of the skilled trades work will be located at the machines and equipment. I would continue to have centralized skilled trades areas, but I want to use the skilled trades for machine and tool build programs; not for machine and tool maintenance or repair. The essential core of a "do it right" approach is to have people trained in problem solving techniques and statistical analysis. Trained people will react quickly, logically, and correctly to problems and will have the means (skills) to communicate with their machines thereby avoiding product quality problems and losses in productivity.

FINAL COMMENTS

U.S. industry can do almost anything if we put our minds to it. Basically, American managers must have greater confidence in the intelligence of employees and take advantage of their ingenuity and individualism. I believe the American people can and will accept personal responsibility for improving product quality and achieving greater productivity. However, management must provide the leadership, therefore, by providing adequate facilities, tools, and training; and asking for help in achieving these worthwhile common objectives.

The Japanese have taken about 30 years to reach their current level of management sophistication and leadership. I believe, if we get going, we will be able to compete effectively with the Japanese in 10 years and if we went at it as if the survival of American business was our motivation we can do it in 5 years.

Representative REUSS. Thank you, very much. Mr. Wada, please proceed.

STATEMENT OF SADAMI "CHRIS" WADA, ASSISTANT VICE PRESIDENT, SONY CORP. OF AMERICA, NEW YORK, N.Y.

Mr. WADA. Mr. Chairman, Sony Corp. of America really appreciates the honor to appear at this hearing. We would like to make our contribution the best we can.

I would like to speak about some of the key points that I think are very important.

We believe productivity and quality are the responsibility mainly of management. It's management that has to make the initiative to see to it that we have good quality and good productivity.

Today, I would like to speak from our experiences that we have gained at our two plants in the United States of America. We have a plant in San Diego where we have 1,700 people manufacturing color televisions, and we have a tape plant at Dothan, Ala., where we have 1,500 American people. The Japanese are very minimal. But we make good products of high quality at competitive productivity and we can and we are competing not only in the U.S. market, but in Canada, good products of high quality at competitive productivity and we compete with the European and Japanese manufacturers overseas.

Our people are very proud and are glad about their contribution to the trade balance of the United States by exporting their products.

You can raise capital for your machines, automated robots, computer-controlled robots. You can have technology. You can have all the schematics you want. But without dedication of the people, you will not have quality nor productivity, and you cannot buy dedication from people. That is something we have to earn.

How can you receive support beyond the call of duty or beyond the call of contract from workers? If you have an adversial confrontation attitude you cannot have it. We believe we must have common goals and common pride between management and employees. Once you have dedication of your employees, they will help you solve problems. They will find for you more efficient manufacturing methods. They will cut out waste to maximize output.

In San Diego, where we had bad business slowdown several years ago, we even had to stop manufacturing color televisions because we had no more space to store color televisions. But we did not lay off a single person. Our determination not to lay off people at our San Diego plant because the symbol of our management-employee relationship.

We call our company Sony family. It's like parents or a father and children.

One of our Dothan employees who has her daughter, her son-in-law and sister working at the Dothan plant says, "If they have any regrets I have not heard about them."

Another one says, "I feel more respected here, more important. They talk about the Sony family and all that: listen. I believe in the Sony family."

In Japan, we use a family name to call each other, but at our San Diego plant, our Japanese No. 2 man memorized the first names of employees, several hundreds of them. He walks around the plant chatting with people and he does not have the austere, stiff formality of a typical Japanese of higher position.

In the San Diego plant, we built up this common goal and common pride. Our assembly line No. 2 a few years ago, broke the record. Products they completed from their assembly line had no major defects for 200 days. This was recordbreaking. We had a company-wide celebration, because we believe it is important when we have something we can be proud of, we should be proud of it. We celebrated. We have about four or five celebrations in a year at our plant.

People know quality is important. We believe screening by rejection only increases costs. Therefore, efforts must be made to manufacture right the first time. This is the real quality control.

We also emphasize housekeeping. How could you expect a quality product out of a sloppy, dirty workplace? We emphasize this with also suppliers and vendors, to see that they also follow the same principle.

At San Diego, we also encourage the people to be mindful of—particularly when they are completing their job and leaving their place of work—making sure bolting is tight, making sure whatever has to go in boxes are in the boxes, because if you stop in the middle, when you come back, you tend to forget.

In order to encourage a good atmosphere, we award people who have good attendance. Attendance is very important. We award people who have good attendance, and we show pictures of those who have maintained perfect attendance in our company newspaper. They get a pat on the shoulders and a shake of hands, and this would all help in building a healthy atmosphere.

We emphasize education. Even a person working on an assembly line should know how the small work she does relates to the total. Educated employees are the greatest asset.

We also emphasize communication. At the Dothan plant, we have a monthly meeting for three shifts—three monthly meetings. We speak to them of sales problems, something about what the parent company does in Japan, like joint ventures. Employees like to know what the parent company does in Japan. We sell Everyready batteries through Union Carbide joint venture, music through joint venture with CBS and life insurance policies through joint venture with Prudential. All of those joint ventures are not directly related to their work, but they want to know so that they can be proud of it. That's very important.

We also have hot lines. Any employee can, at the Dothan plant, dial 300, and at San Diego, dial 600, to leave questions, and that will be answered within a few days. The open communication is very important.

Speaking about quality control, we practiced what we learned from Dr. Deming and Dr. Juran. They came to teach in Japan in 1950, and 1954. Now this Nation has tremendous resources, brainpower, capital, and ingenuity, is now gearing up with quality control from Dr. Deming and Dr. Juran, and if this country stands up with the zeal and dedication that won the Olympic gold medals, there is nothing that you cannot capture.

I read in a book something that surprised me, and I should not probably have been surprised. It said, "Along with wages and job security, we have always thought it equally important that the company respect the dignity of its employees. People, as I have said, occupy more management time than our products." Reading from a 1963 book by Tom Watson, Jr., of IBM.

You have quality control. You have a philosophy that places the greatest emphasis upon people. If you approach the issue with the zeal and dedication that won the United States of America the gold medals from the Olympics, there is nothing that you cannot lick. Thank you very much.

[The prepared statement of Mr. Wada follows:]

PREPARED STATEMENT OF SADAMI "CHRIS" WADA

Productivity Per Sony's Experiences

Chairman Henry S. Reuss and members of the Joint Economic Committee, Sony Corporation of America appreciates this honor through your invitation to appear at this hearing. Sony would like to make our contribution to your hearing the best we can.

PREFACE

We are honored to make report to you that we have excellent productivity at our manufacturing plants in San Diego, California and Dothan, Alabama, where we manufacture color televisions and recording cassette tapes respectively.

Through this opportunity, we hope we can show how people-oriented management is the key to our productivity. In any manufacturing, you have capital and people. You can have the best modern mechanics but if your people are not interested, motivated or dedicated to produce efficiently products of reliable quality, you do not have good productivity. The key is that you can buy machines, but you must earn dedication and motivation from your people. Also quality and productivity are inseparable and further, that all these mainly depend upon management. Management must take an initiative in these areas to achieve higher quality and productivity. In this area, we believe Sony can make contribution to your hearing today.

1. Quality and Productivity Depend Upon the Management.—Good quality control results in good productivity. There must be a reliable quality control system. With such a quality control system, we must see to it that neither unnecessarily higher or lower quality material or parts than the desired quality standard will be put into production. Unnecessarily higher quality input will increase the cost while lower quality input will create waste, both of which result in bad productivity. Quality control and productivity cannot be separated. This is especially true when we are discussing competitiveness. You must deliver high quality at competitive price.

At Sony, the responsibility for productivity is believed to rest with the management for the most part. Productivity and quality have no nationality. U.S.-made products in California and in Alabama by Sony favorably compete with Sony's made-in-Japan products. It is good business for us to manufacture high quality Trinitron color televisions in San Diego, California, not only to sell in the U.S. but also to export to Canada, Latin America and other parts of the world. It is also good business for us to manufacture video cassettes and audio cassettes with high technology in Dothan, Alabama, for the domestic as well as international markets including Canada, Europe and Mid East countries.

In those overseas markets, made-in-U.S. Sony products compete with products by world's leading manufacturers and win the market competition. Those Sony products from California and Alabama win over the competition because they have good quality made with competitive productivity by American workers.

We at Sony believe the productivity and the quality are the responsibility mainly of the management. It is up to management to take an initiative to achieve these through its approach to the employees. If one cannot attain dedication and genuine interest of employees, you don't have quality or productivity. Sony has been fortunate to receive dedication from employees and I would like to discuss it in detail.

2. San Diego Plant and Dothan Plant.—At the San Diego Plant, we have over 1,700 people making color televisions from even picture tubes. At the Dothan Plant, we have approximately 1,500 people making video and audio cassette tapes. At both plants, we have a very small number of Japanese personnel; at the San Diego Plant there are about 40 or less than 3 percent Japanese personnel and only a few permanently stationed Japanese with several visiting transient personnel from Japan at the Dothan Plant, which make it less than 1 percent. The combined amount of exports to Canada, South America, Europe, Mid East and even to Japan, for this year will be $100,000,000. This contribution to the U.S. trade balance is possible because of quality and productivity at those plants make our products highly competitive.

The 4,800 employees of Sony Corporation of America are very proud of its contribution to the U.S. in her international trade balance. At these plants, we have very successful experiences in terms of relationship with the people, quality of products and their total productivity. Certainly we have very high manufacturing technology and equipment of the highest quality in these places, but without the kind of dedication we have with our employees, we would not have our high quality and competitive productivity. Through our experiences with them, we say that we have earned it. We may say that they reciprocated our sincere and dedicated interest in their welfare with their dedication.

This exchange of dedication has been going on since founding of the two plants in the atmosphere of everyone finding pride in the quality of Sony products. In this atmosphere quality and productivity become the basis for our pride All human beings need basis for pride. We do not live for bread alone. We do not live for adversarial confrontation either. We have something else at our plants in San Diego and Dothan.

3. Dedication is Most Critical.—You can raise capital for your machines, automated control system or computer-controlled robots. You can have technology purchased or licensed with all documents and schematics you want, but, without people's dedication, there will not be quality nor productivity. You cannot buy dedication from people. I mean true and sincere dedication. Only genuine dedication by management to the people win their dedication. This is true with your workers in the plant as well as with suppliers of material or parts. How can you receive support beyond the call of duty or beyond the call of contract.

If the relationship is one of those adversarial confrontation attitude, you will have no high quality or high productivity. You will have continuing problems in production and will not get near the international competitiveness in the keenly competing market. It seems to me that this adversarial confrontation attitude is getting very popular among various people's relationships, such as between management and employees, government and people, parents and children, teachers and students. It is important that we have a common goal and a common pride that will help us override conflict of interest. Management must show and prove their dedication to the people at the same time giving them pride for the common goal. Once you have dedication of your employees, they will help you solve problems. They will find for you more efficient manufacturing methods. They will cut out waste to maximize output. Concern for quality and productivity will become mutual interest for common pride. Therefore, it is highly important that we earn their dedication. One important evidence of our dedication to employees is "no layoff" that we have maintained at our plants, particularly the no layoff we have maintained since the opening in 1972 of the San Diego Plant.

4. No Layoff.—When I first heard about the common American way of hiring and laying off so easily, I thought it was very convenient for business. Now I know why some American companies do not receive dedication from their employees usually with results in poor quality and bad productivity.

Neither at San Diego television plant nor at the Dothan's tape plant have we laid off our people. We are proud of it. We hear and read about American companies laying off people so readily after a week or so of bad business. When railroads or ports are struck, many companies lay off people so readily. You say the Government takes care of them, but how could you do this? What happens to their feelings—their self esteem?

If you pursue constant optimum operations and, as a result, cannot care for your people, you will be dismissing your employees as often as your profitability dips. The uncertainty caused by such roller-coaster-type, personnel-management policy will, unquestionably affect adversely the productivity and equanimity of your people.

At the San Diego plant during business downturn, rather than layoff, we create work opportunities within, such as cleaning machines and equipment or even painting the plant. When we had a real business slowdown several years ago, we even had to stop manufacturing color televisions as we had no more storage to keep them. We thought of rearranging work shifts since we had three operations at our picture tube plant, but we did not do this as such a change of shift would create an inconvenience for their private lives, such as the arrangement of babysitters and the like. As a result, we created other work opportunities, such as cleaning and painting of plants that were in need of refurbishing.

Our people understand our sincere and genuine concern and our dedication to them in trying to avoid any layoffs to the extent possible. It is a matter of strong determination on the part of the management. In this process, we earned their trust and dedication. Our determination not to lay off people at our San Diego plant became the symbol of our management-employee relationship at Sony.

5. Sony Family.—We call our company and our association Sony Family. By this concept, you are trusted and respected as a member of the Sony Family. You are not a number or a computer card. Supervisors and managers pay utmost care and attention to their people. Individual preference is respected as a member of the Sony Family and an individual is never treated like a piece of machinery. Therefore, once hired, people generally stay with Sony, and at the San Diego plant except for reasons of marriage or transfer of military spouses, they do not leave Sony. In Alabama, the Sony plant is so popular, we constantly have so many people wanting to have jobs with us. Since we started our magnetic tape plant in 1977, 35,000 applications have been received for the current 1,500 jobs. One of the Dothan employees says, she has gotten her daughter on, and her son-in-law and her sister, too. She says, "If they have any regrets, I just haven't

heard about them." Another, who operates a special machine that Sony developed for making broadcast tape, says, "I feel more respected here, more important." She, also says, "They talk about the Sony family and all that. Listen, I believe in the Sony family."

At the San Diego plant, one of the supervisors who was promoted internally, as most of them have been, from line work in response to a question; "What impresses you the most about working for Sony?" says, "The top management people. When I came to work here, they would say 'Hi' and then 'How are you?' They really make you feel at home. The first day I was here, I knew this was really like a family. We all can help others."

Neither at San Diego nor at Dothan, we find any job-hopping to other companies. At the San Diego plant, our popular and well-liked No. 2 man, Mike Morimoto, our Vice President, is so dedicated to this concept that he can call several hundreds of the Sony Family members by their first names. He mixes actively and jokes with them, all the while keeping his door open to our people at the plant. He certainly does not affect any of the stiff and auster formality that we regularly find, in fact, expect with Japanese in high positions. In Japan, we call each other by family names and we find it uncomfortable in the beginning to use first names. It really takes some time to get used to this Western custom. He relates directly and encourages his supervisors and managers to do the same to fellow workers as members of the Sony Family in the spirit beyond the employment contract.

People are people wherever you go and if you make a sincere effort to communicate with them as a concerned individual, they will respond with just as much sincerity and human interest. Who would really like to be regarded as a function of production or mere cog in an assembly line? Time spent on the job is an important and substantial part of our life; in fact, a half or more of our daily waking hours. We firmly believe no one would enjoy isolation or lack of managerial concern, no matter how efficient the operation or plantsite.

In this regard, both at San Diego and Dothan, we make it a matter of great concern for the whole family of Sony, to constantly demonstrate the human factor and personal aspirations as well as self-esteem of our Sony family members. Here the most important concept at both plants, as well as throughout the entire Sony is Sony family.

6. Pride in Quality Rather Than in Volume.—If you had walked through our San Diego plant for color television a few years ago, you would have seen a very conspicuous large sign reading: "This is it. Assembly Line No. 2. 200 days without a major defect." Achieving 100 days is a very difficult task. This Assembly Line No. 2 at San Diego holds the Sony worldwide record for quality.

Sony is built upon research and quality. Therefore, our staff visits suppliers of parts and components to make sure they have right systems for manufacturing parts and components that fall into the required quality standard. Screening by rejection only increases cost, therefore, efforts must be made to manufacture right the first time. This is the real quality control. You must be able to attain desired level of quality with the least waste. So we have very close communication with suppliers.

In addition to our cooperative efforts with suppliers, we still have many quality check points in manufacturing including severe aging test. Inspection, of course, is most severe. We make quality the name of the game for Sony. We must have truly interested and dedicated people. We must have people who take personal pride in the quality of products we make.

Our manager, supervisors and foremen are thoroughly educated in the policy that quality is the very life of Sony products. They were brought to our factories in Japan to experience themselves how much effort goes into keeping our quality. They are also trained in the field to understand how important quality is for sales and for after-sales service.

Another important concept is housekeeping. At San Diego, this principle of housekeeping governs the task of keeping the work site neat and well arranged in the belief that quality products cannot be expected from sloppy, dirty work site. Its side effect is also important. Our workers begin to regard his workshop like his own home or room and such an attitude tends to boost the morale and productivity further more. We educate also our suppliers on the merit of good housekeeping.

We also emphasize completing the job before leaving his workshop. There was a habit of stopping work in the middle of doing something at the bell for

break or at the end of the day's work. This habit has been changed to complete the work before leaving. This greatly contributed to the improvement of quality.

Our people at San Diego are happy when they see Sony Trinitron color television sets, highly priced for first rate quality, prominently displayed in the premium place of major stores, attracting sophisticated buyers who demand top quality. They realize this is the value of quality. Pride grows naturally with us.

We give special recognition to quality achievements by awards and plantwide celebrations. Sony San Diego and Sony at Dothan make it their commitment to keep the quality of their products high. At Sony San Diego they compete, inhouse, among lines and various production units. The result is the consistently high quality of our products.

7. Morale is High by Education, Recognition, and Direct Communication.— I have some feedback from an independent outside researcher who reported that employees at the Sony San Diego plant, on the whole, are better educated than those at other television producers. Moreover, they show a thirst for variety and enjoy changing positions in accord with their preference. Automatic and systematic rotation is avoided and individual preference is respected. This policy enriches knowledge, skill and broadens the competence of our people and results in their deeper and wider understanding and commitment to our entire operation. Basically, this is the respect to the human dignity.

Our assembly lines at San Diego demonstrate unhurried efficiency. This is because the lines move slowly enough to allow each worker to perform an average of ten or so operations. This measured speed of our assembly lines is very important to morale. When you move the line fast, workers feel hurried and each worker will have less operations in a more routine manner. Interest in work will decrease and morale will go down. Workers will be anxious to see the line come to a stop. Their sole interest tends to become volume-oriented. You may achieve volume but not high quality. You cannot have both.

We also believe good attendance is important and it is the result of conscious efforts, therefore, it deserves recognition. We award perfect attendance at both San Diego and Dothan. In San Diego, we announce names in our Sony NewsBoy with their smiling pictures holding their awards. Our recent Sony NewsBoy listed one individual for 60 months or five years of perfect attendance, another for 57 months, another for 42 months, another for 36 months or three years and so on. Their pictures with big smiles win many pats on their shoulders and many congratulatory handshakes. Even three months of perfect attendance wins awards. This builds excellent healthy climate for higher morale, leading to greater quality achievement and better productivity.

At the Dothan plant for video cassette and audio cassette with magnetic recording tapes, they hold monthly meeting with all employees. Since we have three shifts, we hold three meetings at which everyone attends with no exceptions. It runs about one hour. Their top management reports to them all about sales, production, problems, new developments, new planning, and any other related matters. All promotions are announced at this monthly general meeting and those being promoted from one level to another are called forward for recognition. The way we do this is very sincere and we are all happy about these things. We also make it a point that at these meetings, one manager gives his presentation on quality control or any suitable subject to his fellow workers. This meeting strengthens our united spirit and keeps up our morale.

At the Dothan plant, we also have what we call Round Meeting. It is a monthly meeting of top management and twenty workers selected at random. No supervisors or managers of these twenty are present because the whole purpose is for the top management to find out what they must do to make their place of work the most pleasant. The communication is literally direct and the top management is placing themselves in the position where no excuse is possible. Problems and questions take the least amount of time to find the answers. Naturally, therefore, morale is high and all workers are interested in improving their operation together with the top management.

At San Diego, Mike Morimoto, No. 2 man, has an open-door policy and anyone can go through his door for quick and immediate answer for his or her questions. At San Diego no one feels uncomfortable talking to this No. 2 man and that is his valuable asset. A certain professor of Stanford University, who has studied Sony's operation extensively, says, "That man is a genius. He is the finest example of what I call an 'integrator' necessary for a company to relate Japanese traditions and management to American ideas." He has created our San Diego style

management, which is not Japanese management style nor American management style. Sony creates the style of management best suitable to each case and location. But, regardless of the style, Sony has sincere and genuine concern for the best of the people we work with. We are highly people-oriented at Sony.

Because our supervisors have mostly been promoted internally from line work, first to a lead position and then to such a supervisory position, they are highly interested to look after their people. They very well know from their experiences at lines that only when people have their people's problems properly solved can they have the quality or the volume.

This particular supervisor, whom I quote here, came to San Diego plant after her sister told her how nice Sony was. She says, "Yes, it (meaning being a supervisor) is at timts very hard. You always worry about quality and quantity, but most of all you worry about the people, how they react." You can see how we are people-oriented from top to bottom. We all like it and want to keep it that way.

Because we value people most, we do many things in our effort to reach them and to hear their problems. In this effort, at both San Diego and Dothan, we have our hot line. In San Diego, you dial 600 and in Dothan 300. Both are hot line numbers and get the quickest answers for your questions. The recording is checked every day by the Personnel Department and the employees so communicating receive their answers within a few days. If the message is anonymous, the company newspaper, Sony NewsBoy in San Diego and Playback in Dothan, will carry the answers. Our employees are very pleased with this. This once again shows the company's open attitude and eagerness to communicate with everyone in the Sony family.

8. Twentieth Anniversary With Emphasis on People.—Our people-oriented policy received the best ovation from our employees at the Twentieth Anniversary celebration. On October 3rd, 700 employees in the New York area, including everyone from sales, shipping and receiving, servicing and all other departments, gathered at the Plaza Hotel's Grand Ballroom and had the best food and excellent wine. At that celebration, what was received with the most enthusiastic ovation was that we had two people of no executive position, who had been with us with true dedication over the twenty years, one working in the shipping and receiving department and the other in administration, up on the dais with our Chairman from Sony, Japan, while the presidents of our sales companies as well as our corporate senior vice president was on the floor and not on the dais. This is nothing but an expression of our policy and belief.

To celebrate this Twentieth Anniversay of Sony Corporation of America, our Chairman from Japan flew with his wife to Dothan, Alabama. In the open field next to our tape plant, we pitched a huge tent on the ground and prepared Hawaiian dishes and had Hawaiian music. So far this sounds, I am sure, great. But, our Chairman and his wife, who had been going place after place for the celebration at our various locations in the U.S., had to repeat this Hawaiian-style anniversary dinner at 11 a.m., at 7 p.m. and at last at 3 a.m. with the same food and the same music. We suggested to our Chairman to take a rest at the hotel for the third shift, but we were severely criticized. Our Chairman and his wife came to celebrate the Twentieth Anniversary with those who dedicated themselves for the success of the Sony family and they regarded the late shift more important to their dedication and contribution.

At the 3 a.m., third-shift celebration, when our Chairman and his wife were naturally very tired, even though they showed no sign of it, one of the employees asked the Chairman's wife to dance with him. It was on the hardened ground, but with a big smile she accepted and danced with him to the greatest ovation by the three hundred people there. This shows what Sony is. What is important in Sony, is clearly shown through those events at our Twentieth Anniversary celebrations.

9. Quality Control.—Dr. W. E. Deming came from your country to Japan in 1950 to hold his first and famous "8-Day Quality Control Seminar" and he opened a new era in quality control in Japan by attracting the attention of Japanese engineers to the statistical method of quality control. He was followed by the visit of Dr. J. M. Juran in July, 1954, who lectured at "QC Management Seminar." They brought to us from the U.S. the technique and concept of quality control. We developed these techniques and concept into "Foremen's Textbook on Quality Control A and B" and these were used at workshop level. This was published in 1960 and 500,000 copies were sold up to 1979 over the two decades. Many articles were published in many magazines as well as many books on quality control in

Japan. Japan learned from the U.S. and used it to the maximum, while, for some reason, you did not select to apply their teachings. We had all the reasons to learn quickly to rebuild our war-devastated country. We had no luxury to leisurely think about what to do. Our survival depended upon it.

After the World War II, your nation had a tremendous appetite for everything. Soldiers returned to home and factories were busy changing war-time production to peace-time production. You were just busy turning out products to satisfy needs. Of course, you had good products. We all marvelled at your products that were imported in Japan for use by limited wealthy people. How the average Japanese envied those who could afford American consumer goods. They were so attractive in design and strong and durable. In comparison, our domestic products looked so clumsy, cheap and fragile. Your products had the best quality and commanded high premium prices which we gladly paid when we could afford. You did not have to bother with statistical quality control or total quality control. From a business point of view, you had no need to spend more money. It would have been even a bad business judgment to do so at that time. But today, over the years, the United States has lost its leadership in productivity growth and quality. However, this nation of tremendous resources in raw material, brain power, capital and ingenuity is now gearing up with Dr. Deming and Dr. Juran to apply quality control through thousands of quality circles throughout the nation's factories. Most of the major corporations such as Westinghouse, GTE, Union Carbide, Xerox annd so on have their own versions of QC circles and they are reporting success in quality improvement and cost savings. They are all doing it with zeal. With the zeal and dedication that won Olympic gold medals, there is nothing that you cannot capture.

10. Good Management Has No Nationality.—Japan's lifetime employment or no-layoff system as the basis of management is an expression of commitment from management to the security and welfare of employees. We speak of this as a unique Japanese management style with great emphasis upon people.

But here I would like to quote from a book published in 1963 just skipping the name of the company, two sentences that I think reveals the heart of its management philosophy. "Along with wages and job security, we have always thought it equally important that the company respect the dignity of its employees. People, as I have said, occupy more—management time than our products."

It was not Sony. It was not a statement of any Japanese company. It was a statement of Tom Watson, Jr., then chairman of IBM. This is the same basic principle all successful corporations share beyond the boundaries of nations. Internal close and strong partnership of management and employees through basic ideas about people make the company strong in external competition. If you have internal weakness and internal conflict, you may get by when times are easy and slow, but not when there is keen and severe competition. I know there are many U.S. corporations that stand on the same principle as IBM.

11. Conclusion.—I would like to list recommendations below to increase quality and productivity.

(1) Take personnel expenses as fixed cost, rather than variable cost.
(2) Educate workers at all levels.
(3) Let every worker be conscious of quality.
(4) Let every worker have the sense of participation.
(5) Try to increase the flow of communication.
(6) Show the direction the company is taking towards the future.
(7) Make generalist at every level.
(8) Understand that in the total process, productivity is not only a matter of efficiency but also of human nature.

Once again, I would like to repeat that quality and productivity are inseparable and that they are mainly responsibilities of the management, and that even if you secure needed capital, unless you have the heart of the people, you cannot make it. Adversarial confrontation attitude is the worst enemy. You must have people-oriented management, even at the cost of dividends, bonuses and executive salaries. Management must have courage and determination for it. Thank you.

Representative REUSS. Thank you all, gentlemen.

You have stressed different things. The Hayes-Abernathy team discussed the fact that a lot of American managers take a very short-

term rather than a long-term look, that a lot of other managers apparently are more concerned about financial acquisition than they are about products. Mr. Lynas stressed quality, and Mr. Wada stressed human relations, the absence of layoffs, and the family concept. And, in a sense, you are all talking about the same thing.

Let me ask an overall question. What can be done about the inferior American management performance on productivity? That's what we are talking about today. We all agree that many other factors have to be addressed, but today we are talking about management. Do we have to say, well, this is something that has to be left entirely to management? Or is there something that Government can do, that the Joint Economic Committee can do?

I would welcome any thoughts, starting with Mr. Wada.

Mr. WADA. I feel a change of the value system must be called for. That's not by law, but by the leadership. If we have a common goal and common determination like we had for the Olympic Games, we could stop job hopping—3 years, then go to another company for more money. That should be looked upon as inferior to the value of common pride, common goal of the country. So I think, more than law, it's leadership. They must speak so that people will begin to have a little different value.

Representative REUSS. Leadership by whom?

Mr. WADA. Well, I think the President, Senators, assemblymen, Governors, and scholars. I think they should speak those things with more emphasis so people begin to change their value. Money should not be the best value. You can't do this by law. I think speaking to people so that people will begin to change their thinking. We must change the thinking of the people on the value system.

I'm sorry. I cannot give you a concrete method, but I think it's very important that we change some of the value system.

Representative REUSS. All right. Mr. Lynas.

Mr. LYNAS. I think one of the important areas is a significant increase in emphasis on technical education. I think that the Government, industry, local educational system, and so on, can undertake an improvement on the technical level and increase the ability of our young people to go into technical training. I think, if you look at, let's say, the buses that are on the road or the elevators or the transporters at the airports, you will find a number of them down. We have consistent problems, not because the basic design isn't good or acceptable or reliable, but the ability to maintain its repeatability or reliability over its extended life is not there so the asset is underutilized. If we don't technically maintain an asset, it will have a very short life and low productivity.

Technical education within industry is somewhat controlled and rigid. We don't allow people to progressively learn because they want to learn, because it's costly. Our high schools and our elementary schools are general in nature. Then they go on into college to obtain engineering degrees. A weak link in our support of productivity rests in the technical area.

Representative REUSS. Well, let me tarry awhile there. Are you an engineer?

Mr. LYNAS. I am.

Representative REUSS. Mechanical?

Mr. LYNAS. Electrical and industrial.

Representative REUSS. What's the current situation in American universities and colleges of engineering? Is there a surplus of applicants? A dearth of applicants? I am generally aware of the fact that we have been graduating oodles of lawyers—I happen to be one—and MBA types, but that our engineering graduates have either absolutely or relatively declined. Can you answer that?

Mr. LYNAS. I can't give you an answer or respond to that in specific numbers. But what I'm searching for is the electrician, the plumber, the maintenance man, the millwright, the ability of employees within the work place area to have those skills. The only way they can have them is to have the educational and technical training.

Mr. HAYES. Mr. Chairman, may I expand on that answer?

Representative REUSS. Yes.

Mr. HAYES. I think Mr. Lynas and I both have a similar conclusion on the basis of our observations of Japanese factories. In my own case, I can draw on my observations of German factories as well. We find in both Japanese and German factories a much greater prevalence of what I think Mr. Lynas calls "low-level engineering," the kind of engineering that comes out of technical schools, not graduate schools of engineering. And this is provided in Germany, not only by company programs, but also by government-sponsored vocational education programs that try to encourage that low-level kind of engineering. In Japanese companies it tends to be much more the responsibility of the company itself. Over a rather long time period, 6 to 8 years normally, after somebody joins a company considerable time is spent acquiring those kinds of skills in both company-sponsored and outside programs. We find a lack of this kind of low-level vocational training in American companies.

Representative REUSS. We have, of course, in this country, a highly touted system of vocational education. What's the trouble there? Are we teaching the wrong thing?

Mr. LYNAS. I think it takes, for a good electrician or plumber, 6 to 8 years of training on the job and within industry. What he gets from vocational education within our schools is very cursory in nature, which starts him off, but it certainly is not substantial enough to allow him to do the jobs that are required on high technology equipment.

Representative REUSS. I want to be sure what we are hearing here. You fault American vocational education.

Mr. LYNAS. Yes.

Representative REUSS. You think vocational education is misrepresenting what they's doing.

Mr. LYNAS. I'm not assigning the responsibility totally to them. I'm also saying American industry must undertake, as the Japanese have, significantly increased technical training of people.

Mr. HAYES. Mr. Chairman, may I add to that?

Representative REUSS. Yes.

Mr. HAYES. I think there's a very subtle difference. I don't think we're faulting the quality of American vocational education. In my opinion, the American companies I have visited and talked to man-

agers about, tend to rely exclusively on the external private education system, if you will, for this kind of training. Companies in other countries, on the other hand, tend to encourage it much more directly through sponsoring and developing vocational education programs themselves. Here we sort of expect people to have those skills, and we either get them out of the school systems or we hire people from other companies who provide that kind of education. But companies themselves do not feel the responsibility for educating their workers in those kinds of skills, or do not encourage it to the extent, I should say, that they do it in other countries.

Representative REUSS. Well, local boards of education typically have a big industry representation and a big labor representation. What's wrong here? What happens in the German or French high speed vocational education that we're missing? If we know; I don't.

Mr. LYNAS. I believe we have centralization of skilled trades, and we have production workers. A production worker is to do the simplified task and call upon the skilled tradesman. In Japan, 80 percent of the skilled trades work is done by the people who are operating the machines, the tools, and so on, because they have been technically trained to do so. So that you have a broad base of technical training across all of the employees of the company; it is not centralized and controlled by job classifications. It is not centralized and called upon only when something is broken down. The people of the organization really have the capability. As an example, in a plant of 300 people, we will have half of an actual electrician, because the employees can do those kinds of jobs requiring simple electrical repair at the workplace to keep the machines and equipment going. And it is quite a significant difference of technical training of people.

Representative REUSS. Maybe that is the trouble. What you are saying is, it's great to have a handy millwright around, a fellow who can fix anything, and hope he will come when you call for him, but that he probably is the only person around, who has actually had a real vocational education. The others, such as the assembly line workers, have on-the-job training, and they know how to operate the particular machine they're working with, but if something goes wrong with that, they have to wait for the millwright. Whereas, if I heard you right, in Japan and in other countries, in Europe, for example, the millwright expertness is more broadly shared. Well, that suggests that we are sending too many people to regular high school and too few people to vocational school, doesn't it?

Mr. LYNAS. I'm not sure as to how we should increase the technical training of our people. I'm not in a position to give you an answer, but I do know it should be done. It's an undertaking that management of companies should put high on their priority list.

Mr. ABERNATHY. Mr. Chairman, could I add something to that?

Representative REUSS. Yes, please.

Mr. ABERNATHY. I think the problem is not entirely with low level. I think also the universities have problems on this line. And joint industry-government-university R. & D. programs, particularly, industry-university programs could help a great deal to bring relevance to the work that's done in universities and in engineering school. It could increase the level of empiricism. I think we tend to be

theoretical, much more theoretical. I recall a German engineer I talked with who trained in East Germany and said how delightful it was, because they had two engines—he was a automotive engineer—two engines to experiment with per person. I doubt if there are many schools in this country that have any engines to experiment with, as it were. It's all done theoretically.

I think there's a need for capital equipment, which the universities can't afford for more empirical work, in many cases. I think a great deal could be done with university-industry R. & D. programs. We have a biogenetic program over a long period at Harvard. MIT has comparable programs. But it's my feeling that a lot of universities don't have this opportunity for practical relevance meshed in with academic training, which I think would produce somewhat closer to the gap that we are talking about.

We certainly need theoreticians, but I think much of the training is too theoretical.

Representative REUSS. Mr. Lynas, you indicated that for American industry to make some of the changes that you're talking about, using some ideas that we may glean from our European or Japanese friends and some of the ideas that TRW is starting to work on, would take about 10 years to achieve. I think that was your timespan.

Well, let me now turn to Mr. Hayes and Mr. Abernathy, who have said the timespan for American managers, unfortunately, is much shorter, they think, in terms of a year or two, rather than of a 10 year possible active span for the top manager. This sounds like a rather unpromising situation. It takes 10 years to change around, but nobody is willing to think about things that take as long as 10 years.

How are we going to overcome this?

Mr. HAYES. Well, I think that this short-term orientation of U.S. management is a relatively recent phenomenon. I think if you go back to the study of management practices that characterized U.S. business in the early part of this century, you find a very different kind of orientation—much longer term. So this is not endemic, in my opinion, to the American character. It's something I think we have developed, and we can undevelop it.

I think the strongest way we can undevelop it is by encouraging competition in the United States. I think those industries facing the severest form of threat now from foreign imports, are the ones that essentially have been buffered from competition in the last 20 or 30 years, and have been able to prosper with a very short-term orientation. I think there are very many other industries which have had very much stronger competition, who are not having nearly the problems of, let's say, the U.S. auto manufacturers, the U.S. steel manufacturers, the television manufacturers, and so forth.

So I think one of the things we do is we make companies aware that the issue is not one of return on investment over the short term but of survival over the long term. And I think Congress can actively encourage that kind of competition, and this will encourage American companies to take a different view of their responsibilities to their shareholders.

Mr. ABERNATHY. I don't know the precise ways, the mechanisms. One of my problems is, I am not as familiar nearly as you are, Sen-

ator, with the mechanisms by which this can be achieved. But I think there is reason to have a look at financial institutions and the way they evaluate stocks and emphasize short-run R. & D. I have had some friends which have suggested that—from Wall Street—that the growth of block purchases of stock by institutions have brought more intense scrutiny on short-run returns. I think it would be profitable to examine the financial institutions, perhaps, at some point and see what can be done in that vein to lessen the intense financial short-run pressure which exists and return to an era of the 1950's, in which we were talking about glamour stocks and long-run potential and exorbitant PE ratios, but nevertheless it did provide capital in the 1950's.

I think another area, and again I don't know all the mechanisms, but we have certainly got to have a new bargain between management and labor. We talked in the 1950's about the effort bargain. That's not the kind of bargain we need, which is a very intense act of buying hands and feet and not worrying about the souls of the participants, of the people as real beings.

So I don't know what can be done in the labor-management laws to deal with this, but I think there's probably something that could be done to encourage a new kind of bargaining.

Representative REUSS. This first round of dialog suggests at least a couple of things that I want to pursue. We have now been discussing finance. Earlier I think Mr. Hayes pointed out that a lot of management attention is now distracted from the production of quality goods to finance manipulations, takeovers, conglomerates, et cetera, et cetera.

What was the figure you gave, Mr. Hayes, in which you compared the amounts that were spent on acquisitions, as opposed to the amount that was spent on business fixed investment?

Mr. HAYES. In comparison with R. & D. but I can also talk about fixed investment. The figure I used, in 1979 about $45 billion was spent by American companies in acquiring other companies. In 1980, the estimate that I have was over $50 billion. To put that in perspective, we spent less than $30 billion in 1979 on R. & D. and in 1980, we spent less than $35 billion.

Representative REUSS. How much was spent on business fixed investment?

Mr. HAYES. I have to check my figures to give you an exact—I think it was somewhat less than $170 billion on fixed investment.

Representative REUSS. So we were spending on acquisitions about one-quarter—I'm adding $30 billion and $170 billion—of all that we were spending on R. & D. and capital investment.

Mr. HAYES. Yes.

Representative REUSS. The other day a very distinguished retired Chicago banker, named Gaylord Freedman, who used to be president of, I think it was the First National of Chicago, was interviewed by Leonard Silk of the New York Times, and made the point that the banking community should feel rather bad about diverting as much of America's credit resources as it does to acquisitions and takeovers, instead of to capital investment and R. & D. And he thought that the banks were capable of redemption, and that conceivably the 100 leading bankers of the country might get together and make a concerted attempt to go straight.

Do you think he's got something there and that his proposal should be encouraged?

Mr. HAYES. This is a discussion that a number of us, my colleagues at Harvard and I have been discussing. And I think you can use the old adage that if you laid all the Harvard professors in the world end to end, they still wouldn't reach a conclusion. I don't think that getting people—the bankers, for example—to get together and agree to follow a Boy Scout oath is going to have much impact. I think there might be some things that could be done, however, to discourage less nonproductive investment, and more productive investment.

One way is by changing the double taxation of dividends. Right now there is a disincentive to give money back to shareholders as dividends, rather than to spend that money on buying other companies. If you give it back to shareholders, they will be taxed at rates averaging 40 percent. If you use the money directly, you essentially get the aftertax dollars fully. Reducing the double taxation of dividends, therefore, might focus greater stockholder scrutiny on moves to take money that could be diverted back to shareholders, and use it to purchase other companies.

I think there are measures that can make acquisitions less attractive than other avenues for spending the money that they have available.

Representative REUSS. Can you think of any others?

Mr. HAYES. Others are, I think, to do some of the things that Congress is currently considering, which would be to reduce depreciation lifetimes, so that there are greater incentives to invest in capital equipment. I am very uneasy about the measures I have seen to increase or give rebates of one sort or another for investments spent on R. & D. I think that issue has to be approached much more delicately. I have no recommendations in that regard.

Representative REUSS. You do not favor some sort of an income tax credit for incremental increased R. & D. expenditures?

Mr. HAYES. I think it's terribly difficult to measure increased R. & D. expenditures. I would tend to believe virtue is its own reward in that situation. American companies have to be persuaded, largely under the impetus of advanced technological products from some of our foreign competitors, that R. & D. is not just a nice thing to do—it's an essential thing to do.

Representative REUSS. Incidentally, if any member of the panel has anything to add at any point, please be sure to add it.

Mr. WADA. The education—in Japan, we do not mind the spending of money on educating our employees, and we emphasize it very much. College graduates have opportunities to rotate jobs. He would know accounting, financing, how to supervise assembly line, how to do purchasing. So after 5 to 10 years, he knows the whole operation. And he will stay with us for a lifetime. And institutional memory will stay with a company. So we don't mind educating them. A company spends money on educating employees. At our Dothan and San Diego plants also, we emphasize educating our employees, because they will stay. We educate in mathematics, chemistry, and physics.

My impression of applicants—I do not work in the factory, but I interview—I used to interview people to hire. I think maybe mathe-

matics, chemistry, physics, can be better taught in high school. I think education is very vital for us.

Now in Japan, if a company goes down, and if I have to go and work for another company, in that company, I will be like a second citizen. I will not be in the mainstream. And a very unexpected thing happens. So we stick together very strongly, and like Professor Hayes and Professor Abernathy mentioned, competition in Japan is very keen. And competition also forces us to stick together to strengthen ourselves, look for better educated people, making our examinations very severe.

College graduates submit high school grades, college grades, then take examinations and interviews. Maybe 1 out of 10, or 1 out of 5, passes. It is very keen. Therefore, reputable established corporations have the cream of people educationwise, and leadershipwise. The Japanese Government has probably the best cream of the young college graduates. Corporations in manufacturing with reputations also have the same thing with high school graduates. That is how, with probably competition and education and lifetime employment, we have strong corporations.

So maybe with competition and also emphasis upon long range, maybe not lifetime. I know Professor Ochi wrote a book called "Theory Z," in which he emphasized long range, like emphasized by Hewlett-Packard or IBM or NCR, or any successful American corporations that have almost a similar system like any other successful international company.

Representative REUSS. Let me turn to another subject suggested by some of the comments. You all, on this panel, happen to more or less represent management, and you all have been most noble in not coming here and laying all the blame on labor. Some of you at least have been rather benign toward labor's participation in the slowdown of productivity.

But, so that we may not be accused of overlooking any possible source of increased productivity in the United States, what about labor and specifically about work rules in certain areas which are alleged to interfere with productivity?

Let me again recognize each one of you. Mr. Wada, your plants are not unionized?

Mr. WADA. No.

Representative REUSS. So you don't have any union work rules to gripe about?

Mr. WADA. No. We had votes, and I think they did not want a union, so we don't have unions.

Representative REUSS. And you don't have any work rule problems?

Mr. WADA. No.

Representative REUSS. You have problems, but not work rules?

Mr. WADA. No.

Representative REUSS. Mr. Lynas, your plants, I would imagine, are unionized?

Mr. LYNAS. Some. not too many. TRW has a number of plants that are nonunionized. But I think, when you look at the unions, it's their leadership that I think has to change, and they have got to recognize that the restrictive practices, rules, job classifications, centralization

of trades have got to change. We can't continue to operate under the system that is now predominantly used by American manufacturers.

And I think that any unionized plant and the union leadership are eventually going to face competition from plants that will change toward redirecting skilled trades kinds of jobs to the work area, to the people, improve the quality of work, life of the people who are producing the parts. And that union leadership is going to have to adjust its thinking to relax some of the restrictive practices.

Representative REUSS. Many union leaderships are quite zealous on improving the workplace and housekeeping practices.

Mr. LYNAS. Their conversation to date is dealing with quality circles, quality of work life. But the basic practices upon which there's a limit on the ability to make those type of things most effective are still in place. And I think there has to be a reassessment of management leadership coming from unions.

Representative REUSS. Mr. Hayes, in your answer, if you want to call, also, on your experience overseas and your observations of heavily unionized Germany and the effect there of classifications, work rules, or anything else, you can enlighten us.

Mr. HAYES. Yes. Thank you, Mr. Chairman.

I think that any American who has been to Germany, let's say, and looked at the types of constraints that German managers operate under, will appreciate why German—in fact, most northern European—managers still look to the United States as a bastion of freedom, the land of opportunity, and the land of the lack of constraints, as regards labor-management relationships.

Just to mention some of the things that we discussed in our article, every major decision that involves the work force in Germany must first be discussed by a works council, composed of union members at the plant floor. This council can delay—it cannot yet veto, but it can delay—the implementation of that decision. It can also appeal the decision to the board of directors in the German firm, which is called the supervisory board. Fifty percent of the members of this board, by law, are representative of the labor unions.

Because of social legislation, it is very difficult, almost impossible, to shut down a plant or to lay off workers in Germany. So it's not surprising that German managers look to the United States as a heaven as regards labor-management relationships.

Let me come back though to your original question. Again, I think my observation is that the areas where there have been the greatest excesses on the part of unions in the United States, in terms of work rules and relatively high wages, have been in industries which have been sheltered from vigorous competition: the railroad industry, for example; the steel industry; and the automobile industry. None of the managers in those industries or the labor leadership in those industries felt any constraints upon their activities until these industries came under severe competition. Many of these industries are now—like the steel and automobile industries— under severe competition, and we see very constructive dialogs going on.

So I would say that one of the things Congress can do is to encourage competition in the labor market. I think this will ultimately

tend to bring a degree of reality to labor-management relationships which is sometimes lacking.

Currently, there are a number of laws which either give advantages to union membership, or to unionized companies who are involved in certain types of governmental activities, or which force nonunionized companies to have the same types of wage rates and work rules as unionized companies.

And I think that Congress can also possibly encourage a degree of realism and a sense of understanding about the kinds of problems that can develop if we shelter any industry or any group in our economy against the realities of foreign competition.

Representative REUSS. In that connection, I might ask Mr. Abernathy, who is an automobile student: What do you think of the current newspaper headlines which say that Japan is about to agree to a 3-year cutback on automobile exports to the United States, thus averting congressional horrors?

Mr. ABERNATHY. I think it's perhaps here that my colleague and I diverge. In the first place, I would like to say one of the differences in the German and U.S. unions is that, in German unions there is a strong feeling that they are competing internationally, so they tend to not put up the kinds of barriers to trade or productivity that we often find here. They have the fortress Germany in mind or the fortress Japan, a feeling that they are really fighting against the rest of the world competitively, or competing with the rest of the world.

So, I think there's a difference in the fundamental attitude of the unions. Even though they have a lot of control, I think they also tend to be more responsible in a sort of competitive sense.

I'd also like to emphasize the fact that the concept of an industrywide union may be dysfunctional, because it takes out labor as a competitive factor. It takes out some productivity factors too. The fact that the automobile industry had an industrywide union in which all the companies essentially had the same practices meant that it didn't matter. They passed the costs through to the consumer until foreign competition came in.

So an industrywide union is perhaps one of the things that Professor Hayes is referring to. We must also look to labor practices to see what effect they have on competition. Laws should be examined to see what effect they have on the micro problem that has been defined here.

In respect to trade barriers, my view is that it's going to take 5 years to turn things around. The rate of penetration by the Japanese car manufacturers has been so rapid that some relief was essential to give the industry time to move.

I would not propose trade restraint were it not that the industry is making strides. They're doing something about the problem. Perhaps not like the steel industry, as the auto industry is moving fast in terms of striking a new bargain with the workers. I think they can do it, but I don't think they can do it in 3 years. Without restraint the situation would lead to the demise of Ford, as well as Chrysler.

So I came out on the tariff or temporary voluntary restraint side of the argument.

Representative REUSS. Mr. Wada, you have spoken of your plants in San Diego, which is quite a conservative, retired admiral-dominated

community, and of Dothan, Ala., the very bastion of the right-to-work philosophy. What about coming up to my hometown of Milwaukee, Wis., where we have an extremely skilled labor force—heavily unionized and very much on the ball—and opening a plant up there?

Can we see each other after the hearing and work something out? [Laughter.]

Mr. WADA. I have my good high school buddy, whose name is Mr. Takanaski, and he's in Kikkoman. I was at Playboy Club in Wisconsin when we opened that, but it was a wonderful thing for my friend——

Representative REUSS. I helped them get into Wisconsin, and they are doing wonderfully well. Walworth didn't want them at the start, because they didn't want these foreigners coming in. Now they use local soybeans. People have good jobs at the plant. I think the only Japanese among the 500 employees is your old buddy, who is much beloved, talks to the Rotary Club every other week, whose children are doing fine in school, and that comes from a country where they don't have unions very much.

But I would like to talk to you about coming up to Milwaukee.

Mr. WADA. Thank you very much.

Representative REUSS. Mr. Lynas, you are in a unique position in that your company and you, yourself, operate in Canada, Venezuela, Brazil, Argentina, and Japan in a meaningful way.

Mr. LYNAS. Correct. Yes.

Representative REUSS. And you have been around to all those places and are familiar, to a degree, with them?

Mr. LYNAS. Yes. I think this is my 11th trip to Japan, and I am going again next Friday. I admire how competent they are now and how well they do their job. I visited most of the automobile plants in Japan and supplier plants. Plus, we have three plants in our division. And the experiences that I have are hands on. I have seen their ability to produce and the competence of their engineering capability of putting in place machines, tools, and then producing high quality products because of the technical skills in engineering and capability of their people.

Representative REUSS. Yes, you have given us pretty good vignettes of the basically admirable way things are done in Japan and the improvable way in which we do things here.

What about Canada, Venezuela, Brazil, and Argentina? I am not asking to you be invidious about any of those places, but what can you observe? Sometimes we're surprised, for instance, when it turns out that someplace we have been sneering at does quite good. But tell us about it.

Mr. LYNAS. I think the general manufacturing capability of all parts of the world, including Germany, is one that does not demand the built-in quality in terms of design and process, in terms of repeatability and reliability.

We have a philosophy that allows for reject rates. And then we have methods of sorting with sophisticated machinery and so on.

I think that the United States and Europe are comparable in that regard. I think, obviously, you would expect that Latin America is still not up to the degree of sophistication that we have in terms of some of the machines and equipment and so on.

I think Canada is very comparable to the United States.

Representative REUSS. In its strengths and weaknesses?

Mr. LYNAS. Yes.

Representative REUSS. I would like to clear up in my mind what seemed to be a slight divergence in the testimony of some members in the panel on the effectiveness of worker participation in management decisions. I have the impression from Professor Hayes, that, in Japan, quality and productivity are not very dependent on worker participation.

Mr. HAYES. I don't think I indicated that at all, Mr. Chairman.

Representative REUSS. Straighten me out. That's why I ask.

Mr. HAYES. Let me just say, attaching this to the previous question, I think that well-run manufacturing plants are remarkably similar around the world. If you go into a well-run German plant or a European plant, it looks very similar to a well-run Japanese plant or a well-run plant in the United States. They tend to be clean, they tend to have an emphasis on quality, they tend to have good morale and they tend to have, I think, most important, getting down to the subject of your question, good communication between workers and management.

I think worker participation is something that comes after good communication is established in the manufacturing establishment; good communication not only between workers and foremen and other first-level supervisors, but good communication between all levels of managers, all specialists within an organization.

I think many American companies systematically, through a long process that is easy to track but more difficult to explain, have tended to erect barriers against communication within plants. For example, we talked earlier about the lack of low level education, vocational education of workers. The problem is not that the vocational workers who have undergone vocational training aren't good. The technicians we have are very good. The difference is that we only expect 10 to 20 percent of our workers to have that kind of training, where I would say in Japan and Germany the figure is more like 80 percent have that kind of training.

In my opinion, we have tended to separate knowledge workers from manual workers. There is a large percentage of our workers who are simply expected to follow instructions, and a much smaller percentage who are expected to give instructions. Now, we have done this by limiting vocational training, by specializing workers, and I think also importantly, by separating workers. We have tended to take our skilled experts, our engineers, away from the workplace where they have direct involvement in what's going on, and put them into specialized departments often far removed from the factories.

One of the things that I see in almost every well-run plant around the world is engineering groups which are right there on the factory floor, who are heavily involved with what's going on and communicating directly with the workers. So I think that before we can expect real participation from workers, we first have to educate them so they can make a contribution. And second, we have to set up mechanisms that make it easier for them to participate and communicate effectively in the decisions that are going on.

Representative REUSS. I am glad you straightened me out. Then I think it is the testimony of all witnesses that maximum worker-management participation, communication, and cooperation is a good thing and an important part of the total productivity package.

Mr. WADA. Yes.

Mr. LYNAS. Yes, very much so.

Mr. ABERNATHY. Yes.

Mr. HAYES. Yes.

Representative REUSS. Mr. Lynas, you have told us in a very fascinating way about what your company, TRW, is starting to do about quality improvement programs. Where would other American industries go to get some guidance in how they may do likewise? Is there any place in the Government where this kind of clearinghouse exists? Does the National Association of Manufacturers or the U.S. Chamber of Commerce maintain such a clearinghouse? Where would one go?

Mr. LYNAS. Not to my knowledge, but I think American industry is accelerating their visits to Japan. I think all of the major engineering societies are undertaking programs that identify the strengths and weaknesses of the Japanese system. I think there is now becoming a broad—starting with awareness of the development of new ideas and new programs.

Representative REUSS. Let me conclude by asking whether any member of the panel has anything to add to the very helpful and compendious record you have made? Any additions, corrections?

If not, I want, on behalf of the committee, to thank you all. You have been enormously helpful. We do look forward to making some constructive suggestions to our fellow Americans, not necessarily in terms of what Government can do, because most of this morning's discussion is in an area which belongs primarily to the private sector and there are very real limits on what Government ought to be doing about them. But that, in no way, impairs its significance.

We are most grateful to each one of you; and the committee will now recess.

[Whereupon, at 11:30 p.m., the committee recessed, to reconvene at 10 a.m., Monday, May 11, 1981.]

BUSINESS MANAGEMENT PRACTICES AND THE PRODUCTIVITY OF THE AMERICAN ECONOMY

MONDAY, MAY 11, 1981

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to recess, at 10 a.m., in room 6226, Dirksen Senate Office Building, Hon. Henry S. Reuss (chairman of the committee) presiding.

Present: Representative Reuss.

Also present: James K. Galbraith, executive director: Charles H. Bradford, assistant director; and William R. Buechner, Paul B. Manchester, Mark R. Policinski, and Timothy P. Roth, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE REUSS, CHAIRMAN

Representative REUSS. Good morning. The Joint Economic Committee will be in order for further hearing into the matter of productivity.

We don't know much about productivity, but we know what we like. And what we like, of course, is a high rate of productivity increase. We have not been getting it. The productivity performance of our economy during the past decade has been dismal, averaging less than 0.4 percent per year since 1973. During the first quarter of this year it surprisingly and delightfully went upward, but we still are not quite sure what caused that.

Our hearings today are going to stress the affirmative. We Americans do a good deal of downgrading our abilities nowadays, and it is a pleasure thus that a number of American companies, I suspect a very large number, are doing innovative things about increasing their own productivity.

We aim to get some case histories on what is being done in that particular, and we are delighted that this morning our witnesses are all chief executive officers of companies that belong to the American Business Conference, an association of firms now moderate in size but rapidly growing. Our witnesses include Authur Levitt, Jr., of the American Stock Exchange, who is chairman of the conference; Mr. Don Gevirtz, chairman of the Foothill Group; Dimitri d'Arbeloff, chairman of Millipore Corp.; Abraham Krasnoff, president of Pall Corp.; and Melvyn Klein, president and CEO of Altamil Corp.

You have all prepared comprehensive prepared statements, and under the rule and without objection, they will be received in full into

the record. And I will now ask each one of you five members of the panel to proceed.

Mr. Levitt, would you be good enough to start off?

STATEMENT OF ARTHUR LEVITT, JR., CHAIRMAN, AMERICAN STOCK EXCHANGE, AND CHAIRMAN, AMERICAN BUSINESS CONFERENCE, NEW YORK, N.Y.

Mr. LEVITT. Thank you very much, Mr. Chairman.

The American Business Conference is a new organization which consists of the chief executive officers of 100 of America's most energetic and successful firms, firms that have annual revenues of between $20 million and $1 billion, and each of which has grown 15 percent a year, compounded for the last 5 years, which means that each has doubled in size during that period.

The Conference plans to focus its activities on a handfull of specific issue areas that affect economic growth. Task forces are already at work on capital formation and tax policy, regulatory reform, and international trade. A fourth task force is concentrating on research, the kind of research which will back up some of the "motherhood and apple pie" notions about growth companies with the cold, hard statistics which will prove just why this sector of the economy, we feel, deserves some attention.

The membership of the Conference includes some of the most creative, innovative, and entrepreneurial firms in the American enterprise systems. Our companies are not household names, but they can certainly hold their own against those who are.

Recently McKinsey & Co. did an interesting survey of 10 major corporations which are regarded as "excellent companies." These firms read like Who's Who of America's top industrial performers: IBM; Texas Instruments; Hewlett-Packard; Johnson & Johnson; Emerson Electric; Dana; Digital Equipment; and Procter & Gamble. The chart behind me illustrates the excellent records of those superb companies.

But that chart also illustrates that the firms of the American Business Conference are the true winners of the American enterprise system. With the help of McKinsey, we calculated figures for the past 3 years for growth in employment, sales, and earnings per share of 32 of our ABC firms in industries comparable to those in the original McKinsey survey. As you can see, the ABC firms compare very favorably with McKinsey's excellent companies.

ABC companies grew 60 percent more in employment, 50 percent more in sales, and 40 percent more in earnings than the 10 companies chosen by McKinsey. In absolute terms, over the last 5 years our member companies have increased their jobs 66 percent, their sales 135 percent, and it is worth noting that they are paying 213 percent more in Federal, State, and local tax revenues than they were 5 years ago.

With me today are four chief executive officers who will discuss the extraordinary performance of their own companies, why they have done so well, and why their productivity performance has been excellent. These CEO's include Don Gevirtz of the Foothill Group, Los Angeles; Dimitri d'Arbeloff of the Millipore Corp. in Bedford, Mass.; Abraham Krasnoff of the Pall Corp. in Glen Cove, N.Y.; and Melvyn Klein of the Altamil Corp. in Corpus Christi, Tex.

Mr. Chairman, these men daily address and solve their company's productivity problems. The McKinsey survey of excellent companies found a number of managerial traits which CEO's of high performance companies share. They include a bias toward action, an emphasis on key business value, an emphasis on doing what the company knows best, continued contact with and service for the customer, operational autonomy to encourage entrepreneurship, and simple management procedures and lean staff.

My own business experience over the years as a founder of a very tiny brokerage firm that eventually became known as Shearson Loeb Rhoades, and now as chairman of the American Stock Exchange and the ABC, has kept me in constant partnership with growth companies and growth concepts.

Mr. Chairman, the CEO's with me today and others who make up the American Business Conference are people who exemplify these attributes, and that's why they are winners. They represent truly a different dimension in American business.

Each of the four here today will discuss one or more of the characteristics which he feels is an important factor in the productivity performance of his firm. I believe, Mr. Chairman, that this is a most unique hearing. We have come here to tell you more about our business than about our specific recommendations for public policy. We have come to tell you what business can do to improve our Nation's productivity, rather than to simply dwell upon what Government is doing which inhibits that growth.

I hope this perspective is refreshing and useful to this committee. I think we all recognize that we can no longer afford to carry the heavy baggage of old economic and business management theories as we try to tackle the complex problems facing our economy today. We need new ideas, we need new approaches that deal with today's reality. I hope that the presentations you will hear this morning and the question and answer period that follows will produce interesting insights into the solution of our Nation's productivity problem.

Thank you very much.

[The prepared statement of Mr. Levitt follows:]

PREPARED STATEMENT OF ARTHUR LEVITT, JR.

Mr. Chairman and members of the committee, my name is Arthur Levitt, Jr. I am chairman of the American Business Conference and of the American Stock Exchange.

I congratulate this committee and its chairman for calling these creative and innovative hearings. The Joint Economic Committee has a reputation for being at the cutting edge of economic policy development. These hearings prove that your reputation continues to be well-deserved.

Our economic performance has been so dreary during recent years that too many Americans, and too many of their elected officials, have become pessimistic about the capacity of American industry to compete with the seemingly invincible industrial enterprises of our international trading partners. But that pessimism ignores some of the success stories of the American enterprise system.

The American Business Conference is a new organization which will consist of chief executive officers of 100 of America's most energetic and successful firms. These firms have annual revenues between $20 million and $1 billion, and each has grown 15 percent per year, compounded, for the last five years, which means each has doubled in size during that period.

The American Stock Exchange has served as a catalyst for the founding of the American Business Conference because we believe that dynamic, growth-oriented mid-range companies, like those we trade on our exchange, are our nation's best

source of jobs, innovation, and economic development. The idea for the Conference grew out of a seminar which we held in Washington for chief executive officers of our listed companies in 1979, entitled "Growth Companies: Opportunity and Challenge." Many of the government officials participating in the seminar concurred with the business executives that growth companies have needs and priorities which may differ from those of the large corporations, interests which were not well known and which were not being represented in the federal policy process.

Several of the executives attending the seminar formed a committee to consider the formation of a new organization which would represent the interests—and the contributions—of growth companies to policymakers and to the public. McKinsey & Company carried out an analysis of business representation in Washington and its working relationship with the government, and Arthur Anderson & Co. interviewed several hundred CEO's of growth companies across the country. The conclusion we reached was that there was a clear and convincing need for a new voice in Washington—one that would encourage the government to recognize what successful growth enterprises, if they are allowed to grow and prosper, can do for our nations' productivity and for its economy.

The Conference plans to focus its activities on a handful of specific issue areas which affect economic growth. Task forces are already at work on capital formation and tax policy, regulatory reform, and international trade. A fourth task force is concentrating on research: the kind of research which will back up some of the motherhood-and-apple-pie notions about growth companies with the cold, hard statistics which will prove just why this sector of the economy deserves some attention.

The membership of the American Business Conference includes some of the most creative, innovative and entreprenaurial firms in the American enterprise system. Our companies are not household names, but they can certainly hold their own against those who are. For example, McKinsey and Company recently did an interesting survey of ten major corporations which are regarded as "excellent companies." These firms read like a who's who of America's top industrial performers—IBM, Texas Instruments, Hewlett-Packard, 3-M, Digital Equipment, Procter & Gamble, Johnson & Johnson, McDonalds, Dana, and Emerson Electric.

The chart behind me illustrates three excellent records which these superb firms have compiled.

But that chart also illustrates that the firms of the American Business Conference are the true winners of the American enterprise system. With the help of McKinsey, we calculated figures for the last three years for growth in employment, sales, and earnings per share of 32 of our ABC firms in industries comparable to those in McKinsey's survey.

As you can see, the ABC firms compare very favorably with McKinsey's "excellent companies." ABC companies grew 60 percent more in employment, 50 percent more in sales, and 40 percent more in earnings than the ten companies chosen by McKinsey.

In absolute terms, over the last five years our member companies have increased their jobs 66 percent, and their sales 135 percent; and it's worth noting that they're paying 213 percent more in federal, state, and local tax revenues than they were five years ago.

With me today are four chief executive officers who will discuss the outstanding performance of their companies, why they have done so well and why their productivity performance has been excellent. These CEO's are Don Gevirtz of the Foothill Group, Inc., in Los Angeles; Dimitri d'Arbeloff of the Millipore Corporation in Bedford, Massachusetts; Abraham Krasnoff of the Pall Corporation in Glen Cove, New York; and Melvyn Klein of the Altamil Corporation in Corpus Christi, Texas.

Mr. Chairman, these men daily address and solve their companies' productivity problems.

The McKinsey survey of excellent companies found a number of managerial traits which CEO's of high-performing companies share. These attributes include: (1) a bias toward action, (2) an emphasis on a key business value, (3) emphasis on doing what the company knows best, (4) continued contact with and service for the customer, (5) operational autonomy to encourage entrepreneurship, (6) simple management procedures and lean staff.

My own business experience over the years, as one of the founders and later the president of what is now Shearson Loeb Rhoades, and now as chairman of

the Amex and the ABC, has kept me in constant partnership with growth companies and the people who make them work.

Mr. Chairman, the CEO's with me today, and the others who make up the American Business Conference, are people who exemplify these attributes, and that's why they're winners.

Each of the four here today will discuss one or more of these characteristics which he feels is an important factor in the productivity performance of his firm.

Mr. Chairman, this is a unique hearing. We have come to tell you more about our businesses than about our specific recommendations for public policy. We have come to tell you what business can do to improve our nation's productivity, rather than to simply dwell upon what government is doing which inhibits that growth.

I hope this perspective is refreshing and useful to this committee. I think we all recognize that we can no longer afford to carry the heavy baggage of old economic and business management theories as we try to tackle the complex problems facing our economy today. We need new ideas. We need new approaches that deal with today's reality.

I hope that the presentations you will hear this morning and the question and answer period which follows will produce interesting insights into the solution of our nation's productivity problem.

Thank you.

Representative REUSS. Thank you very much, Mr. Levitt.

Mr. Gevirtz.

STATEMENT OF DON L. GEVIRTZ, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, THE FOOTHILL GROUP, INC., LOS ANGELES, CALIF.

Mr. GEVIRTZ. Thank you, Mr. Chairman.

My name is Don Gevirtz. I am the chairman and chief executive officer of the Foothill Group. It is a pleasure for me to appear before this distinguished committee.

The Joint Economic Committee has had an historic role in conditioning the character of the ideas which drive the legislative process on Capitol Hill. Therefore, it is perfectly fitting that this committee is holding an innovative series of hearings to focus attention on some of the success stories of the American enterprise system.

As Mr. Levitt has indicated, the performance of our economy in recent years has been so dreary that too many Americans believe that our economic might is in inevitable decline. Mr. Chairman, let me state first and foremost, that entrepreneurship and innovation are coming back into style in the United States.

As a growing firm that specializes in making loans to small enterprises across the United States, the Foothill Group participates in this renewal of the American spirit every day.

Three conditions are necessary for entrepreneurship to flourish. First, the availability of equity and venture capital for all companies must be expanded. Second, innovation must be encouraged through the taxing system, with research and development tax grants. And third, interest rates must come down, and even more importantly, must stabilize.

Uncertainty about monetary policy is hamstringing the growth of small companies. High capital gains taxes hinder capital formation for new enterprises. But I also believe that business people need to examine how well we are performing and what we can do to improve our own productivity.

Our company has made two seminal decisions with regard to productivity and basic economic functions. Our productivity objective is to have no more than one employee per million dollars of assets, far less than most comparable institutions. Our economic function is to provide the most efficient conduit of credit for the small and medium-sized businesses in the United States. Perhaps these decisions have something to do with our success over the last 11 turbulent years.

The Foothill Group is a commercial finance company. We specialize in making loans to businesses which we regard as having good prospects, but who are too small or for other reasons deemed less than creditworthy by large, conventional financial institutions. Foothill's corporate commitment is to provide an alternative to bank financing for corporations of this type. These companies, with annual sales in the range of $1 million to $25 million, account for 97 percent of all business enterprises in the Nation and produce 43 percent of the gross national product; 4,700 new small manufacturing companies are started every week in the United States. The number of new business starts has increased annually from 93,000 to 450,000 since 1950, without any long-run rise in the proportion of failures.

Paradoxically, the smaller businesses, which are the backbone of America's industry and which display many admirable qualities—including entrepreneurial dedication, innovation, and self-reliance—often have the most difficulty in obtaining financing for their growth. Even as entrepreneurship and innovation seem to be benefiting from a more favorable tax and regulatory environment, a dark cloud is developing.

The Federal Government has not only reduced the leverage of small business investment companies, SBIC's, but it has implemented an indefinite moratorium on issuing and processing of all small business investment companies licensed by the Small Business Administration. SBIC's represent one-third of all of the Nation's total capital committed for small business development investment. These edicts must be reversed.

So we are in the ninth year of Foothill in the commercial finance and leasing business. Over the last 8 years, loans and leases outstanding have grown from $2 million to over $200 million. During that period, our net worth has grown from $2 million to over $34 million. Foothill has grown up in a volatile environment of rapidly fluctuating interest rates, record inflation, and two severe recessions. Yet we have been effective in this environment and have continued to earn over 20 percent on our average common equity, a feat that none of the 100 largest banks and few of the 100 largest finance companies has ever accomplished.

We are proud of our innovative mix of financing programs, which are unique in the commercial finance business. Our firm has been described by Business Week Magazine as an "aggressive marketer * * * which unlike most finance companies, has moved into the small equipment leasing, long-term lending, and the consumer savings business."

While we are pleased about our record of achievement, the culture of our company is one which emphasizes self-appraisal, comparing our actual performance against our long-range plan. Accountability is a constant element in our management style. American Business Con-

ference Chairman, Mr. Levitt, discussed in his testimony the work of McKinsey & Co. regarding an evaluation of the management characteristics which are found in the 10 excellent companies which they surveyed. He also pointed out that the members of the ABC compare quite favorably with those firms and tend to exemplify the characteristics which drive excellent performing companies.

Each of the ABC panel participants will discuss some of the characteristics found in the excellent companies, even though all of these characteristics can be found in all of the firms. Excellence in management is our company's principal objective. Excellence means knowing what you want to do, concentrating on it, and becoming the best at it. Even though we are a service organization, excellence in management must focus on productivity.

At Foothill, constantly improving productivity consists of three major elements: First, we take a holistic view of our human resources, connecting them to technological literacy, and to a higher level of awareness and concern with our markets, customers, and with our corporate planning. Second, we encourage as much worker participation through ownership, particularly with the widespread, nonqualified stock option plan. However, a more significant employee ownership is discouraged by the adverse tax consequences of the nonqualified stock option plan.

I urge this committee to recommend a return to qualified stock options which would dramatically improve the ability of small- and medium-sized companies to attract entrepreneurs.

Third, I cannot emphasize enough the linkage between corporate planning at our company and productivity. This corporate plan is our organization's most important document. By forcing us to recruit, train, and cross-train personnel, based on the anticipated results of our strategic plans, we have a highly efficient work force in place when it is needed. Our marketing efforts are more productive, and our loan processing systems are ready when the results of the plan develop.

For example, we know we will have to double our employee rolls by 1985 and we know where and we know how. I cannot issue a more important challenge to this distinguished committee than that it encourages the Federal Government to establish its own long-range planning office in the Executive Office of the President of the United States.

I am definitely now talking about capital allocation. I am talking about the establishing of a coordinated, long-range set of goals and priorities for this Nation. If successful businesses like Foothill can get tangible results from a long-range strategy that enables it to anticipate effectively, the Federal Government has the same responsibility so that we in the business community can operate in a more predictable, national framework.

If long-range planning helps corporate productivity, it will improve the productivity performance of the entire economy. Thus, our bias toward action is linked with planning. Our decisionmaking processes flow from this system. Entrepreneurs, who make up the majority of our customers and our managers, are impatient people. They do not want good ideas to die, either of excessive analysis or of old age. At Foothill we have a corporate slogan: "The truth will set you free."

And in finding the truth, we believe that justice delayed is justice denied. Hence, at Foothill, the operating attitude is: Try it, do it, fix it.

At Foothill we demand new ideas from our team and we get them because good ideas are implemented fast. Our bias toward action and our willingness to take risks lets us accept deals that the competition turns down, because they seek perfect solutions to imperfect problems. Let me give you an example of what I mean.

One young man from Texas sometime ago came to our Houston office with an opportunity. This 27-year-old operated a tug boat owned by his uncle, but he had visions of growth. He had no net worth, little financial history, but a damn good idea and a sound knowledge of the business. His good idea and sound knowledge didn't get him very far with the risk-adverse financial institutions; but we took a risk, financed his first boat for $250,000, his second for $365,000, a third and a fourth, and Foothill ultimately gave him a $1 million line of credit. We are glad we did it because his company is healthy and we have a bigger, better customer. If we had not had a bias toward action and a tolerance for risk-taking, he and we would both be worse off.

The development of proprietary financial products that fulfill needs, particularly of the small business market, is a top corporate priority at Foothill. During fiscal year 1981, Foothill continued with its development of innovative financial products, including the energy resources division, which provides financing for oil and gas servicing and support companies, and independent drillers in the oil patch of Texas, Louisiana, and the Rocky Mountains; and the 10-year business loan which helped small companies by reducing sharply their cash flow requirements.

Mr. Chairman, the improvement of innovation and productivity are the future key to the prosperity of all Americans. All segments of society, government, business, labor, consumers, environmentalists, and others have a responsibility to put aside immediate political considerations and join in a partnership to turn this economy around. Government, in my judgment, must do its part by restraining spending, reducing tax barriers to savings and investment, rationalizing the Federal regulatory system, and most importantly, ending the climate of crisis management, crisis containment, stop and go economic policy which has dominated economic policy for too long. The Government must develop its own planning process.

In concluding, let me reiterate my deep conviction of the power of entrepreneurship and innovation to restore the American vision. In the preamble to our corporate plan, we quote master city planner, Daniel Burnham, who 100 years ago said:

> Make no little plans, they have no magic to stir men's and women's blood, and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble logical diagram once recorded will never die. Remember that our sons and daughters and grandsons and granddaughters are going to do things that would stagger us.

If the United States makes big plans, it will have the magic to stir the souls of our Nation's innovative entrepreneurs.

Thank you.

Representative REUSS. Thank you, Mr. Gevirtz.

Mr. d'Arbeloff.

STATEMENT OF DIMITRI V. d'ARBELOFF, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, MILLIPORE CORP., BEDFORD, MASS.

Mr. D'ARBELOFF. My name is Dee d'Arbeloff and I am chairman and chief executive officer of the Millipore Corp., with headquarters in Bedford, Mass.

Mr. Chairman, month after month the evidence of the scope and complexity of our economic problems becomes more compelling. These are clearly exceptional times for the American economy.

It was not that long ago when most Americans thought a prime rate of 5 percent would constitute unimpeachable evidence of usury.

An unemployment rate of over 7 percent used to be thought completely unacceptable.

This administration, whether or not you agree with its specific policy proposals, deserves enormous credit for forcing the American people and the Congress to confront the enormity of the economic problems we face.

This committee deserves credit for undertaking this series of hearings to investigate what American industry is now doing and can do better to improve our productivity performance.

Mr. Chairman, as my colleagues have pointed out, productivity growth is essential if the standard of living of the average American is to rise during the coming decades.

Our inflation and productivity problems are interrelated. Falling productivy means rising unit labor costs which inevitably leads to higher prices.

It is also important, however, to understand that productivity and inflation are separate phenomena. It is vital that we reduce the rate of inflation, but a zero inflation rate produced through a long period of economic stagnation, which in turn leads to zero productivity growth, would result in a declining standard of living for the average American.

We must reduce the rate of inflation through policies which increase economic growth and provide a climate within which productivity performance will excel.

Government has an important role to play in that process. We need restraints on the growth in the size of the public sector. We need a tax policy that does not penalize savings and investment. Most importantly we need Federal policies that are not subject to wild oscillations and gyrations.

Government, however, cannot do the job alone. The performance of business managers will play an important role in the future productivity performance of our economy.

My company, the Millipore Corporation, manufactures and markets products and systems for the analysis and purification of fluids. Our principal products include membrane filters and membrane-based filtration systems, enzymes and clinical diagnostic reagents, instruments and high performance liquid chromatography systems and supplies. Millipore products and systems meet customers' needs in the pharmaceutical and health-care markets, the research market, the electronics, specialty chemistry, and other industrial process markets, as well as in industrial and environmental analysis.

Millipore has been most instrumental in the new technology of high performance liquid chromatography, HPLC. To date, the marketing of HPLC has been divided into four segments: Analytical, research, quality control, and clinical application.

First, HPLC is used to analyze, identify, describe or quantitate samples for both industrial and independent laboratories.

Second, HPLC is used extensively for independent and university research, and many of these applications are in the emerging field of biotechnology. Both the private and public sectors use research data to establish quality control regimens. This is a third segment of the market for HPLC. Quality control monitors the constituents of raw materials, work in process, and finished goods.

The fourth market segment for HPLC is its use in both hospital and independent medical research and clinical laboratories.

Millipore has been a leader in the field of laboratory technology. Because of our outstanding progress in this area, our financial situation has surpassed many of the giants in this field. Sales for the year 1980 were $265 million, up 18.6 percent from 1979. It's interesting to note that 10 years ago our sales were $30 million.

These figures pale when compared to the growth of capital expenditures which rose from almost $19 million in 1979 to nearly $26 million in 1980, an increase of 36 percent. This tremendous growth is followed by an increase of resources devoted to research and development. For 1979, $15 million was spent on research and development. In 1980, R. & D. expenses totalled close to $19 million, an increase of 22 percent.

At the year end, total assets for the Millipore Corp., grew from approximately $187 million in 1979 to $241 million in 1980, which represents an increase of 29 percent.

These strong growth rates are attributed primarily to increases in unit volume and new product introductions. Furthermore, Millipore has historically financed its growth almost entirely from funds generated by operations.

The McKinsey survey referred to by my colleagues notes that the management of excellent companies has a tendency to stress one key business value. The point is that too many objectives turn out to be no objectives at all. Emphasizing one key value produces a company culture which is conducive to excellence.

At Millipore, we believe that our future success depends on our research and development program. That is why we dedicate such a large portion of our resources to R. & D.

Emphasizing R. & D. is really a subset of stressing a long-term time horizon for the firm. That is a very difficult goal for a company to achieve.

The reward-penalty structure within many corporations tends to be as short-run oriented as a politician's next election. Bonuses, salaries, and promotions are too often dependent on this year's increase of profits over last year.

I know that our chairman, Arthur Levitt, agrees with me when I say that the financial community tends to have a short-term perspective which adds to the myopia of the rest of the business community. That is why managers are reluctant to devote scarce resources to research and development which will begin to yield returns in the relatively distant future.

I like to think Millipore is an entrepreneurial firm. We believe that we are risk-takers who understand the need to build a strong product base for the future.

I believe that one of the most important attributes of an entrepreneur is tenacity. We, at Millipore, are tenacious in our single-minded view that we must "buck the tide," take the longrun view, make research and development expenditures in order to continue to grow and serve our customers here and around the world.

Our public posture, moreover, is our private feeling. All our managers know that our emphasis on taking the long-term view is real.

This is one area where Government policy can be most helpful. The administration and the Congress need to develop a longrun, coherent, and internally consistent set of economic policies. These policies need to be coordinated with similar ones adopted by the monetary authority.

Governmental attempts to fine-tune the economy in the past have simply added to the burdens of those businesses seriously engaged in long-term business planning.

Fortunately, the Congress is beginning to develop relatively sophisticated legislative planning mechanisms through the congressional budget process which are helpful in keeping the focus on the long-term requirements of the American economy even as shortrun brush fires are extinguished.

Governmental policies that provide incentives for Americans to add to their personal savings would be helpful in expanding the planning horizons of American business. In my view, the pool of aggregate personal savings, which is now very limited, imposes severe constraints on firms which would like to ignore quarterly profit figures to concentrate on building a solid financial base for the future. Unfortunately, such a firm may not have the needed access to equity capital to finance its longrun plans. That is why I personally favor a reduction in the tax rates on capital gains income. Such reductions may help to increase the pool of equity capital and thus relieve business of some of the severe pressure to maximize shortrun profits.

Mr. Chairman, our friendly competitors, the Japanese, understand the importance in this increasingly interdependent and competitive world of maximizing longrun profits. The American financial and business communities need to develop new and creative financing techniques that not only permit, but encourage, longrun business planning.

The McKinsey survey of excellent companies also found that those firms which stick to doing what they know best tend to be top industry performers.

Mr. Chairman, this is a lesson which has yet to be learned by American industry or by the American Government.

Good companies, like the one with which I happen to be affiliated, and I think we are one, are prime takeover targets of both domestic and international corporations. Merger for the purpose of spreading the risk on a multinational conglomerate portfolio may lead that firm into lines of business where it has little or no experience and expertise. The result may well be a subsidiary operation which is run in less than an excellent fashion.

Mr. Chairman, there may be economies of scale in production and distribution, but I am convinced that there may well be diseconomies of scale in entrepreneurship. The larger the enterprise, the greater the

tendency toward bureaucratic management procedures that stifle creative risk-taking—the hallmark of entrepreneurial firms.

At some point, in my judgment, the American Government and the American business community must face the issue of takeover threats to entrepreneurial, highly productive, small and midsize companies.

We, at Millipore, have been successful partly because we have not tried to spread our corporate risk by getting into fields where we lack experience and expertise. Our success is also partly a function of our stubborn refusal to concentrate on maximizing shortrun profits.

Our objective at Millipore is not to make the current year's annual report look as good as possible. Our objective is to produce an outstanding record of service to our customers and a solid earnings record that will endure through many years. That is our corporate philosophy, and I believe that philosophy is one of the major reasons for our success over the years.

Thank you very much.

Representative REUSS. Thank you, Mr. d'Arbeloff.

Mr. Krasnoff.

STATEMENT OF ABRAHAM KRASNOFF, PRESIDENT, PALL CORP., GLEN COVE, N.Y.

Mr. KRASNOFF. Mr. Chairman, my name is Abraham Krasnoff, and I am the president of Pall Corp.

It is an honor to be invited to testify before you, and I must say it concentrates the mind to come here. My mind has even been further concentrated because I've been asked to summarize my prose here, so I will try to do that and also try not to repeat some of the comments made earlier with which I agree. But let me give you, if I may, a brief introduction to Pall Corp.

We're in the business we call fluid clarification, and by that we mean we are involved with products that remove relatively small amounts of particles which may be liquid, solid or gaseous from relatively large amounts of fluids, which may be liquids or gases.

At $170 million in sales, we are the world leader in size in this narrow niche of technology, serving a great diversity of applications. And I would like to give you some idea of what that is so that you can judge what it is we are dealing with.

These applications range from protecting open heart surgery patients from particles and air bubbles circulating in the bloodstream during open heart surgery procedure, the protection of helicopter engines from ingesting dirt, the preventing of the escaping of radioactive particles from the wash water of nuclear power plants, eliminating wear particles from aircraft hydraulic systems, and a myriad of other applications. Narrow product line with a very broad range of markets and applications.

Pall Corp. has had substantial growth for 10 years. A compounded growth rate in that period of over 20 percent. In the past 5 years, our sales have grown 2½ times and net earnings rose 2.8 or 2.9 times. Our rate of earnings is higher than most. Our return on equity is in the 25-to-30-percent range.

In the past 5 years, our employment grew from about 1,700 to 3,100.

It is worth noting that foreign sales, about 40 percent of our business, grew somewhat faster than U.S. sales simply by virtue of the size of the foreign markets, while foreign employment grew somewhat slower. This is partly because exports of domestic components to foreign subsidiaries has added to the work force here.

So much for the credentials of Pall Corp. I would like now, if I may, to respectfully give you my viewpoint on our reasons for successful growth and a few comments on Japan, Inc., to which our company, as others here and as many others in the United States, export quite successfully.

I suppose it is fairly self-evident that productivity growth on the macroeconomic level can only take place under a system of economic growth; that is, sales growth by many individual companies. Fiscal and monetary policies as well as free trade policies conducive to growth are essential if the economy as a whole is to prosper.

Sales growth in the competitive international market such as we face requires us to focus on exploiting our advantages of technology and to learn the lessons from the Japanese, since there are lessons to be learned from the Japanese, of the value of service and response to the customer.

At Pall Corp., we have a corporate philosophy which puts great emphasis on this very basic, simple principle. We are guided by the rule of providing to our customers what we have labeled with the acronym EESES. Since I am here in the capital of acronyms I hope you will forgive me for adding one.

We offer to our customers ease of use, economy of use, safety and efficacy backed by service. And we preach to our people to do what eases the way for the customer. Put another way, our viewpoint is that we can grow and prosper best if we benefit the customer more than the competitor can, whether that competitor is Japanese or German or even American.

I believe that this simple doctrine, when followed by American companies, succeeds any place in the world, as witness the giants like IBM and General Electric, the greatest proponents on this thesis, or the smaller companies such as those represented here.

Where the lesson isn't learned or it is forgotten it can be no success even here at home, as witness the state of the U.S. automotive industry.

Our structure is designed to maximize our expertise and our productivity by organizing separate businesses to serve each of our major market segments.

At the end of fiscal 1981 we will have seven such business line organizations each with its own plants, each with its own full set of functional management people, and a similar organization in Europe.

I think it is crucial that as we organize each new business we tool it appropriately for its market and we take the short-term profit pressure that comes with starting up new operations.

Although we do worry about quarter-to-quarter comparisons—and I might add the Japanese companies do as well. Most of them are publicly owned—we don't do it at the expense of long-range opportunity.

In each of these business line organizations we develop functional and management strength which is transferable to other operations. At the same time this structure permits concentration on a relatively

narrow line of endeavor, and the expertise and entrepreneurship that comes with concentration follows.

Innovation and entrepreneurship and investment are all needed to create growth. The minimizing of regulation and the encouragement of venture capital by capital gains reduction will get entrepreneurs to come forward and new technology to be tried. I believe there is no need to take special action to encourage R. & D. expenditures if entrepreneurs are readily provided with capital.

As has been mentioned before, in my experience a well structured qualified stock option plan was the most powerful tool, and I have a grayer head here than most during my career, at giving management a long-range perspective while they were looking at quarterly results.

Regulation which prevents new products from easily reaching the market and accelerated depreciation, in my view both of these things tend to favor the old, entrenched and often declining industries, many of which long ago lost their service and value giving orientation. Protection of such industries from domestic or foreign competitors I believe diverts capital and encourages more protectionism and increases inflation.

Since we are in the cycle of history now in which the Swiss and Germans are no longer to be emulated—when I grew up we had to emulate the Swiss and Germans—now we are to learn from the Japanese. I have been doing business with the Japanese for some 20 years now, and I think it is well to note that their consistent policy of keeping interest rates modest and urging banks to have an equity participation in their borrowers has led to highly leveraged capital structures. This along with the encouragement of consortia, which are illegal by most U.S. standards, has led to the spread of risk taking in the promotion of new ventures.

I believe that these are the things, along with better statistical information and planning, as Mr. Gevirtz suggested earlier, and the recruiting of the bravest and the best to enter Government as they do in Japan and as apparently they do in this country too, from the looks of this assemblage, are the things that propelled Japan forward.

The much discussed monolithic society in Japan and the dedicated worker are doubtless of some help, but I think it is quite clear that sound fiscal and monetary policies and their strong practice of protecting infant industries are really more important.

I believe, Mr. Chairman, that a moderate interest level and a less expensive dollar along with a tax structure that gives incentives to venture capital and to long-term management income, would go a long way toward rousing the sleeping giant of American innovation and productivity.

Thank you.

[The prepared statement of Mr. Krasnoff follows:]

PREPARED STATEMENT OF ABRAHAM KRASNOFF

Mr. Chairman, my name is Abraham Krasnoff. I am the President of Pall Corporation.

It is an honor to be invited to testify before this illustrious committee, and I must say it concentrates the mind to prepare to come here.

Mr. Chairman, like all of you, I am concerned about the decline in our nation's productivity. To me, the question is crucial to our future because productivity

growth may be the only way to control inflation, produce wealth and assure social stability. I am happy to report to this committee some things that we at Pall do to promote growth, productivity and competitiveness.

PALL CORPORATION

Let me give you a brief introduction to Pall Corporation. We were organized in 1946 to exploit the invention by Dr. David P. Pall of porous stainless steel, a new engineering material made by sintering (heating in a furnace with controlled atmosphere just below the melting point) stainless steel powder of the consistency of dust or fine sand. The intention was to sell this marvelous material to other filter companies—all of whom proceeded not to buy, and drove this new entrepreneur, David Pall, into the filter (or fluid clarification) business. Rejection of his ideas has started many an inventor on his way in a new business—especially when venture capital was readily available.

Today, Pall Corporation is still in the same business. Now, however, we also produce a wide variety of disposable filter media, and we have a substantially integrated manufacturing operation. To us, fluid clarification means the removal of relatively small amounts of particles which may be solids, liquids or gases, from relatively large amounts of fluids which may be either liquids or gases. At $170 million in sales, we are the world leader in size in this narrow niche of technology, serving a great diversity of applications. These applications range from protecting open heart surgery patients from air bubbles or contaminants in recirculating blood, and protecting helicopter engines from ingesting dirt, to preventing radioactive particles from escaping from nuclear power plant wash water, and eliminating wear particles from aircraft hydraulic systems.

Pall Corporation has had substantial growth for ten years—a compounded rate of over 20 percent. In the last five years sales increased 2½ times. Net earnings rose even more and are far above average. In the past five years, our employment grew from about 1,700 to about 3,100. Foreign sales—about 40 percent of our business—grew somewhat faster than U.S. sales, while foreign employment grew somewhat slower. This is partly because exports of domestic components to foreign subsidiaries has added to the work force here. So much for our credentials. I'd like now to respectfully give you some of my views on successful growth and on Japan, much to which we successfully export.

CONTINUED CONTACT WITH AND SERVICE FOR CUSTOMERS

I suppose it is fairly self-evident that productivity growth on the macroeconomic level can only take place under a system of economic growth—that is, sales growth by many individual companies. Fiscal and monetary policies as well as free trade policies conducive to growth are essential if the economy as a whole is to prosper.

Sales growth in a competitive international market requires us to focus on exploiting our advantages of technology and to learn the lesson from the Japanese of the value of service and response to the customer.

At Pall Corporation we have a corporate philosophy which puts great emphasis on this very basic, simple principle. We are guided by the rule of providing to our customers: (1) Ease of use, (2) economy of use, (3) safety and (4) efficacy, backed by excellent (5) service.

We call this by the acronym EESES and we preach to our people to do what eases the way for our customers. Put another way, we want to benefit the customer more than the competitor can, or will; whether that competitor is Japanese, German or American.

I believe that when this simple doctrine is followed, American companies succeed anywhere in the world—as witness the giants like IBM and GE as well as the smaller companies represented here today. When the lesson is forgotten there can be no success—even at home—as concerns our automotive industry. At full our basic approach to doing business is straightforward and uncomplicated: (1) We stay in the line of business in which we are expert—fluid clarification. (2) We enter only those markets in which we believe we can offer more value to the customer than other suppliers. (3) We are guided by the principle of EESES. (4) We have developed a market oriented business line management structure.

Pall's structure is designed to maximize our expertise and our productivity by organizing separate businesses to serve each of our major market segments.

By the end of fiscal 1981, there will be seven such business line organizations, each in its own plant and complete array of functional managers in the U.S. and a similar—although slightly different organization in Europe. As we organize each new business we tool it appropriately for its market and take the short term profit pressure that comes with startups. Although we do worry about quarterly results (and so do the Japanese) we don't do it at the expense of long-term opportunity.

In each of our business line organizations we develop functional and management strength which is transferable to other operations. At the same time, this structure permits concentration on a relatively narrow line of endeavor—and the expertise and entrepreneurship that comes with such concentration follows.

Innovation, entrepreneurship and investment are all needed to create growth. The minimizing of regulation and the encouragement of venture capital by capital gains reduction, will get entrepreneurs to come forward and new technology to be tried. I believe there is no need to take special action to encourage R. & D. if entrepreneurs are readily provided with capital. In my experience the well structured qualified stock option plan of prior years provided proverbial long range incentive to management, I commended it to you.

Regulation which prevents new products from easily reaching the market, and accelerated depreciation tend to favor the old, entrenched and often declining industries, many of which long ago lost their service and value giving orientation. Protection of such industries from domestic or foreign competitors diverts capital, encourages more protectionism and increases inflation.

Since we are in the cycle of history now in which the Swiss and Germans are no longer to be emulated, and we are to learn from the Japanese—it may be well to note that their consistent policy of keeping interest rates modest, and urging banks to have equity participation in their borrowers has led to highly leveraged capital structures. This along with the encouragement of consortia tends to promote and spread risk taking. I believe these are the things, along with better statistical information and planning, and the recruiting of the bravest and the best to enter government, that propel Japan forward. The much discussed monolithic society and dedicated worker are doubtless of some help, but sound fiscal and monetary policies and the practice of infant industry protection are really more important.

I believe Mr. Chairman that a moderated interest level and a less expensive dollar along with a tax structure that gives incentives to venture capital and to long term management income would go a long way toward raising the sleeping giant of American innovation and productivity.

Representative REUSS. Thank you, Mr. Krasnoff.

And now to wind up the panelists, Mr. Melvyn Klein of Altamil Corp.

STATEMENT OF MELVYN N. KLEIN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, ALTAMIL CORP., CORPUS CHRISTI, TEX.

Mr. KLEIN. Thank you, Mr. Chairman. I am Mel Klein, president and chief executive officer of the Altamil Corp.

I assure you that I shall keep in mind your comments with regard to the need for some speed and will summarize.

The points I would like to make this morning are as follows:

We at Altamil believe that we are an entrepreneurial firm. In addition, I was a senior officer of a leading Wall Street investment firm that specialized in developing and assisting merging companies starting in the 1960's. I continue to be an adviser to that firm, which provides equity capital for many new entrepreneurial enterprises.

I have also been and am today a trustee and adviser of several substantial capital pools which have been very involved in entrepreneurial activity. I personally have been involved in both investing and participating in the raising of equity for the startup of a number of new and entrepreneurial enterprises.

I believe that my background and experience may offer some insight and expertise on the subject of entrepreneurship and the productivity which is related to it.

Entrepreneurs are hand-on managers. In their excellent article, "Managing Our Way to Economic Decline," Professors Hayes and Abernathy suggest that American managers have been guided by principles of management that despite their sophistication and widespread usefulness encourage a preference for analytic detachment rather than the insight that comes froms hands-on experience.

In each of the entrepreneurial companies with which I have been associated the key to excellent productivity performance has been simple management procedures which allow for easy communication within the firm and a lean staff which permits quick decisionmaking by its top management.

Our managerial style at Altamil and within each of our subsidiaries permits the flexibility of action which allows us to adjust rapidly to changing market conditions.

I have been associated with several large corporate enterprises. Some of them are excellent firms. The best managed of those maintain reasonable management controls and at the same time adjust rapidly to changing market, financial and technological conditions by having either decentralized decisionmaking or simple procedures for communication which encourage quick responses and result in action.

Mr. Chairman, you have listened patiently to my colleagues and myself. And the discussion this morning related almost exclusively to the management of individual enterprises. As a chief executive of such an enterprise for the last 4 years, I hope I have made a contribution to that discussion and will make one with the submission of my prepared statement.

I would like to deviate, with your permission, in the last part of my statement to discuss some broader issues affecting entrepreneurship and productivity in this country, and I will just take a moment. I believe that we would all be remiss if we did not at least take note of the environment in which we all operate, an environment which is broader than just the economic one, and certainly broader than the individual enterprises for which we have direct responsibility.

We believe it would be appropriate for this committee to take note in the study you are now doing on productivity to the interdisciplinary nature of the problem; that a key issue that affects productivity in the country relates to the value system in our society, one which has been discouraging long-range commitments, one which has emphasized instantaneous results, instantaneous gratification, and which has discouraged a longer run look at the future, and has even discouraged confidence in the future.

One distinguishing characteristic among entrepreneurs is that they make longrun commitments. They believe in themselves, their products, and they believe in this country and the system in which we all operate.

We would like to encourage you as you look at these specific statistics, these specific programs that we follow in each of our companies, to broaden your look at the productivity issue and include at least a recognition of the sociological, psychological, political, and other as-

pects which directly impact upon the way people think and the way people behave.

We believe that this issue requires a recognition, an introspection by many sectors, and we believe that a broader look motivated by hearings such as this can lead to an acknowledgment of many of the issues that need to be addressed in order to turn around some of the productivity problems with which we are all concerned.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Klein follows:]

PREPARED STATEMENT OF MELVYN N. KLEIN

Mr. Chairman, my name is Melvyn Klein. I am the president and chief executive officer of the Altamil Corp.

I am delighted to have this opportunity to participate in these innovative hearings.

We at Altamil believe that we are an entrepreneurial firm. In addition, I was a senior vice president of Donaldson, Lufkin & Jenrette which has been one of the leading Wall Street investment firms in developing and assisting merging companies starting in the 1960's; I am now a director of DLJ Capital Corp. and senior investment adviser to Sprout Capital Group which provides equity capital for many new entrepreneurial enterprises. I have also been and am today a trustee and adviser to several substantial capital pools which have been very involved in entrepreneurial activity. Finally, I have personally invested and participated in raising the equity for the start-up of a number of new enterprises.

I believe that my background and experience may offer some insight and expertise on the subject of entrepreneurship.

Professor Nathaniel Leff, writing in a recent issue of the Journal of Economic Literature, suggests that "entrepreneurship is so important for economic development that it has sometimes been conceptualized as a 'fourth factor of production.'" [1] He defines entrepreneurs as those who put capital at risk to produce new products, or to produce new processes or to create new markets for existing products.

The difference between a professional manager and an entrepreneur is the difference between one who attempts to maximize output from a given level of factor inputs and one who in Irving Kristol's words: "Creates new opportunities for profitable economic transactions." [2]

Entrepreneurs are "hands on" managers. In their excellent article, Managing Our Way to Economic Decline, Professors Hayes and Abernathy suggest that American managers have been guided by principles of management which "despite their sophistication and widespread usefulness encourage a preference for analytic detachment rather than the insight that comes from 'hands on' experience." [3]

SIMPLE MANAGEMENT PROCEDURES AND LEAN STAFF

In each of the entrepreneurial companies with which I have been associated, the key to their excellent productivity performance has been simple management procedures which allow for easy communication within the firm and a lean staff which permits quick decisionmaking by its top management.

We follow this principle at the Altamil Corp. Altamil is a holding company; our operating companies manufacture a diversified line of products for the trucking, packaging, and aerospace industries through our subsidiaries, Fontaine Truck Equipment, American Box Co., and Aluminum Forge Co. We have operations throughout the country.

We have been able to meet the vigorous criterion of 15 percent compounded growth set by the American business conference even though some of our operations are in a sector of the economy which has been experiencing serious difficulty. Part of the reason is that our managerial style at Altamil and within each of our

[1] "Entrepreneurship and Economic Development: The Problem Revisited," Nathaniel H. Leff, Journal of Economic Literature, Vol. XVII (March 1979), p. 47.
[2] "Business vs. the Economy?", Irving Kristol, Wall Street Journal, June 26, 1979.
[3] "Managing Our Way to Economic Decline," Robert H. Hayes and William J. Abernathy, Harvard Business Review, July-August, 1980.

subsidiaries permits the flexibility of action which allows us to adjust rapidly to changing market conditions. I have been associated with several large corporate enterprises. Some of them are very excellent firms. The best managed large corporations maintain reasonable management controls and at the same time adjust rapidly to changing market, financial, and technological conditions by having either decentralized decisionmaking or simple procedures for communication which encourage quick responses to requested action.

There may be economies of scale in production and distribution, but there can be diseconomies of scale in terms of the turnaround time for management decisionmaking, unless decisionmaking is decentralized or structured for action with a sense of urgency.

ENTREPRENEURSHIP

Mr. Chairman, you have patiently listened to almost 60 minutes of discussion from this panel related almost exclusively to the management of individual enterprises. As a chief executive of such an enterprise for the last 4 years, I hope I have made a contribution to that discussion. I would like to deviate, if you would permit, in the last part of my statement to discuss entrepreneurship in general analytical terms. I do so as someone who has participated in the development of a number of new companies, as stated earlier.

Historically, economic growth has been driven by the reward/penalty structure associated with risk-taking and entrepreneurship. During the last generation, that structure has been undermined by Federal policies which have installed safety nets to eliminate the risk of free-fall for large corporate entities. Those policies tend to weaken the desire and the need to create new products, processes, and markets to insure continued corporate survival.

The erosion in the climate for entrepreneurship is difficult to measure. Nobel Laurate, Professor Lawrence Klein of the University of Pennsylvania, has developed an intresting new concept which may provide a clue to the degree of that erosion.

Klein's concept is called the investment-efficiency ratio. This ratio measures how much real growth the economy has produced for each dollar invested. The higher the real growth produced by each investment dollar, the higher the investment-efficiency ratio. The lower the real growth for each investment dollar, the lower the investment-efficiency ratio.

The investment-efficiency ratio provides a measure of the rate of return on dollars invested for the economy as a whole.

Over the last several years, a growing number of economists have written about the implications of our low rate of aggregate investment for the performance of our economy. Their point is, of course, well taken. The U.S. since 1970 has invested a lower percentage of its GNP than any of our major industrial trading partners.[4]

The result has been a declining capital/labor ratio which not too surprisingly has been accompanied by a miserable productivity performance. During the decade of the 1970's, productivity in the U.S. increased at an average annual rate of 2.5 percent while in Germany the rate was 5.2 percent and in Japan, 4.8 percent. Indeed, productivity in the U.S. actually declined in 1979 and 1980.

Mr. Chairman, I recognize the importance of increasing aggregate investment in our economy. But we must also recognize the importance of producing more results for each investment dollar.

According to Professor Klein's figures, the ratio of real business fixed investment to real growth in GNP during the period 1950–59 was 30.2 percent. During the decade of the 1960's, the ratio declined to 27.1 percent and in the 1970's the investment-efficiency ratio dropped dramatically to 12.8 percent.

Mr. Chairman, the American Business Conference intends to construct a research program which will bring into its orbit some of the most talented and thoughtful people in the Academy, particularly those whose ideas are new and fresh.

We intend to examine in an analytically rigorous fashion the possible reasons for the decline in the I.E.R. It may be difficult to prove empirically, but, Mr. Chairman, I believe that a society where entrepreneurship is not encouraged is likely to be one where investment dollars are not employed creatively to produce the maximum benefit for our people.

---

[4] International Economic Indicators, June 1980, U.S. Department of Commerce, International Trade Administration, table XV.

Representative REUSS. Thank you, Mr. Klein.

Just starting with your testimony and working backward, earlier witnesses had stressed the principle, enunciated by Mr. Levitt as a good attribute of productivity, of emphasis on doing what the company knows best. This, which came out in the testimony of some of your colleagues here as kind of an aversion to conglomerate activity.

But I note that your very successful company makes truck equipment, boxes, aluminum forgings, aerospace equipment, et cetera, which certainly sounds conglomerate to me.

Would you want to break a lance for the principle of conglomerates and start a dialog here? I need some help on this from all of you.

Mr. KLEIN. We will try and give you that.

What we have tried to do has been consistent with the principle of doing what we do best. We have capabilities in three fields. We have those capabilities as a result of history. When we took control of Altamil and began rebuilding the company, it had many of the classic problems; we also recognized the strengths the company had in three areas, and we really set a course to concentrate upon those strengths and be an industry leader in each of our three operating businesses.

We looked at each area. We recognized the position of the industry and the position of each company. And we encouraged each company to develop a plan, a multi-year plan, which allowed it to grow sensibly, practicably, one step at a time, no mirrors, no fancy formulas.

Where we were able to utilize the knowledge and experience of people that grew up in industries, knew them extremely well, and encouraged them to develop further products, we provided the capital and we provided some further in-depth understanding about their industries. But we basically concentrated upon what we did well.

I believe that as long as business managers are not superficial and are not dealing solely with financial, legal overview aspects, but take the time to understand their operating strengths, in depth, that that can be built upon.

So I would concur with my colleagues, that building upon existing strengths, focusing upon those is important. But I do believe that a single entity can do it in more than one field, as long as it follows those straightforward kinds of approaches.

Representative REUSS. Where would you draw the limit? You've got three disparate fields. We all would stipulate that you need at least one. Why not six?

Mr. KLEIN. We draw the limit on that, which we understand, and that which we have a capability of adding something to.

We have refrained from going into new businesses and new fields that, at first blush, looked very attractive, but which we didn't bring anything to. The first of which we didn't bring anything to was an understanding of what was really important to be successful in that field.

So, in direct response to your question, I would draw the line at that point at which we neither bring something to the business and at the point at which we don't really understand what we're getting into and what is required to be a leader in that industry. We are a leader in each of the three businesses we are in. We are an industry leader, we are a market leader, and we are an innovator in each of those areas.

And I think in great part that comes from having people that have a real understanding and experience and depth in that. And we would draw a line on going into any area in which we couldn't bring to bear those characteristics.

Representative REUSS. You acquired a lot of that expertness though after you got into it. You didn't start out with universalists in trucking, aerospace, and paper boxes, obviously.

Mr. KLEIN. No. Well, I, individually, and several people in top management acquired some of it after we got in. But we saw to it that the entrepreneurs that originally built that business remained with the business and that those people who had a history and understanding and depth remained and provided us with the education and the experience that was necessary.

Representative REUSS. Well now, if you take one of the farther flung conglomerates, Gulf & Western, I am sure that their executives would say that they're only doing what they can do well. And I wonder how self-executing a canon that really is?

Mr. KLEIN. I think that becomes, in great part, a matter of individual judgment. I don't share a universal condemnation of conglomerates. I do share a view that it is important for those people who ultimately control an enterprise to understand, in depth, that which they are responsible for. And I would draw the line at that point.

I think the more successful of the larger companies have demonstrated their ability for continuing success by getting into those businesses which they either did understand or could understand. And those larger ones that got into real difficulty I think deviated from that principle.

Representative REUSS. We will return to this. But let me now start with Mr. Levitt.

Are all of the four companies that have been such fascinating case histories this morning, companies whose stock is listed on the American Stock Exchange?

Mr. LEVITT. No, they are not. The members of the American Business Conference come from the American Stock Exchange, the New York Stock Exchange, over the counter, and some private companies as well.

Representative REUSS. Mr. Gevirtz, I was particularly interested in your testimony on the Foothill Group. Tell me a little more about how you do business, what are your sources and uses of funds?

Mr. GEVIRTZ. Mr. Chairman, in terms of how we do business, Foothill is an alternative lender to the banking system, so that when a small company cannot borrow from a bank or can't borrow enough or can't borrow for a long enough term, he comes to us. And we are now lending to more than 7,000 companies across the United States. We are collateral lenders, which means we figure out a way to provide them with long-term working capital that is not available from conventional sources. And we use their collateral so that we are able to loan them money that, in some cases, they don't have to pay back.

For example, if we lend against their accounts receivable, as long as their accounts receivable stay healthy, that money is in their company as working capital, and they don't have to pay it back.

In terms of where our money comes from, first of all, we are a public company, and so we frequently raise either debt capital or equity from

the public. We just recently completed a $9 million public offering, a secondary, that we sold to the public at approximately two times our book value.

We also operate thrift and loans throughout California and an industrial bank in Denver, Colo. And in those institutions, we take in public deposits. We are permitted to pay higher rates of interest on those deposits than savings and loans. And so, where there has been a tremendous disintermediation problem in the savings and loan industry over the past couple of years, our deposits in our institutions have actually gone up by 10 percent.

Additionally, we have a number of large institutional lenders among the insurance companies. We sell commercial paper on the open market. And we have several major equity investors, such as Bessemer Securities, Continental, and Continental Illinois Bank.

Representative REUSS. How does Continental Illinois get to be an equity investor?

Mr. GEVIRTZ. They became interested in our company several years ago and came to us with a proposal that they buy a significant block of convertible preferred stock. They bought that—fortunately, I guess, for all of us—without voting rights, because later they proposed that we merge with them. And that merger was announced to the public.

But when the Federal Reserve Board put down its credit restrictions, we felt that such a transaction would never get through the Federal Reserve Board. So we terminated the merger discussions, and since that time, Continental has committed additional funds to the company, also in a nonvoting form.

Representative REUSS. You mentioned in your testimony that the small business investment company concept—which, incidentally, was a Republican idea from the Eisenhower administration, which I supported very vigorously—has now fallen upon evil days and is about to be done in, or worse.

Mr. GEVIRTZ. Well, under the recent policy edicts that have been put down by the Reagan administration, it seems that they have stopped issuing licenses in new SBIC's, and they also are tampering with the leverage requirements.

I believe that this committee should look into that, because that is one area of the economy that needs that capital and produces more jobs and more innovations than any other aspect of the economy. And it doesn't affect the Federal budget, either on an off-balance-sheet or on-balance-sheet situation.

So, it is important that this be looked into before the momentum of that whole program is affected.

Representative REUSS. Your company is not now and never has been a small business investment company?

Mr. GEVIRTZ. No. As a matter of fact, we do have an SBIC subsidiary, but it is a very insignificant part of our business, because most SBIC's have, as their objective, being equity investors. And our company is basically long-term lenders, rather than equity investors.

When we founded the company, we were in the venture capital business originally and at that time needed an SBIC. Now it is an insignificant part of our business.

Representative REUSS. Why have you kicked the equity kicker? I would have thought that in these inflationary times that you would

have wanted to season your loans with a little common stock and other warrants or in some method. Are you making enough on that to make up the inflationary creep on interest income?

Mr. GEVIRTZ. Many times, Mr. Chairman, we would have liked to have gotten some kind of equity kickers. But we have found two very serious problems to our growth in doing that.

The first is that when you're making collateral loans and there is a possibility of getting equity, your credit judgment is inevitably affected.

The second reason is that very often there are conflicts, legal conflicts. We have a lien on the assets of the corporation and at the same time we are a major equity lender.

Third, we are more interested in building a company that shows a long-term, cyclical increase in earnings, rather than the up-and-down bulges that you would get if you acquired and sold equities from time to time.

Representative REUSS. Broadening the discussion to the general question of capital adequacy, a number of members of the panel stressed the need for more capital at lower interest rates as a method of getting more productivity and of enhacing growth for small- and medium-sized business.

Is there anyone on the panel who doesn't share the feeling that more capital would be a good thing? Starting, then, from that premise, let me ask: Isn't our present financial system really not very well adapted to getting capital to productivity-enhancing, innovative, small- and medium-sized companies?

You all know the problem, by and large. It hasn't been easy to float common stock issues. The bond market has been in disarray for some time.

We have segmented off savings and loans, given them preferential access to citizens' savings, yet restricted their lending to one form of activity, a worthy one—but nevertheless one form—homes. This is quite unlike the system in most other countries, notably Germany and Japan, where bank examiners discourage banks that make long-term loans for capital investment. They are likely to classify such paper, instead of giving the bank president a medal for making that kind of a loan.

So, who would care to make some observations about the general structure of the American financial system today, and whether it is, indeed, equipped to do its part in the productivity drive which brings us all here?

Mr. LEVITT. I am sure we would all have something to say about that. And I think we probably will. But I recognize that there are a number of distortions that you point out correctly, and a number of others that create a fundamental bias toward the spending rather than saving.

The whole notion of interest deductibility, particularly with respect to housing, creates an enormous incentive for housing, to the possible detriment of other sectors of the economy.

I think this is an area that has to be looked at very, very closely.

As far as small and midrange companies are concerned, however, the notion that financing these enterprises comes from banks and pen-

sion funds is only partially true. Very often it comes more from uncles and relatives.

And if their state of mind is such that they feel their dollars are invested in nonproductive enterprises, such as gold and silver, and various kinds of index funds and exotic collectibles, rather than the risk-oriented enterprises that we have been talking about, that is very destructive to a flow of capital to those newer enterprises.

I think what I'm really saying is that this doesn't lend itself to easy solutions, the passage of one bill or the movement of dollars from one sector of the economy to another. It relates largely to a state of mind, a conviction, on the part of individuals with discretionary funds to invest, that we have a government that not only understands the problems of business but is prepared to address those problems and seek new solutions.

I think that the current administration has certainly introduced a number of innovative proposals. I mentioned before that the question of budgetary controls I think is fundamental to the perception of those with dollars to invest in new risk-oriented enterprises.

And I applaud the administration for initiatives that they've taken in that direction.

With respect to tax policy, I would hope that that policy becomes more focused in terms of creating incentives for the kinds of companies that we're talking about, that it considers very carefully the problem that I mentioned before in terms of the deductibility of interest, on the one hand, and the taxation of savings on the other hand.

Summarizing what I have said is that really we have had the problems that you have mentioned, we've had the distortions in this country, but I think that there has never been a time in our history when individuals and policymakers have given more thought to the problems of our economy than at the present time.

And while I don't agree with all the solutions, I am encouraged by a number of them.

Representative REUSS. Would any other members of the panel want to comment on this question of where does the money come from?

Mr. D'ARBELOFF. Mr. Chairman, I represent a high technology enterprise, and it is clear that technology has rather long leadtimes. It is interesting to me, if we again look at the Japanese, that in my particular field of membrane separation processes the Japanese have announced a 10-year development plan.

I think Mr. Krasnoff referred to a method of financing by the Japanese that is quite different from ours. This method stresses longrun incentives or the long-term performance of companies such as mine, as opposed to measures related to periods of 90 days. We expect, in the United States, to see a better and higher earnings picture every quarter.

The burden is probably more on us than it might be on the Congress or the administration or the financial community, but I think it is extremely important to launch an educational process the concerning this issue that would permit us to maintain the position of technological leadership that we in this country have been known for.

Clearly, we have more technology than the Japanese. They have been able to export better because their financial system permits the implementation of long-term plans.

If we could find our way toward tax legislation that would benefit the long-term holder of a security, then we might very well provide some incentives that would permit us to invest in technologies and reap the rewards of long-term development efforts.

Representative REUSS. Mr. Gevirtz.

Mr. GEVIRTZ. Mr. Chairman, I would like to deal with a couple of specifics with regard to your question.

No. 1, while it is true that the last cut in the capital gains tax brought an enormous amount of new venture capital into the marketplace and it helped the high technology firms, those cuts did not create enough venture capital to impact very significantly throughout the whole society.

We have 10 or 12 million small businesses out there, and most of them need some kind of equity. The venture capital increases, that may have helped 200 or 300 in the number of public issues in the last couple of years, has more than doubled. But, even so, less than 300 companies have been able to come to market to get public money.

So, I think there has to be a further cut in the capital gains taxes in order to encourage people to invest their money in less exciting high technology companies—that is, in some of the more mundane kinds of companies that are also hiring a lot of people and producing a lot of goods and services for this country, and those kinds of companies, which should not be overlooked.

Representative REUSS. Could I perhaps interrupt you there. And then, by all means, make your additional points. Does every member of the panel think that cutting capital gains taxes, whether done by fooling around with the top bracket or by a direct cut in capital gains, would be a good thing for the productivity goal that we have been talking about? There is no dissent on the panel from that?

Mr. LEVITT. Probably the most important thing of all in terms of what could be one for our kinds of companies, as opposed to the larger companies.

Representative REUSS. But what you're talking about is incentives for investors to buy common stock, aren't you?

Mr. LEVITT. That is part of it.

Representative REUSS. Well, what else? What I'm getting at, and I am obviously telegraphing this, is: Wouldn't it be counterproductive to just open the floodgates on capital gains and encourage the Bunker Hunts to buy more silver; and to allow the operators in collectables to go even crazier on them? All of these are diversions from plant and equipment? That is what you're talking about, isn't it?

Mr. LEVITT. Yes.

Representative REUSS. Well, then, why not a little surgical approach to that? Why not a capital gains tax reduction of whatever stupendous proportions you want, and you won't get much argument from me for common stock.

I should add, it would be nice to say common stock in productivity-conscious companies, but I don't really know of a way to cut that in. But why not common stock, period?

Mr. LEVITT. I know there are a number of proposals to exclude artwork and collectibles and so forth from this provision. I think that we're talking about——

Representative REUSS. I'm not just talking about antique furniture. I am talking about land, and much, much real estate other than business fixed investment.

Mr. LEVITT. I think that the capital gains reduction would stimulate not only the purchase of common stock, but also the beginning of new enterprises on the parts of individuals, private companies in many cases, who might not otherwise take that risk.

I have a personal aversion to the kinds of exclusions which direct dollars in a given way. Somehow or another the marketplace has a way of compensating for that, but I would have to think more about that kind of exclusion. But I think unquestionably the capital gains reduction is the most compelling priority insofar as small and mid-range business in America is concerned today.

Depreciation allowances are well and good. I think most of us would support programs of that kind. But they are far, far less meaningful to us than the capital gains reduction.

Representative REUSS. Will any member of the panel defend as a method of increasing productivity in this country the liberalizing of capital gains for speculators in land, real estate, collectibles, commodities? Is anybody for that? [No response.] I am delighted that nobody is, because it really would make no sense at all to write a tax bill that would swipe the just-liberated dollars before they ever got to the useful things that Messrs. Krasnoff, Klein, Gevirtz, and d'Arbeloff have been doing.

Mr. LEVITT. Well, I don't want to suggest that we are against commodity or real estate investment as such, because I think those areas of investment have their place in the marketplace, a very specific place.

Representative REUSS. Well, you are suggesting it, then. Do you really want to help Bunker Hunt to have another try at silver?

Mr. LEVITT. Not particularly, but I believe that commodities trading has an appropriate place.

Representative REUSS. Nobody is suggesting that we abolish commodity trading, or put in any particular headlocks on it. But the question is, should we now liberalize the capital gains tax with respect to the province of commodity trading? Is anybody suggesting that that be done, outside of Mr. Levitt?

Mr. LEVITT. I'm not suggesting necessarily that that be done.

Representative REUSS. You see, we need to know. I would like to get a lollapalooza of a tax law out in the next few months that would help you fellows. But we have got to look at the revenues, too.

Mr. LEVITT. If that was the tradeoff, I would joyfully accept it.

Mr. KRASNOFF. As a more narrowly oriented manufacturer of technological products and an observer of small technological upstarts, rather than one who has to deal with these catholic views of the world, such as Mr. Levitt does, I can assure you, sir, that a narrowly oriented capital gains reduction bill aimed at common stocks would get wide support in the industrial technological field.

Representative REUSS. Good. I'm glad to hear that. Let me now turn to Mr. Gevirtz, who has been very patient.

Mr. GEVIRTZ. Before I get to my other point, I would just suggest that you expand a little bit your concept. I would recommend that we improve the environment not only for the investment in common stocks, but that we create tax benefits for making subordinated loans, and various kinds of other debt instruments, to small and medium size companies, because many of them need long-term debt almost as much as they need common equity.

Representative REUSS. I am sympathetic to your point. And if, on reflection, any of you gentlemen are able to refine that, and give us some guidance as to what ought to be included and what ought not to be, it would be helpful. And I am ready to concede that common stocks alone don't necessarily exhaust the list of pieces of paper that one would like more leniently treated, so that you can get more business fixed investment in plant and equipment. That is all we're talking about, isn't it?

Mr. LEVITT. Yes.

Representative REUSS. That is the aim of the exercise, I would have thought.

Mr. Gevirtz, I interrupted your listing of methods in which financing might become more effective.

Mr. GEVIRTZ. My point is very brief, but in California, Governor Jerry Brown is instituting a set of initiatives that we hope will result in enabling pension funds to be able to invest in small and medium size companies. There are a number of techniques, including insuring pension funds against loss or against a percentage of loss, that are being developed.

And I think that it is very important that we at least consider and analyze whether some portion of pension fund resources could be directed toward the small and medium size part of our economy.

Mr. KRASNOFF. Mr. Chairman, might I make a comment on your observation that the goal, if I understood you, sir, was more fixed investment for business in plant and equipment as the primary goal?

Now, I believe that with a good deal of the technological developments taking place in this country, I'm concerned about that because that would lead in the direction of high depreciation rates as a fundamental cure. There is a good deal of need for venture capital for people who have to make major investment in research and development and little investment in plant and equipment.

Representative REUSS. I noticed your making that point. And since you brought it up now, let's tarry a moment on it. You said in your testimony that you're not enamored of accelerated depreciation, but you think it will benefit the old, large, and stodgy, and not necessarily the young, vigorous, and innovative.

Mr. KRASNOFF. That is correct, although it happens, sir, that in this period in the history of my company, we will be a major beneficiary of accelerated depreciation. We are making major capital investments.

Representative REUSS. You will have to do a little persuading of me on your antidepreciation position, because I would have thought a small company needs this, too. Maybe it needs it as much or more than a big company.

Mr. KRASNOFF. Small companies of a technological nature have, in my experience, relatively little fixed capital investment and relatively

large expenditures in talent and in research and development. It takes them many years to generate a need for large capital expenditures.

Representative REUSS. Now, you make porous stainless steel?

Mr. KRASNOFF. We make a whole variety of kinds of fluid clarification devices.

Representative REUSS. Well, doesn't that process require rather heavy investment in smokestacks?

Mr. KRASNOFF. It does indeed, but for the first 10 years of our growth at our inception, we needed the capital for research and development. I think that is pretty much true of Mr. d'Arbeloff's company. It is pretty much true of any technological company I have ever witnessed. Many years later—we are a 30-year-old company. We have lots of smokestacks now. And we would benefit greatly from accelerated depreciation. We love it when we depreciate things 100 percent a year in Britain. We haven't paid taxes there for years.

But that is not what will benefit the growth of this society, which needs technological development and innovation.

Representative REUSS. Well, I see your point that the rescue may not come too late, but at a time when it is less welcome than it would have been for your organization.

But what about the new generation of Krasnoffs? They are going to need that capital equipment.

Mr. KRASNOFF. They need capital. The DNA companies, the genetic engineering companies, the VSLIC companies, don't need a lot of capital for equipment, but they need an enormous amount for talent and research and development. If your interest is in developing those technologies, you will see that their balance sheets are very low in capital equipment.

Representative REUSS. I favor, as perhaps you don't, some sort of a tax break tailored at research and development. I also think, however, that there is something to be said for depreciation. Let's hear from Mr. Klein on that.

Mr. KLEIN. I, of course, am very much in favor of accelerating depreciation, representing some of the businesses that you referred to as smokestacks. And I think the fundamental industrial businesses, which may not have a high technological content, but which nonetheless provide most of the major products and hardware upon which both our commercial and private lives are based. I think we clearly need accelerated depreciation. We need the cash flow to come back from these capital expenditures that we're putting into modernizing our equipment. First of all, to begin to be competitive with some of those companies in countries which have a clear advantage over us in terms of their depreciation policies. And I would encourage favorable thinking on that issue as a priority right after capital gains.

I think it is clear that we would speak from the perspective of our experience. If you are in a high technology, research, and development oriented company, then your priorities are as Mr. Krasnoff described.

If you are in those businesses which are primarily traditional industrial and which we are competitive with companies that are based in countries around the world where we have clearly been at a disadvantage, and when you recognize the fast changing nature of our problems with the high interest rate environment and double-digit inflation that we face, where the real key to our ability to compete is

cash flow, then I think that accelerated depreciation is important and is needed.

Representative REUSS. Mr. Levitt.

Mr. LEVITT. Mr. Chairman, I would suggest that it really isn't an either/or question. But psychologically, the smaller growing companies tend to think that research and development dollars are of much more compelling importance to them than adjustments to our present depreciation practices.

At the recently completed White House Conference on Small Business, a task force that concerned itself with this issue felt that it was important but insofar as small business was concerned it was less important than some of the other points we've been talking about. A survey of companies listed on the American Stock Exchange found pretty much to the same effect, that where help was needed was in terms of reduced capital gains taxes, in terms of research and development dollars, because these companies were heavily involved in high technology areas; and that, to be sure, depreciation allowance adjustments would be useful, but simply not quite as useful to them as in these other areas.

Representative REUSS. On another subject, a recent study by the House Banking Committee showed that a very high percentage of loans made by large New York banks were made at below the prime rate which they themselves had set up.

Have any of you had any experiences with the prime rate? Do you get it? Do you get a discount off of it? Do you have to pay more than the prime rate? What happens?

Mr. KRASNOFF. We are fairly heavily borrowing short-term funds right at this moment, to the tune of $20 or $25 million, in the New York market. And I suppose there are companies with much better acumen than ours. We have good relationships with four or five banks. And none of them are lending us money below the prime rate. The borrowing rate is the prime rate. There are more or less minor variations in compensating balances. Sometimes an eager bank will forego a compensating balance. That's the experience of one company, but nobody is lending us money below the prime rate.

Representative REUSS. Well, do you think you're getting as low a rate as other customers?

Mr. KRASNOFF. I think so. I think it is just barely possible that some of these institutions may be lending smaller companies rather than larger ones some funds below the prime rate, but I don't know that for a fact. I have heard that said.

Mr. GEVIRTZ. Mr. Chairman, we have done some borrowing currently at below the prime rate.

Representative REUSS. In your companies, particularly the industrial companies, at the table, do you have a formal productivity setup? That is, do you have something like a vice president in charge of productivity? Or is productivity the business of all of your corporate staff? Mr. Klein.

Mr. KLEIN. Mr. Chairman, we operate on a decentralized basis, and in each of our operations we have an officer who has a productivity responsibility. We have been very conscious of productivity from the inception, and have highlighted it as an issue with which to be concerned. We have done some experimenting, primarily on the issue of

quality of workmanship and interest by people in their particular work.

We have, of course, had the traditional quality control after-the-fact type productivity, but we have combined it with attempts to look into the issue much earlier in the process.

So the direct answer to your question is, while it is the clear business of everyone in top management, it has also been given specifically as an assignment to two key executives in our operations.

Representative REUSS. Mr. Krasnoff.

Mr. KRASNOFF. We intend to organize, as I said earlier, everything along very narrow lines, including product lines, and in each case there is a key executive who is responsible for the productivity in that line.

We have also not been excessively proud—we have even attempted a Japanese quality circle type of thing in our operations. I don't know that they are any more effective than any other means that we've found, but we have tried them. We have tried a wide variety of approaches to this, but with very narrow orientation. I believe that's the way to accomplish it.

Representative REUSS. Mr. Gevirtz, I don't think this question really is applicable to your financial company, but if you would care to comment, please do.

Mr. d'Arbeloff.

Mr. D'ARBELOFF. First, I guess I have to say that I am still searching for the proper definition of the word "productivity." At Millipore we have been able over the years to reduce the labor content of our product down to an average of about 12 percent, so output per labor hour is really not a significant leverage point. We have all of our managers involved.

We have established what we call a task force on innovation. Fundamentally, we are trying to be highly innovative as a way of being more productive. One simple example concerns the very high cost of travel. We maintain rather large sales forces throughout the world. I believe we are the first company that has given every one of our sales people—that represents about 500 people—a video playback unit, and we extensively use videotapes as a means of training and communicating to offset meetings and travel, which tend to be much more expensive. We are trying to reduce the overhead factors as much as possible in order to increase our productivity, as opposed to merely looking for improvements on the shop floor.

Representative REUSS. Several of the panelists mentioned the high interest rates as being a very strong negative on productivity generally. Does anybody want to comment further on that?

Mr. GEVIRTZ. Let me give you a specific, Mr. Chairman, because it has to do with a company's acquiring productive equipment. If you had to make a decision right now, if you ran a printing company in Dallas, Tex., about acquiring a printing press, and you wanted to lease it for 5 years, you probably wouldn't make a decision to go ahead. because you would be locked into an interest rate of probably 19 or 20 or 21 percent, because that interest rate would be fixed for the term. Therefore, when interest rates are high, it discourages the entrepreneur from making those productive equipment commitments, because he is waiting for the prime to go down so that his fixed rate commitment will be less.

Mr. KLEIN. Mr. Chairman.

Representative REUSS. Mr. Klein.

Mr. KLEIN. The other direct aspect of high interest rates on the purchase of equipment is that these high rates discourage purchases because in many areas your markets disappear or are shrunk significantly because your customers just don't want to buy when their cost of capital is as high as it has been recently. So you not only have the high interest rate to yourself of the direct cost of purchasing and carrying that piece of equipment, but you have the discouraging market aspect of the issue, which is that you're probably going to have a much longer time period before you recapture your cost because your customers generally tend to postpone buying decisions in this environment.

Representative REUSS. Mr. Levitt.

Mr. LEVITT. I might also comment on the impact of high interest rates on the securities markets. I think at these levels they may very well be untenable, that a lot of margin accounts are going to be liquidated, I would expect, in time because of the punitive rate of interest being paid today, and that will have some impact on our markets as well.

Mr. D'ARBELOFF. Mr. Chairman, I would offer one further thought. Clearly the strength of the dollar is tied to interest rates. Our company, as well as Mr. Krasnoff's, has a large percentage of sales overseas, and I think we also have to be sensitive to our competitive position outside the United States if the interest rates are maintained at the current level.

Representative REUSS. You are suggesting that the present gloriously strong dollar may have some illegitimate reasons for its strength; namely, that we are mismanaging our economy. Hence, we have extremely high interest rates and that causes the dollar to be higher than it would otherwise be, and that is a very poor competitive position for American exports. Is that your main thought?

Mr. D'ARBELOFF. Yes. I'm saying that every time interest rates rise, there's a secondary effect that makes us less competitive, particularly when we're competing with local Japanese firms in Japan or German firms in Germany, for example.

Representative REUSS. Let's see. At least two, Mr. d'Arbeloff and Mr. Krasnoff, are engaged in exports. How about you, Mr. Klein?

Mr. KLEIN. Yes, sir.

Representative REUSS. And many of you are borrower companies? Mr. Gevirtz.

Mr. GEVIRTZ. Yes.

Representative REUSS. Let me ask you, in your exporter's hat for the moment, what are the principal clogs on your exporting more? You have already mentioned high interest rates with their effect of spiraling the international exchange value of the dollar higher than it would be if we had had a better adjusted economy at home and that this is going to hurt you vis-a-vis the Germans, Japanese, and other go-getter exporters. Is that a fair statement?

Would you say that is the biggest cross you have to bear right now?

Mr. KRASNOFF. I would say for the Pall Corporation it is. The combination of the strong dollar and the weak deutsche mark over the past 12 to 14 months has been absolutely catastrophic. That has been very bad.

These things combine, too, to do another thing that we didn't talk about that probably should be touched on, Mr. Chairman, and that is the compelling attraction of Puerto Rico and Ireland, because of their tax incentives, becomes more compelling in these periods of high interest as an attempt to offset other high costs. I find that is affecting many, many companies that I'm in touch with, mine included.

I'm not sure that lower interest would stop us from doing it, but I think we have been propelled forward by that.

Representative REUSS. That doesn't just apply to Puerto Rico and Ireland, though. It applies to Southeast Asia and Korea and the Mexican zone and various other places.

Mr. KRASNOFF. Yes, for other reasons. Puerto Rico, though, is a much more straightforward tax saving for an American company, and Ireland is for a European company.

Representative REUSS. I note that of the industrial companies here, two of them come from or are at least headquartered in the Cold Belt—one in Massachusetts, the other in New York—and a third industrial company is located—and again, I don't know how much of it—in one of the more problem-ridden Sun Belt cities, New Orleans.

Does anybody on the panel have any observation to make about the general question of regionalism and plant location and the economic conflict between Sun Belt and Cold Belt? That isn't the major purpose of this hearing, I might add, but noting where you come from, it occurred to me that maybe somebody would have something to say on that.

Mr. D'ARBELOFF. I might just say very cautiously, since Mr. Galbraith is sitting behind you, that in the State of Massachusetts we have a few problems that we have to resolve to provide incentives for industry before we can put ourselves at the top of the list in terms of industrial locations, but we are working on those.

Representative REUSS. Yes. Although you are doing better than many of your co-brothers and sisters in Massachusetts.

Mr. KRASNOFF. For what it's worth, Mr. Chairman, we are a New York company organized some 30 years ago. We have seen the pull of the Sun Belt; a third of our operation is in Florida. We have four plants in Florida. About a third remains in New York, at several plants in New York, and the other third is in Europe. But we have seen the pull of the Sun Belt over the years; it's almost irresistible.

Representative REUSS. Does any member of the panel have any concluding thoughts that he has not had an opportunity to place on the table? [No response.] If not, I want to thank each member of the panel for a remarkably constructive contribution to our committee deliberations. I know that many of the thoughts, Mr. Levitt, that you and your associates have expressed here will find their way into some of the recommendations and reports that we will be making in the months ahead, and we are most grateful to you.

I think that among other things you have demonstrated that all is not lost, that there are American companies that have admirable initiative and innovative capacity, and many of them are members of your American Business Conference, and we are grateful for your bringing your slide show here this morning.

The committee will now recess.

[Whereupon, at 11:45 a.m., the committee recessed, to reconvene at 11 a.m., Monday, June 1, 1981.]

BUSINESS MANAGEMENT PRACTICES AND THE PRODUCTIVITY OF THE AMERICAN ECONOMY

MONDAY, JUNE 1, 1981

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to recess, at 11:05 a.m., in room 2154, Rayburn House Office Building, Hon. Henry S. Reuss (chairman of the committee) presiding.

Present: Representatives Reuss, Richmond, and Heckler.

Also present: James K. Galbraith, executive director; and William R. Buechner and Timothy P. Roth, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE REUSS, CHAIRMAN

Representative REUSS. Good morning.

The Joint Economic Committee will be holding its third hearing in a series on productivity.

Our witness this morning is Gaylord Freeman, chairman emeritus, board of directors of the First National Bank of Chicago. He has been a leader in the American banking community for many years, and is now technically retired. I am glad to see that he maintains his interest and leadership in public affairs.

We have asked Mr. Freeman to present his ideas for improving productivity in capital investment throughout the economy, and in that connection, an intriguing idea he has recently offered, whereby the American banking community might be able more vigorously to assist in the provision of credit for inflation-fighting productivity, and enhancing investment-building purposes.

We would now like you to proceed as you wish, to give us your views.

STATEMENT OF GAYLORD FREEMAN, RETIRED CHAIRMAN OF THE BOARD OF DIRECTORS, FIRST NATIONAL BANK OF CHICAGO, CHICAGO, ILL.

Mr. FREEMAN. I am retired chairman of the board of the First National Bank of Chicago. I appear here only as an individual. I appreciate your invitation to be here, particularly on a day when you are discussing both productivity and inflation, two of the most serious problems—most serious domestic problems facing our society today.

First, as to what is to be today's major topic, productivity, one of the greatest strengths of our society is our political stability. I know

you have just returned from Paris. My last business visit was 5 years ago, when I called on the governor of the central bank, and on the finance minister, and in each case I asked why they were pursuing an expansionary monetary policy at a time when their inflation rate was already 10 percent.

And in each case, the official answer was along the following lines: The people of Western Europe—they did not like to limit it to France—the people of Western Europe no longer believe that they could live better, generation after generation, under the existing social and economic order, because the people feel that we must move toward socialism; and we in the government oppose that. We are quite agreeable to having a relatively substantial degree of inflation because it will make the people feel that they are doing better, and there will be less urgency in their desire for socialism.

And each said that in your country—in the United States—the majority of the people feel that they can continue to live better in each generation, under the existing social and economic order; and so you don't have that problem.

Well, the fact is that that political stability that results from that is one of our greatest blessings in his country.

The reason that our people believe that is because we have been—we have had a continuously rising level of living in our country. It is of the upmost importance that we continue that opportunity for rising standards of living.

The only way that we—a person, a family, a Nation—can live better is to produce more, produce more goods and services. So, we come to the question: How can we produce more?

To simplify a very complex series of interrelationships, we can say that to produce more, we must work harder, or work longer, or work more cooperatively, or work smarter, have better labor practices, better management, or use more productive tools.

Our people are not prepared to work harder or longer. They can only work a little smarter in each successive generation. There is the possibility of better labor practices, improved management, greater cooperation; but these develop slowly.

Thus, in reality, there is only one way that our people can live better, only one way we can increase our productivity. And that is through the use of more efficient tools.

And then the question becomes: How can we increase the savings and investment which are necessary if we are to have more efficient tools and to stimulate the investment for the design, purchase, and utilization of more productive tools?

It is necessary first to maintain an economic climate in which profitable sales appear reasonably likely; and second, to encourage savings and investment.

You of the Congress face the difficult issues as to how to maintain a profitable economic climate, and how to encourage the desired increase in savings and investment. The Congress is urged to cut taxes to stimulate the economy, with the intention of achieving the first goal, to wit, the maintenance of a favorable economic climate.

But the climate is already overstimulated, after 50 years of excessive deficits and consequent rising prices. Any further aggravation

of deficits—whether caused by increased spending or reduced revenue—would accelerate inflation and be counterproductive.

The economy does not need more stimulation. The economy needs more stability.

Tax cuts are also urged as a cure for inflation. Is that wise? Cutting taxes at the lower levels conceivably might be justified on the grounds of justice, or possibly justified on the basis of political necessity. But it is hard to feel certain that it would have any direct impact on savings, investment, or productivity.

The reduction in deductions from payrolls will let our people enjoy more consumption which, in a period of stable prices, is highly desirable; but those additional expenditures for consumption will not aid productivity or reduce inflation. On the contrary, a tax reduction that encourages consumption would itself be inflationary.

It is the thesis of the Kemp-Roth proposal that a large share of such a tax reduction would go into investments, and the President has said that "the average worker's wage will rise in real purchasing power by 8 percent, and those are after-tax dollars."

But is it reasonable to anticipate that lower income families would in fact save and invest that 8 percent, or any significant part of it?

A man earning $15,000 would get maybe, in the beginning, $20 more in his semi-monthly payroll checks. Is he going to save that, put that aside? Or is he more likely to spend it for some long-postponed consumption purchase such as a car, refrigerator, or bigger television?

It is not only inflation that has discouraged savings and investment. A great many of the Government programs—social security, unemployment insurance, food stamps, medicare—useful as they may be, have all tended to relieve the general public from feeling the necessity of savings. Such savings as they have are largely made for them, through company pension plans and the Government plans, which will not in any way be affected by the proposed tax change.

It is not likely that any significant savings and investment would probably be provided by the upper income families?

You must bear in mind that the people have been discouraged from savings by having such a high rate of taxation—up to 70 percent—imposed on investment income. This is certainly a counterproductive measure, if you are seeking to encourage investment in order to absorb the losses of revenue due to the Kemp-Roth program.

The elimination of this 70-percent penalty on savings income has been stretched out for 3 years, and the Democrats have recommended its adoption right away, which is something of a switch.

If you would not want to give upper income families an apparently larger benefit, would it not be more just, more effective, and far less inflationary to design an investment tax credit for individuals, rather than just spread the tax relief goodies to all voters, irrespective of their savings and investment?

What are the other advantages?

The political necessity—whether it would justify the cut—is something you, the Congress, would have to decide. Much as we would like to have our personal taxes cut, you might decide to postpone that pleasure until we are closer to a balanced budget.

It is argued that selective tax reductions—a faster writeoff of new investment, a larger investment tax credit, a reduction in the maximum

personal income tax rate to 50 percent, and perhaps a reduction in the capital gains rate to 20 percent—would encourage saving and investment. I think it would.

I would like very much to see such measures adopted, as I am sure many of your—many Members would. But adoption of such tax reductions, which offhand would appear to favor those of higher incomes, at a time of curtailment of social programs, might appear to be inequitable. And thus, it is fairly certain that these tax reductions will work; that is, that they will, in fact, encourage savings and investment, which will both increase jobs and lead to the production of more goods and services, and a better life at all levels.

Thus, these major tax changes should not be made as a tradeoff for budget cuts, or on any partisan basis; but rather, after a determination of whether or not these suggested changes will, in fact, achieve the desired aims of a stable economy with greater savings and investment, and a resultant increase in jobs and productivity.

That should be the determining question: Will the tax cut work? Will it stimulate savings and, as a consequence, investment in jobs?

My friends in the administration feel they have already demonstrated it will work. I have not been able to follow the argument in the Congress that closely, but it seems to me that there still is need for further demonstration. For help on the fundamental issue, the Congress may want more convincing evidence of the effect of such measures in the past—in this country or elsewhere.

If such changes do not lead to greater stability, improved productivity, or help reduce inflation, then as a nation we cannot afford them. But if they would achieve those goals, then we cannot afford to fail to adopt them.

I assume that your committee, or others on the Hill, are studying the most critical issues and obtaining the best advice available. Thus, I would conclude, on productivity. That is, that while better education, better health, better labor practices, better management, greater cooperation can all contribute to greater productivity in the long run, in the short run the only way to increase productivity is to use more efficient tools.

To encourage the necessary savings and investment, we need a less inflationary, more stable economy, and tax incentives which we have reason to believe will be effective, not just popular.

I would urge some form of tax credit for individuals to save and invest, which might be the most just and effective way to achieve this.

I would think that if you ask your very competent staff to work out a system that would increase the share of aftertax income to those who do save and invest, they could work out something that would be a very real incentive.

Now, to the next subject of inflation. You were good enough to invite me to be here today, because you had read a reference to a modest proposal which I had made in a recent speech at the University of Northern Michigan.

The suggestion I had made, and the reasoning behind it, are set forth here.

If, as is the opinion of most economists, the basic cause of inflation is too rapid an increase in the money supply in relation to production,

we must ask: What is the money supply? Who creates the money supply? How can the growth of the money supply be moderated to the level of the rate of increase in production? What should the Federal Reserve be doing? And what can the banks do? And is any legislation needed?

As to the first point—what is the money supply?—in its narrowest definition, it is currency in circulation and demand deposits; what most people think of as their money supply; cash in their pockets and their checking account.

But as currency represents only one-third of the total, and varies more on a seasonal basis rather than any long-term cycle, it is clearly the increase in the other element, demand deposits, that is the basis of the increase in the money supply.

Who creates the money supply? The bankers do, by making loans. As I am sure you realize, when a bank makes a loan, it seldom hands out cash; it merely makes two entries on its books. On the asset side, it enters the amount of the borrower's note; on the liability side, it enters a credit to the borrower's checking account.

So, without any dollar bills being printed, or any coins minted, money has been created. The only limitation on the bank's ability to create that money is the requirement, if it is a member of the FDIC, to deposit in the Federal Reserve, reserves equal to that percentage of its deposits which the Federal Reserve from time to time specifies. At this time, that would be, for a larger bank, 15 percent of the demand deposit so created by that loan.

Thus, the bank can make loans of more than six times the amount of its available reserves. Of course, if the bank makes loans to someone who creates a new bank, the total amount of loans—and hence the money supply—can be further expanded manyfold.

Well, if inflation is due to too rapid an increase in the money supply, and the increase in the money supply is caused by an excessive growth in demand deposits, and demand deposits are created by bank loans, and the banks make the loans; then, do the banks cause inflation?

They certainly do not think so. They consider their role really as neutral, with the Federal Reserve determining the volume of money. They consider that it is up to the Federal Reserve, by fixing the percentage of reserves to deposits, and by other actions, to determine how much the banks can loan. And as long as they loan within those limits, they are all right.

In fact, the banks do create the money supply. There are, however, other inflationary influences that perhaps we should mention in passing.

The frequency with which money changes hands—referred to as "velocity"—aggravates the inflationary impact, even though it does not itself increase the supply.

The net inflow of foreign funds, as a result of foreign trade surpluses, or as a result of foreign investment here, may add to domestic balances, as do Federal Reserve purchases of securities as a part of their open market operations.

Federal deficits do not themselves automatically add to the money supply, but indirectly they do, because the Federal Reserve is always encouraged, or pressured, or feels the responsibility to either provide

83-184 O - 81 - 7

adequate additional reserves to permit the banks to make the necessary purchases of the Government bonds, or to finance the deficit directly by the Federal Reserve buying the bonds and crediting the Government's account with the Federal Reserve, which results in transfers into commercial bank deposits and becomes a part of the money supply.

Either way, deposits and the money supply are, in fact, increased by the Federal deficits. Such deficit financing for the Government's payment of wages, welfare, and defense, et cetera, is especially inflationary because it does not result in any increase in productivity or production, as distinguished from business borrowing for the purchase of improved production equipment.

The burden of the debt—which, of course, becomes heavier as the debt increases and interest rates rise—is less of a repayment problem—great as that may be—than it is a severe inflationary influence, as a result of the Federal Reserve monetizing that debt.

Thus, it may not be quite accurate to say that only the banks create the money supply; but they do create the great majority of it.

However, the Federal Reserve either makes it possible for the banks, through the discount rate reserve requirements, or open market policy, to create additional money, which amounts to perhaps 70 percent of the money supply; or the Federal Reserve does it itself, through monetizing the debt, buying the Government securities.

So we come to the question: How can the growth in the money supply be moderated to the rate of increase in production?

The Federal Reserve has the knowledge, the power, and the responsibility. But it alone does not—or at least has not—exercised the power with sufficient determination to restrain inflation.

Why not? For three basic reasons:

First, the Federal Reserve's responsibility is not just to prevent inflation. The Employment Act of 1946, as amended by the Humphrey-Hawkins Act of 1978, specifies that the President shall set forth, in each economic report, how his program promotes the purposes of the Full Employment and Balanced Growth Act of 1978.

And the Federal Reserve has, as a result, three obligations to Congress: First, the Board shall report to Congress twice a year its analysis of the economy, and its plans to increase or decrease the money supply; and the relationship of its plans to the President's goals, as stated to the Congress.

Second, the Board shall consult with the appropriate committees of the House and Senate about its policies.

The act does not require the Board of Governors to comply with the programs of the President or the Congress, but third, it does require that the Board explain any reason why it subsequently concludes that its earlier announced policy cannot or should not be carried out.

This calling of the Federal Reserve to account does impose some restraint.

Second, although the Federal Reserve, and the Central Bank in virtually every developed country, is said to be independent, that independence is far from absolute. It is a matter of uncertain degree. Although it is theoretically free of control by the executive, it may be subjected to considerable Presidential pressure and often is.

Furthermore, its existence and responsibilities and powers were created by the Congress; and the Congress can, at its discretion, change the powers and duties of the Federal Reserve or terminate its existence. Thus, the Federal Reserve is far from independent. It stands in awe of the Congress all the time.

Various governors of the Federal Reserve Board have spoken quite strongly of the need for monetary restraint, but the political realities are such that the actual restraint has been quite moderate. Why? Because the elected officials and the executive and legislative branches want the voters to be happy.

And in the short run, the voters prefer plentiful and cheap credit, rising wages and benefits, rather than tight money and high interest rates and temporarily high employment, even with the uncertain prospect of lower inflationary rates.

Third, the Federal Reserve, when imposing any restraint stands alone to face the criticism of each special interest group that wants more extensive and cheaper credit. In the aggregate, those special groups constitute virtually the entire electorate. The Federal Reserve stands alone.

So, we might ask ourselves three questions:

Is there any way the Federal Reserve's power and its determination can be strengthened?

Yes. It could be done, at least in theory, through congressional establishment of a limitation on the amount of liability which the Federal Reserve could incur. Or the Federal Reserve might voluntarily—and that would be more desirable—it could voluntarily control the monetary base, which, in turn, is the total of its own liabilities, which it can monitor day to day.

Under these circumstances, the Federal Reserve can stimulate the economy by increasing its liabilities by making loans to banks or borrowing Government securities or tighten credit by selling bonds or reducing loans.

A setting of a limitation on its liabilities would restrict its power to stimulate. This might require the giving up of "pegged" Fed funds rates and abandoning its 13-year-old arbitrary policy of fixing reserve requirements on the basis of the amount of deposits 2 weeks earlier. Such a change, whether legislatively required or voluntary, should establish targets for money and credit growth, consistent with a declining rate of inflation.

Constant comparison of actual results with such target rates should serve as an effective tool to curtain inflation and inflationary expectations.

Milton Friedman and a growing number of other economists urge such a course. If such a program were adopted and pursued with courage, there would be little need to enlist the cooperation of the banks. They would find their own reserves so restricted that they would be unable to expand their loans significantly. But if such a course is not pursued—and political pressure will probably prevent it—then the Federal Reserve may need some help from the banks in carrying out a moderately restrictive policy.

Can the banks help? If these practical limitations on the power of the Federal Reserve constitute a significant handicap to its efforts to

moderate the growth of the money supply, do the banks feel responsibility to the general public to voluntarily moderate the growth of their loans and, hence, the money supply? Probably not today.

If one bank cuts back on its loans, its competitor down the street will take its customers away from it. On the other hand, if the several banks, concerned that increased lending is inflationary, jointly agree to moderate their lending, that would constitute a violation of the antitrust laws. Thus, there does not seem to be any effective measure that we can expect the banks to take.

When David Kennedy was Secretary of the Treasury about 12 or 15 years ago, he called the heads of the top 10 or 20 banks to his office in the Treasury for the purpose of encouraging us to reduce the growth of our loans. But between the time he invited us and the time we got there, he realized that he could not ask us to agree to do that, because that would be a violation of the antitrust laws. And he had to have two men from the Antitrust Division of the Department of Justice sit at the table with him and the bankers.

And all he could say was, "I wish you would curtail your loans; but I cannot tell you to, and you cannot agree to," which made it somewhat ludicrous and certainly less effective than it would have been if he could have said, "Will you agree to moderate your loans?" And everybody would have looked at everybody else, and they would have said "OK. We will—at least for a period—and see how it works."

The suggestion which I have made, to which you alluded, is that the banks be permitted to work in concert to moderate growth in loans and money supply. This would require the enactment of an amendment to the antitrust laws that would provide that whenever and so long as the Board of Governors of the Federal Reserve System shall declare that it is in the public interest to restrain the rate of growth in bank credit, it shall not constitute a violation of any antitrust laws for groups of bankers to agree together to mutually restrain the rate of growth in their loans, either in total or in such types of loans as they may consider especially inflationary.

And if it was felt that the specified particular types of loans—like the last time David Kennedy wanted us not to make loans for acquisition purposes, if it is felt that it would be wrong to specify types of loans, then the agreement would merely be to reduce growth in the loans, the total loans.

To consider wide support of such legislation might be worthwhile to make it symmetrical, to allow it to expand, during a period when the Federal Reserve has declared that to be in the public interest. Such legislation would not regulate banking.

On the contrary, it would free banking from an existing limitation of the antitrust law, but only to the extent and only as long as the Board of Governors declared that such exemption from the regulation was in the public interest.

Enactment of such legislation would enable the Federal Reserve to solicit, but not require, the support of hundreds, perhaps thousands of banks throughout the country. Although it might appear that the powerful Federal Reserve would be seeking the assistance of the less powerful banks, that is not entirely the case.

The three weaknesses of the Federal Reserve which I mentioned: Its implied duty to support the President's economic goals, its lack of real independence and its lonely position do not extend to the banks.

You, the members of this important congressional committee, may ask whether the Nation's commercial bankers would support the recommended change in antitrust laws. I cannot answer that, because I have not asked any of them. But I would guess that natural resistance to change, plus the hesitation to assume additional responsibilities—if and when encouraged to do so by the Fed, would probably restrain them from any aggressive support of such legislation.

But we should ask: If the legislation were adopted, would the bankers assume the responsibility when so requested by the Federal Reserve? Probably only a small group would, but they would be a group of the largest banks, 50 or 100 or the largest banks—if they agreed they could assert a very anti-inflationary influence.

Bankers, like other businessmen, are interested in their current profits. They have to show their stockholders quarterly increases in their earnings if they can. But they tend to take a longer view of their operations and assume a somewhat greater responsibility to maintain a stable economy.

After the Federal Reserve's declaration of the need to moderate loans, if the Chairman of the Federal Reserve or the Secretary of the Treasury were to call in the heads of 20 or 50 of the largest banks and ask them to agree to moderate the increase in their loans or, less desirably, specific types of loans, I believe they would agree and that they would carry out their agreements, even at the sacrifice of some earnings.

Today that would be illegal. I am merely suggesting that legislation be adopted that, when the Federal Reserve declared it to be in the public interest, it would be legal.

Thank you very much.

Representative REUSS. Thank you, Mr. Freeman.

The Joint Economic Committee is always looking for original and constructive ideas, and you have placed several such before us.

Before getting to the main subject of my interest in your testimony, let me say that the first part of your statement, having to do with how do we, via the tax system, stimulate investment and not stimulate inflationary things, to me makes abundant sense.

I have just returned from a week in France, where one of the very successful things done by the previous Government of France, which happened to be a conservative Government, was the so-called Monroy plan, after their Minister of Economics, who caused to be put into effect an arrangement under the French income tax, whereby every French person could take about $1,000 of income a year and, by putting it into the French equivalent of common stocks, get a substantial tax credit. That is the essence of it. And it worked extremely well.

The French stock market, the bourse, had been a nonentity for hundreds of years. And diffusion and amount of ownership of common stocks went up enormously under this program. It does increase the saving, and it also increased investment. And it did so at a minimum cost to the French revenues and treasuries.

I think you were suggesting something in that general area, specifically calibrated and tailored to what is needed, namely more savings and particularly more investment in business, plant and equipment. And common stock is a pretty good way of doing that.

Mr. FREEMAN. Yes, sir.

Representative REUSS. So, I think you are very much in tune with what we ought to be doing in the fiscal field.

But now, let me turn turn to the monetary field, where you make what I think is your most significant contribution to our thinking. And there I am referring to the last part of your testimony, where you say—and I will read it, because it really sums up your proposal, where it is underlined. You urge:

> Enactment of an amendment to the antitrust laws that would provide that whenever and so long as the Board of Governors of the Federal Reserve System shall declare that it is in the public interest to restrain the rate of growth in bank credit, it should not constitute a violation of any antitrust laws for groups of bankers to agree together to mutually restrain the rate of growth in their loans, either in total or in such types of loans as they may consider especially inflationary.

That is the nub of your proposal?

Mr. FREEMAN. Yes.

Representative REUSS. You have provided some interesting historical background, which, when you testified a moment ago, that back 10 or 12 years ago your fellow Chicago banker, Secretary Kennedy, when he was Secretary of the Treasury and worried about inflation and where bank credit was going, called in a dozen or so, or 20 of the leading banks and asked them to restrain their lending for inflationary purposes, thus enabling them to increase—or at least not decrease their lending for anti-inflationary business, fixed investment purposes. And how, sadly, it came to nothing, because of fear on the part and their lawyers—and I am not for 1 minute going to suggest that that fear was hysterical—that they might be violating the antitrust laws if they went along with that suggestion.

Now, let me pursue your central point and try to block out what is the heart of it and what may be things in it that are not so important.

In your statement you say: "To consider wide support of such legislation might be worthwhile to make it symmetrical, to allow it to expand, during a period when the Federal Reserve has declared that to be in the public interest."

I think it is very fairminded of you, and I congratulate you for wanting to be symmetrical. But I wonder if that is really needed, if we are in a time, say, getting out of a depression or a recession, when the Federal Reserve and everybody else would say that credit should be expanded? I would not know that you would really need an agreement to do that if the Fed would loosen the money supply or do whatever needs to be done to make credit available.

I would feel that the banks, all by themselves and without any particular agreement, would make credit more available and bank loans more available, that therefore that symmetry would occur through the operation of natural and sensible laws, rather than through any needed amendment to the antitrust laws; would you agree?

Mr. FREEMAN. I would agree; yes, sir.

Representative REUSS. Next, you say that probably you would not need to make this program of yours work to invoke all of the 14,000-odd banks in the United States; that, in fact, the leading 50 or 100 banks are the ones who, in a meaningful way, could contribute to an anti-inflationary credit program. Would that be a fair statement?

Mr. FREEMAN. Yes, sir.

Representative REUSS. So, if we are considering amending the antitrust laws—and I, for one, am ready to consider that right now—it would be enough to make its ambit the largest banks, whether that is $50, $100, or those over $1 billion in assets. That is a matter of perhaps some discussion, but if you included the big New York, Chicago, San Francisco, Los Angeles, and Houston banks; or maybe the Minneapolis and Milwaukee banks, and a few other places, that would be about it, wouldn't it?

Mr. FREEMAN. Yes, sir. And there exists an association of the Association of Reserve City Bankers, made up of the larger banks in those cities in which the Federal Reserve has an office, either main office or a branch. And that organization is 300 or 400 members. They are organized, and they are used to thinking about the problems of the society, as well as their own problems. And that would be an easy vehicle through which the Secretary or the Chairman could reach and seek help.

Representative REUSS. You see, what I am trying to do is to block out the orders of a possible statute amending the antitrust laws, so it would not bother you if that statute focused on the larger banks, maybe the 300 or 400 you are talking about, maybe even a smaller number?

Mr. FREEMAN. I don't know the relative merits of the statute limiting it that way. There might be many banks that would feel that they were excluded from doing something good if they were not included, and there might be—you would know more about it than I—there might be some legislative weakness in limiting the exemption from a statute to only a few. It may be thought to be discriminatory. The net effect would be what you are talking about.

Representative REUSS. Perhaps the way to handle it would be a hearing. Inevitably the American Bankers Association, and particularly the community bankers and the independent bankers are going to be testifying, and it should be left to them. If banks other than biggest banks think they can be patriotic on an individual basis and do not need to be part of an agreement, I would have no desire to include them.

If, on the other hand, they felt that they were being left out, they certainly wouldn't need to. But it seems to me it is not essential to what you have in mind that we go beyond the largest banks.

Mr. FREEMAN. Right.

Representative REUSS. A third point I raise is this: You refer, really, to two variations on the theme. One is overall restraint in the total growth of bank loans; the good, the bad, the inflationary and the non-inflationary. And then the second point you make is with respect to specific kinds of loans, those that are especially inflationary.

We know in a general way that dichotomy. We know loans for business fixed investment, plant and equipment, research and development,

are excellent noninflationary loans. We know also that loans for commodity speculation, for corporate takeovers, while they certainly should not be excluded or made illegal, and there are gradations within that category, that by and large in terms of inflation, those are the kinds of loans that cause America to take its eye off the ball and think more in terms of financial manipulation than in terms of getting out there in the plant with productivity enhancing, inflation fighting investment. Is that not true?

Mr. FREEMAN. That is absolutely true.

Representative REUSS. I now come to my point. Isn't that qualitative distinction between inflationary and noninflationary or anti-inflationary loans really the important one? When you get to the general increased level of bank lending overall, isn't that something which the Federal Reserve, the money managers, after all, can handle by general, across-the-board, meatax monetary policy? And wouldn't emphasis on that in our new permissive statute that we are talking about, that which would grant an antitrust exemption, wouldn't emphasis on the general growth in overall across-the-board bank lending be a little discriminatory toward the 50 or 100 or 300 or 400 banks that in practice you and I would envisage being invited to enter into some such sort of an agreement? Because if they agreed to limit the rate of increase of their overall bank loans, the good and the bad alike, the inflationary and the anti-inflationary alike, somebody else would get the business; and that does not seem to me quite fair.

Mr. FREEMAN. That is the way the banks feel.

Representative REUSS. I don't blame them. I think that while one probably would want an exemption from the antitrust laws for both types, as you suggest, the one which I think would really be helpful and not unreasonable to ask of banks and most praiseworthy for them to originate, would be in what you call specific kinds of loans.

I guess my question is: Would you agree that in practice, these antitrust exempt agreements might well concentrate on types of loans rather than on overall lending? Because the latter could rather well be controlled by overall Federal Reserve monetary policy.

Mr. FREEMAN. Yes. There are two sides, two different views on that. I think in general, people in the current administration and the bankers themselves would probably say we never like to have any discrimination about the types of loans by the Fed or the Congress. The market should determine where it goes. But I would accept your line of thought, Mr. Chairman, during these periods which we would hope would be relatively rare and responsive to particularly unhappy circumstances where the Fed would grant this exception. I think in those rare instances where there was a very real need, it would not be inappropriate to specify particular types of loans which were felt to be particularly inflationary.

After all, what we are proposing is that this be an exemption from the restraint. But we are not requiring any bank to agree or participate, so we are not taking away rights. We would be saying the government encourages you to find ways to restrain these particular types of loans. I do not think that is a violation of any rights.

I think it would be, though, kind of contrary to the ethic that I have grown up with. I think it would be justified in this kind of a situation.

Representative REUSS. Your expression and use of words is exactly what I have in my own mind on this. What we are talking about is not any attempt, rigorously, to define what is an inflationary or noninflationary loan, and certainly not to make it illegal or in any other way reprehensible for a bank to make a particular loan that you or I might abstractly criticize or praise, as the case might be; but to enable the bankers themselves, the leading national minded bankers of the country, to make a contribution to inflation in the age ahead of us where I think everybody agrees credit is going to be short. There is not going to be the ability of the banks and the financial mechanism of the country generally to respond to all the demands for new energy sources for rebuilding our industry, for revitalizing our cities.

There is not going to be credit in the extreme abundance that was true during most of your active financial life, and so it is worth noting that private commerical bankers in almost every other industrialized democracy have recognized the sort of obligation to pitch in with the government and participate in the fight against inflation.

I think we have to ask the same thing of labor in terms of wages, and the same thing of business in terms of cartelization and prices, foreign trade policy and so on, if we are going to achieve the breakthrough that we have to achieve to fulfill the goals that you referred to in the first part of your statement.

Would you agree that maybe there is a new era, and the fact that banks in the past—and the American Bankers Association, let's face it, have not supported what is in some instances called credit allocation, governmental credit control. It does not necessarily mean that, if protected against prosecution for doing what is their patriotic duty, they might have a different view in the days ahead.

Mr. FREEMAN. Yes. Credit allocation is a bad word, and I would not want to be eliminated from the family of bankers by ever swearing that wickedly. But the fact is in the years ahead, individuals, businesses, unions, banks are going to face frequently the choice of voluntarily acting in what is recognized as the best interest of the country, or refraining from such cooperative effort until they are required to. And it would seem to me that in the great majority of such instances, it would be far wiser to participate with the government in examining what is in the interest of the nation and going much further to cooperate in that line, rather than just sit back and condemn the government until the government is forced to limit their freedom.

I have seen this in the last few years in several important instances, not related to the banking business, where a spokesman for one part of an industry will just say: God damn the government, God damn the government, God damn the government; and dig in their heels and resist and complain, and others have said: Well, let's look at what the government has to consider. What are the greater public interests? And let's see if we can't adjust our thinking and the government's thinking to a common point which will be good for the public and good for us, too. And the latter course is far more preferable.

Now, from a private institution's point of view, I would say the survival of the private enterprise system, the private property system, requires an alertness on the part of business not to give up major rights, unless it is very important for the national interest. But I would also

say that unless they are willing to take a broader view of their role, they may not have a private property system to protect.

We have seen the rest of the world change quite a little in our lifetimes, and I think that all segments of our society are going to be faced with the necessity, the voluntary necessity of longer views and greater cooperation with the government and with other institutions in our society.

Representative REUSS. I have noted that the point of view which you this morning expressed is more and more appearing in the spoken and written words of thoughtful representatives of the business community. For example, I have just today looked at the just published report of the conference—an organization supported in large part by some of our leading corporations, entitled "Inflation; the Crucial Challenge in the 1980s." And on page 36 of that report where it talks about monetary policy it says the following, which I will just read to you:

> Monetary policy, one can hope, will avoid rates of increase in money and credit that would themselves be direct causal incitements to inflation. It is not clear that the Federal Reserve's present powers are capable of doing this efficiently. Other devices that reach borrowers and lenders more immediately deserve consideration.
>
> In this general functioning with the complex system of causes, the Federal Reserve's—it's principal effort—by which I think the author means the Federal Reserve's and the banks'—should be to assure continuing availability of credit for investment and constraint on the uses of credit for other purposes.

Now, that is really what we are talking about, isn't it?

Mr. FREEMAN. Yes, it is.

Representative REUSS. It does not go into how you achieve this?

Mr. FREEMAN. No.

Representative REUSS. But I think you have presented to the Congress a most ingenious proposal; ingenious in that it avoids the question of some bureaucrat determining whether a given loan is for investment or for some less anti-inflationary purpose.

All that the banks would be doing—and they would be doing it voluntarily with the seal of approval of the Federal Reserve, and I should think the attorney general, I think the banks' lawyers would probably insist on that and I would not blame them—all that the banks really are asking to do is to enter into a voluntary agreement to stress to the maximum possible extent anti-inflationary loans for investment and to—not stress other loans. From there on out it is largely the individual conscience of the bank which is going to govern how they do it, and I suppose a banker could sign such an agreement with his fingers crossed and a determination not to abide by it, a secret determination not to abide with it.

But I don't think so. I think if he is going to do that, he does not have to sign up at all. Nobody is going to punish him if he does not. But if he signs up, I should think that there would be a still, small voice in the structure of the banks and its vice presidents and assistant vice presidents and loan officers that would say:

> Look, it is to the Nation's interest to make anti-inflationary loans. And unfortunately, since in this particular period under history, we have got a bad inflation problem on our hands, it is not in the Nation's interest to make loans that may simply make a bad matter worse.

Would you accept that statement of what your proposition is?

Mr. FREEMAN. Yes, I would. And going back to the Conference Board's paper, it strikes me that inflation is not an economic problem. It is not even a political problem. It is really a moral problem. We have all wanted to enjoy more than we produced. And just as in transfer they were trying to make the people feel artificially well off, they encouraged a degree of inflation. So have we lived beyond our means. And the day has come when we realize we should live within our means, and perhaps even save a little bit.

And the frightening question in my mind is: Are we intellectually, morally strong enough to voluntarily subject ourselves to disciplines that are necessary to preserve our money and to preserve our democratic system? Or will we keep on enjoying one more drink, until there is an absolute collapse? And I do not feel certain that I know which way we will go, although I have hopes.

Representative REUSS. I conclude, then, by understanding your testimony to this effect: Since it will not really do to say to people, well, if you want more, just work harder—that's too simplistic a solution—and since only by the formation of real capital, tools, equipment, and factories, and I would also include research, can standards of living be enhanced. And since you think, and I certainly agree, that nobody needs now to tell the American people that all growth is over and that we simply are in a downward slide from here on out, the only way you are going to achieve this is by saying that greater attention is paid by business, labor, the Government, and to this you add the banking system, in making possible more business fixed investment.

Mr. FREEMAN. Yes.

Representative REUSS. You have made a real contribution to our thinking. Who knows, something might come of this, and you might even be invited back to Congress to testify, I would hope, on behalf of the American Bankers Association.

Mr. FREEMAN. Oh, no.

Representative REUSS. Thank you very much.

Mr. FREEMAN. Thank you, sir.

Representative REUSS. You have added a great deal to our hearings.

We now stand in recess until 2 p.m. this afternoon, where, in this same room, we shall hear from C. Jackson Grayson of the American Productivity Center and by corporate leaders of Westinghouse Electric, Honeywell, and Beatrice Foods companies to give us some practical examples on their part of how productivity may be increased.

We now stand in recess until this afternoon.

[Whereupon, at 12:07 p.m., the hearing was recessed, to reconvene at 2 p.m. the same day.]

AFTERNOON SESSION

OPENING STATEMENT OF REPRESENTATIVE REUSS, CHAIRMAN

Representative REUSS. Good afternoon.

The Joint Economic Committee will be in order for a continuation of its series of hearings on productivity and what can be done to enhance it.

We are privileged this afternoon to have an all-star team before us, headed by our old friend, C. Jackson Grayson, who for some years, has been head of the American Productivity Center in Houston.

Mr. Grayson and his constituent organizations have been out in front, particularly on delineating ways in which the private sector, which, of course, is the sector where productivity must come from, can do something about its own destinies.

He has brought with him a group of leaders from various sectors of American industry. Thomas Murrin of Westinghouse Electric, James Renier of Honeywell, and Ted Olson of Beatrice Foods Co.

We are delighted to have you here.

I had wanted to call upon Mr. Grayson first, but our very esteemed colleagues, Congresswoman Heckler, is particularly anxious to hear the testimony of Mr. Renier and must leave for Boston later on this afternoon.

So, I am going to call on Representative Heckler for a word of welcome and encouragement.

And then, Mr. Renier, if you will prepare yourself, we will hear you first.

And then we will, as we always do in Congress, pursue the regular order.

OPENING STATEMENT OF REPRESENTATIVE HECKLER

Representative HECKLER. Thank you, Mr. Chairman, I want to thank you personally for the consideration you have given, and I want to also express my esteem for all of the members of the panel, particularly Mr. Grayson. Many of you have business interests in my home State of Massachusetts. And I look forward to reading the record.

I have read your prepared statements in advance, but I look forward to the record of responses to the questions which will be raised during this hearing.

I would like to say, for the record, that this committee is very familiar with the issue of productivity. We have held hearings for several years.

The causes of the productivity decline are all too familiar. Inflation has played a role. The tax code tilted against saving and investment has played a role. Stop-go economic policies have contributed to uncertainty and to industry decisionmaking, which emphasizes this quarter's profitability rather than long-term growth.

Increasingly, the future is held hostage to the present: Modifications of existing products and processes are substituted for the development of new products and processes. R. & D. projects are jettisoned because rates of return are too uncertain and because inflation and taxes erode their value. And acquisitions of existing enterprises are substituted for new plant and equipment investment.

Government's role in the productivity decline is pervasive. Monetary policy has been inflationary. Excessive Government spending and confiscatory taxes have transferred resources from the private to the public sector. And regulatory excesses have increased producer costs, driven up product prices, and reduced employment and output growth.

None of this is new. What is new is that Government is beginning to wake up. The administration knows what must be done. And those of us in the Congress who support the President's program know what must be done.

What is required, above all, is an environment of economic policy stability, an environment in which long-term planning can proceed unimpeded by ill-advised attempts at "fine tuning." An environment in which rates of return to work effort, saving, and investment are increased rather than reduced. An environment in which risk taking is rewarded rather than punished. An environment in which private rather than public sector growth is relied upon to increase real income, employment, and output.

Government must, in short, recognize what it cannot do. It cannot fine tune the economy.

It cannot, by legislative fiat or by any other means bring about an increase in risk taking, in work effort, in saving or investment.

But it can reduce marginal tax rates. It can reduce spending growth. It can minimize the costs of regulatory initiatives. This is what the President's program for economic recovery is all about. We in Government can make no stronger contribution to productivity growth than, in my judgment, to pass the President's program. And pass it we will.

Government's role is clear. But productivity growth begins on the plant floor. We look forward to hearing your views on the effects of management practices on American productivity.

I wish to again express my sense of deep respect and gratitude to the witnesses who have traveled many miles, who have competing interests, competing claims of importance on their time, to give this committee and our congressional record the benefit of your valid and very valuable management experience.

I look forward to hearing from all of you.

Representative REUSS. Thank you, Congresswoman Heckler.

Congressman Richmond, do you have any opening statement?

Representative RICHMOND. No, thank you.

Representative REUSS. We will get right down to business.

Mr. Renier, if you would be kind enough to give your testimony.

Let me say, Mr. Renier, as all of the other witnesses, you have a comprehensive prepared statement; and under the rule and without objection, it will be received in full into the record.

And now proceed in any way you care to, sir.

STATEMENT OF JAMES J. RENIER, PRESIDENT, CONTROL SYSTEMS, HONEYWELL, INC., MINNEAPOLIS, MINN.

Mr. RENIER. I am James J. Renier, president of Control Systems, Honeywell, Inc.

Honeywell is an advanced technology company with 1980 sales of $4.9 billion, placing us 71st in the ranking of U.S. corporations. But with 97,000 people worldwide, we rank 22d in employment. Thus we are a people-intensive company and for this reason I believe we represent a valid data point in a discussion of the human aspects of productivity.

Honeywell began almost 100 years ago making controls for home furnaces and since then have developed control technologies to the point where we now provide government, consumers, and business with

advanced systems for environmental control, energy conservation, information management, and aerospace and defense.

A current example of the kind of work in which we are involved is our contribution to the Space Shuttle program. Bringing together several of our technologies, we developed the flight control system and the main engine controller for Columbia and we supplied the computers for the central data system to capture and store operational data checkout and launch.

Based on Honeywell's familiarity with the program. I would say the Space Shuttle represents the kind of accomplishment that show America at its best, and I suggest that the Space Shuttle has lessons for all of us as we address the broader question of American productivity.

I would make two points: First, much of the Shuttle's success can be attributed to the spirit of cooperative participation that attended the work of all those associated with the program—in Government, labor, and business. And second, a work climate was created—at least this is true of Honeywell—that encouraged everyone from project management to the shop floor to relate their personal objectives with the objectives of the program.

As we relate these points to the larger issue of our national productivity, it appears essential that Government, labor, and business all realize they have a part to play in solving the productivity problem.

The Government can make its unique contribution by addressing issues of taxation, investment incentives, regulatory reform, streamlined procurement policies, support of research and development, and restraint in Federal spending. All of these can have a positive impact on the economy and on national productivity.

Business and labor can begin immediately, on their own initiative, to improve productivity by making better use of our most valuable asset, our people. That will be the focus of my remarks today.

At Honeywell, we are trying to create throughout the organization the kind of climate that enabled us to participate successfully in he Shuttle program. Our program is based on the recognition of four basic principles:

First, people want to do a good job.

Second, each employee knows his or her own job better than anyone else.

Third, employees want to be recognized as intelligent, interested people and they want to participate in decisions that affect their work.

Fourth, people need information so they can better understand the goals and problems of the organization and make informed decisions.

These four principles have always been true of all people. But there are some new truths, too, as indicated in a major study called "Honeywell/People in the Eighties," which I commissioned last year. Copies of that report are being made available to you. In addition, we have conducted a number of surveys of worker attitudes over the last few years. The most recent was undertaken with our union in Minneapolis and involved more than 6,000 factory employees.

The results of our work in this area leads us to conclude that today's worker has a new value system—one that values persons over institutions, participation over authority, individualism over conformity, quality over quantity, diversity over uniformity, and experiences over

things. On the job, workers want assurance that they are making a real difference, that their best talents are being effectively used and that they can leave work at the end of the day with the feeling they accomplished something worthwhile. And they want to know they are working for a successful company.

These factors add up to what we at Honeywell call self-esteem. We view it as a major objective of every employee. And we believe that organizational objectives—such as increased productivity—are only attainable if they are consistent with individual objectives—such as self-esteem.

As part of our continuing work in this area, we are conducting research to assess the relationship of attitudes to productivity. Preliminary findings suggest a positive correlation between high performance, that is, productivity, and the sense of personal accomplishment. Conversely, workers in departments with low production rates had negative perceptions of their work climate—that is where they felt they were treated like "kids," where they saw management as having a "blaming" attitude and where managers were not seen to be helpful in problem solving.

We conclude that change is needed. Since that change involves a whole new look at time-honored management/employee roles, it becomes a total systems' challenge. Several programs are underway at Honeywell to shift our style to participative management.

An advanced technology company, like Honeywell, depends on a high level of engineering productivity. We have found that our engineering managers have superb technical skills, but their education has frequently not equipped them with human relations skills that maximize the efforts of technical employees. This summer, we will open a school to train technical managers in communications, counseling, coaching, group behavior, self-esteem, team building, and motivation. During the next 5 years we plan an aggressive program to provide this training to our technical managers.

Honeywell Quality Circles, in which workers meet regularly to discuss ways to increase productivity, have been in operation for a number of years. We now have 300 quality circles with another 50 to 100 teams expected to be in place this year. Eventually, we will have as many as 1,000 worldwide, because we know that quality circles work. For example: Ten teams at one facility improved assembly productivity by 46 percent over 2 years and reported improvements in communication, cooperation, and attitude.

At another plant, 28 teams reduced assembly hours in one year equal to a saving of $625,724—a cost-to-saving ratio of 1:8.

In 9 months, 11 teams at a third facility implemented solutions to 109 production problems. They documented $86,430 in savings, a 36 percent reduction in assembly costs, and a significant improvement in attitude and working climate.

These improvements came about not because management solved the problems—but because the climate allowed employees themselves to solve the problems.

A third program is designed for all employees within my area of responsibility. It's a communications program we call the "Winning Edge." Now in its third year, the program conveys to Honeywell people worldwide, several fundamental facts of corporate life. It says:

Each employee is doing an important job. Every person can help make his or her department successful by doing the job smarter. Each of us can make a real difference. If we work together we can accomplish more. Managers need all the help that each employee can offer. Good ideas come from anyone. And if we work smarter and if we are successful, our jobs are more fun for each of us.

Probably the most important thing the "Winning Edge" is doing is getting top divisional management down into the factory to meet the people who wire the circuits, run the machines, and sweep the floor. If the program didn't accomplish one thing more, it would still be worth many times the cost of the program. It is based on the fact that a winning attitude is the key—not a college degree or educational brilliance.

A major thrust of our "Winning Edge" program this year is safety and health. We take the tack that safety and health improvements are not to be viewed as something that has to be forced on the company, but are opportunities for increasing productivity. Eliminating hazards, providing health counseling and staging wellness programs let employees know that the company has as much concern for them as they are asked to have for the company. It is another example of corresponding objectives. I think that is the entire key to this thing.

Further, good safety and health is profitable. In one of our plants, for example, simply by adding a nurse to counsel employees, we are significantly reducing workers' compensation costs.

It has been pointed out that as you study the success of Japanese industry, you note that in Japan, business organizations reflect the cultural values of society. In the United States, industry has not yet accomplished this.

The Japanese place great value on saving face, for example, and their system guarantees this as a right of employment. In America, on the other hand, one of the guarantees we cherish most is the right of every person to speak his mind. But until now, this right has stopped at the factory gate. By giving every employee the right to speak up, we could open a rich resource of ideas, inspiration, and accumulated wisdom. The rigid structure of Japanese culture may eventually become their limitation. But in American industry our cultural heritage of freedom of expression could become one of our greatest strengths.

Through our training programs, "Quality Circles" and the "Winning Edge" program, we stress that self-expression and self-esteem are the right of every employee and an absolute necessity for a highly productive employee. An element of self-esteem that we stress is the importance of complementary objectives.

The true professional—whether an engineer, a toolmaker, a business manager, or an elected official—is one who understands that part of his or her objective is helping others accomplish their objectives. The people and the companies that accomplish this are always the most successful. It should come as no surprise to us that our "Winning Edge" events that have always generated the greatest enthusiasm are the community programs which Honeywell people stage for the support of education, social agencies, or the handicapped. This is no different in France, Britain, or anywhere else.

There is satisfaction in helping accomplish a common goal, and we need to utilize that motivating power in industry.

Our industrial system has grown up with adversarial relationships—labor/management, we/they, us against them. Those relationships are outmoded today. They have got to go. We can no longer afford them.

We have all seen the way this country can pull together during periods of war, or to accomplish objectives like the Space Shuttle. We have accomplished miracles and have come from behind because we were able to work together. We have always been at our strongest when we made the best use of the strength of everyone. And that is what we must do to win the productivity race today.

I will be happy to answer any questions you may have.

Representative REUSS. Thank you, Mr. Renier.

Congresswoman Heckler.

Representative HECKLER. Thank you, Mr. Renier. Honeywell is an important presence in Massachusetts. I will be happy to tell your employees of your increased and definite interest in their perspective, their point of view; so I carry back a very important message for them.

I thought, as you were reading your statement, that the thrust of your remarks might have been the subject of an article in "Psychology Today" 10 years ago, but never the content of serious testimony presented before this committee. This is a commentary on how far we have come in understanding that the psychology of the worker is as important as the technology or the equipment that we provide. I think testimony is valuable.

While it is important for the Congress to be concerned with tax incentives, tax policy, regulations, government spending, and all of the other issues that are on our usual agenda, really the motivations of the individual are almost more critical than any changes in any law.

I am intrigued by your participatory management concept to which you refer in your statement. Could you describe for the committee how that operates?

Mr. RENIER. Yes. In my testimony I have stated a principle upon which everything is based, and that is that corporate objectives are maximized when individual objectives are also achieved. It is impossible, I think, to achieve individual objectives in the workplace, unless the workers feel ownership of the problem that is being resolved.

And so what we do is we construct teams. Some people call them "Quality Circles"; some people call them teams. But we construct a mechanism, we provide an environment and a mechanism which allows the worker to feel a part, to feel that he has helped define the problem and helped solve the problem. We define that kind of an environment, and he is able to do this. He then feels like he participates.

Representative HECKLER. Suppose the workers object to a policy on which management has made a decision.

Mr. RENIER. If they object to a policy we have decided on, what we will do is we will sit down with them and suggest to them that perhaps they have alternatives. Maybe we don't see the problem clearly, and perhaps they could help us define the problem. There is really, you know, nothing, I think, terribly new or unique about all of this, as you have said.

Let's take safety, for example. I mentioned safety. You can—in a more traditional fashion, you can put out a directive, and have it printed on all of the bulletin boards in a factory, that says, "We will

be safer. And in order to do this, you will study," or "you will learn," or "you will be careful." And we will put a couple of posters up and let it go at that.

On the other hand, if you want to approach it in a participatory way, you are much better to talk to the people whose safety is potentially bothered or threatened and ask them how they perceive the problem and have them form a team or a group to address that problem, develop the alternatives, and have them presented to you with their favorite alternatives. They do a remarkable job.

In the one case I mentioned, a management "Quality Circle" or team decided that, the best thing to do would be to get the nurse out of her office and have her wandering around the floor talking to the production people about their safety and about how they feel and all of that sort of thing, along with many, many other suggestions that they made. And this has been absolutely terrific.

Representative HECKLER. So you have actually found that allowing workers to take time from their usual role, time out in a sense to work on these special teams, increases their productivity when they go back to their machine or station.

Mr. RENIER. Very much so.

The interesting thing is some of the more traditional, hard-case-type of management folks would—I think would dismiss some of these. They don't after they see the result, but they would dismiss some of these activities as being just paying for more overhead.

The fact of the matter is when the management organization gets involved in telling the workers how to do their job, as opposed to worrying about the environment in which they can do the job, I think they are in the wrong role.

Representative HECKLER. Thank you very much, Mr. Renier.

Representative REUSS. Thank you, Congresswoman Heckler.

Congressman Richmond and I have some questions of Mr. Renier, but I would like to get on and have the whole panel's testimony before us.

So, we will continue, then, with Mr. Grayson.

STATEMENT OF C. JACKSON GRAYSON, JR., CHAIRMAN, AMERICAN PRODUCTIVITY CENTER, HOUSTON, TEX.

Mr. GRAYSON. I want to thank the Joint Economic Committee, and the other members of the committee, under your leadership for keeping the Nation's focus on productivity. As I said in my testimony, productivity is one of the most important, if not the most important, subject that ought to be at the top of the Nation's agenda.

So, I congratulate you and encourage you to continue this focus on productivity.

I also want to thank the other members who agreed to testify here today, because I think they exemplify what I see going on in this Nation, which is encouraging. That is, many managers and companies in the Nation are beginning to wake up to the fact that our productivity is in danger. It has been dropping for 8 years, and now something needs to be done.

These programs are testimony to the fact that we are beginning to pay attention to the basics that sometimes in the past we knew, but we forgot about, for one reason or another.

I want to apologize for appearing before you today in sandals. You may not see this, but I have sandals on, not because I have turned hippie or I am Japanese, but because I have a broken toe. And I thought about this—in some ways, the economy has had a broken toe. You do not notice how important your toe is until you have broken it. Well, you have not really seen how important productivity is to the future of the Nation, until something went wrong with it. And suddenly people are turning around and seeing that this is one of the basic fundamentals.

Without adequate productivity growth, you cannot win the battle against inflation, unemployment, profits, real earnings, and a standard of living.

In my view, this Nation is waking up to the problem, and that is encouraging. The Joint Economic Committee has had a lot to do with this waking up. For a number of years it has been one of the leaders in the Congress that has been saying that this is something that is fundamental. Today these hearings are continuing that process.

I think we need more companies like these in the United States and more continued hearings and action that gets us beyond the rhetoric stage. And I don't think of this as a public sector or a private sector responsibility, it is joint responsibility of the public and the private sector.

I have presented my prepared statement for the record, and I would like to supplement that with a few remarks. If I could amplify what I said in an effort to try an show my point today, it is that we are beginning to make progress. As one Japanese told me, "You are beginning to get awake in this nation, but you are not quite out of bed yet."

I think we are awake, and I think we are beginning to get out of bed.

As I look at the reason for high productivity growth in our principal competitors, which got our attention in Japan and Germany, I came up with 10 that I think are sort of at the heart of their success. I am not holding these 10 points up to be the ones that the United States should copy. We must work out the American solution, the American values, and where we are. We are still ahead of the other nations in productivity, and we need not forget that fact. But if we are to stay ahead, we need to pay attention to what our competitors are saying and our successes that have helped them forward.

These are the 10. I would like to come back and briefly comment on what I see as progress being made in this country toward these 10.

One: An involvement and consensus-seeking on the part of labor, management, and government.

Two: An emphasis on quality.

Three: A sense of a national purpose and attention on the productivity issues.

Four: Government assistance to the private sector in both positive ways and in removal of what are negative impediments to the productivity growth.

Five: More attention by managers in the United States in businesses to the subject of productivity and the creation of management systems

that they have allowed over the years, for whatever reason, to begin to decay because of a lack of attention.

Six: An emphasis on export and thinking globally in terms of markets.

Seven: A long-term view in terms of productivity, instead of only the short-term gains and increased in earnings per quarter.

Eight: An increase in savings, and as a result of that, an increase in investment, which in general, will lead to improved productivity.

Nine: An emphasis on learning and training and education, so that we can shift our skills to accommodate the higher productivity needs.

Ten: More attention on employee involvement and participation in the system for which they have responsibility and the right to be respected for their opinions.

Briefly, I would like to go back and say what I see as beginning progress in this Nation, working out its own movement on these areas.

One: Labor, management, and Government cooperation. We have seen blips of that in the steel industry, in coal, and in a few others, where you begin to see the tripartite type of notion appearing, that we need to get together and solve our common problems.

I think groups like this, however they are constituted, whoever initiates it, are to be encouraged as a way to begin dialog between the members, so that we may begin to uncover the productivity problems in that industry and in the groups who are party to those discussions, such as what they have to do to change the productivity trend.

On the board of directors of the American Productivity Center, we have about 8 labor leaders; we have about 12 business leaders, and some government leaders and academicians. This is sort of a miniature model of the dialog and of the cooperation that is beginning to be extended in recognition of other parties' problems in improving productivity and their participation.

I see discussions of the President's Advisory Council in Productivity. Although I have not seen it come forward yet, I am hopeful that it will be a way to bring labor, management, and Government together.

So, I begin to see come encouragement in this area, and those issues I think can be expanded.

Quality. For some years, "Made in America" was the outstanding hallmark and "Made in Japan" was the cheap product. Today we are beginning to see many products in the reverse. Now, American corporations are turning back to say we'd better pay attention to quality.

I see vice presidents in charge of quality being appointed in some major industries. I see average managers paying attention to quality. And the employees, through efforts such as that Honeywell has demonstrated, are feeling that quality is their responsibility and not just that of a quality control inspector.

On an national productivity purpose, the Joint Economic Committee has helped bring people together to begin the discussions on what it will take to bring people together. I do not yet see the adoption by the average American of this as a national purpose. As the polls show, there is a high readiness for it, but I don't think we yet have this as the No. 1 problem facing the Nation.

In management systems, that is managers looking at the way they manage, for years the American manager was taught to be supreme.

He was the best in the Nation, and other nations sought out the skills of the American manager. I know because I taught abroad during those years in which we were sought after for what we could do as American managers.

And for whatever reason, in recent years, not enough American managers have paid attention to the maintenance and the upgrading of their managerial systems. I am not talking just about employee involvement at this point. I am talking about such things as inventory turnover, training, recruiting, removal of bureaucracy, authoritarian attitudes, and paying attention to the basics of the business.

That I see this in programs such as Westinghouse, Beatrice, and Honeywell is an encouraging sign that American management is now beginning to say, "Maybe you have to keep going. You can't just rely on your past record."

On export emphasis, I don't think we are there yet. I don't think that we have thought enough about the export of American products. Yes, in agriculture, which is our leader, but not in terms of a lot of our manufacturing products, and not in thinking in terms of the world as the market.

In planning how you adapt your products for service and delivery in the terms of the other nations, we have not yet done it to the extent that our competitors have turned around and done it in our world.

In the long-term view versus the short-term view, I see more attention now on more firms willing to make investments, even when the uncertainty of the future is clouded with inflation and high rates. And the questions about regulations have always faced them. And the thought of the short-term earnings, I do not think we are there yet, in moving away from the short-term focus. But I am encouraged by the firms that I see willing to make those long-term bets, those long-term investments, and to not cut their R. & D. in the face of a downturn, and do not cut their training.

These are encouraging beginnings of a few toward the long-term gain and not the short-term gain.

On savings and investment, I see more emphasis now in recognition, that we have to increase the savings rate of this Nation. We have to increase the investment rate to get the productivity.

The tax bills before us now are designed to do that. There will be debates over the merits and demerits of each one. But I think that they are going definitely in the right direction. We must have higher savings and investments.

On learning and adjustment to the process of new skills for increasing our productivity with higher industries, I think the Labor Department could do more than it is now doing in the way of helping to train people and encouraging private businesses to also train people for higher skilled jobs.

I don't think it should be the responsibility of government to do that. I think it should be the responsibility of the private sector. But I think government can assist with information in clearinghouses, with some funding of training programs, and with some relocation assistance. We have to have the mobility to get labor and capital out of low productivity industries and move them into higher ones.

And last, the employee involvement. I think today's testimony by Mr. Renier is an example of many more firms recognizing that it is

human capital that we have to pay attention to, as much as physical capital.

For years we have neglected one of the most valuable resources this Nation has, the people, the employees at work every day.

I am encouraged by this attitude at Honeywell and others. It is beginning to grow and grow and grow. And I can only hope that there will be more like these companies that are here today.

That concludes my testimony.

Representative REUSS. Thank you for your most constructive testimony.

I want to call my colleague's attention to the excellent flow chart, or whatever you want to call it, contained in your prepared statement on how you get from here to there, how you end up with increased productivity. I think it is an excellent and understandable diagrammatic way of putting it, and I commend it to the staff on both sides for possible inclusion in whatever report we may have.

[The prepared statement of Mr. Grayson follows:]

PREPARED STATEMENT OF C. JACKSON GRAYSON, JR.

Mr. Chairman, I am very pleased to testify before your Committee, and compliment you on having these important hearings at this time on productivity.

There is no question that productivity improvement is one of the nation's most important economic problems—if not the most important. Inflation, unemployment, real earnings, and foreign competition frequently get the headlines, and each is a serious problem. But none of these can be solved on a long term basis unless our nation's productivity growth rate improves.

Because the productivity statistics are so abysmal (3 years of decline in a row in 1978, 1979, and 1980), the nation now is aware of the seriousness of the problem. A recent Louis Harris survey showed that "there is a strong and widespread recognition in the United States of the need to improve the country's productivity performance. A strong majority of Americans (79 percent) believe declining productivity is at least a serious problem for the next several years."

This is a dramatic change from several years ago.

AMERICAN PRODUCTIVITY CENTER

I started the American Productivity Center (APC) almost five years ago because I saw what was coming. While some far-sighted business and labor leaders agreed with me and helped to start the Center, the majority of the private and public sectors either ignored the problem or assumed that it would go away.

Since then, things have changed.

The APC now has support from almost 250 major corporations, has an expanded number of business, labor and government leaders on its Board of Directors (see exhibit 1), and is engaged in productivity improved activities all across the nation. A diagram is shown in Exhibit 2 which outlines the major activities of the Center, showing the scope of the Center's activities. We have a staff of about 80 people located in Houston, and the phones are ringing off the hook with calls from people who are now just becoming aware of the seriousness of the situation.

This heightened awareness, while necessary, is not sufficient. Following awareness must come action.

NATIONAL EFFORTS

Action must involve both the public and private sectors. Let's look first at the public sector—what has been done? Over the past few years, there has been little attention to improving productivity by either the Congressional or Executive Branch. It's almost as though they believe the problem will go away if they ignore it.

Rarely has productivity been considered in economic policy making, in laws, regulations, trade policies, or tax reform. What organized efforts there have been have been largely weak and abortive:

1. National Commission on Productivity.—The NCOP, founded in 1970, never attracted Presidential or Congressional support, had few staff members and no authority to carry out its mission, was underfunded, and lacked leadership and direction. It folded in 1978.

2. Council on Wage and Price Stability.—The Congressional act that established COWPS in 1974 stated that they were to "focus attention on the need to increase productivity in both the public and private sectors." They concentrated on influencing prices and wages, and did nothing about productivity.

3. National Productivity Council.—President Carter established the NPC in 1978, partly to replace the defunct NCOP. It did even less. It had no staff, was not funded, took no actions, did not involve the private sector, and met only four times for a total of about four and a half hours since October 1978.

The GAO recently issued performance reports on each of these efforts stating that all were largely ineffectual and that their mission to help improve productivity was not accomplished.

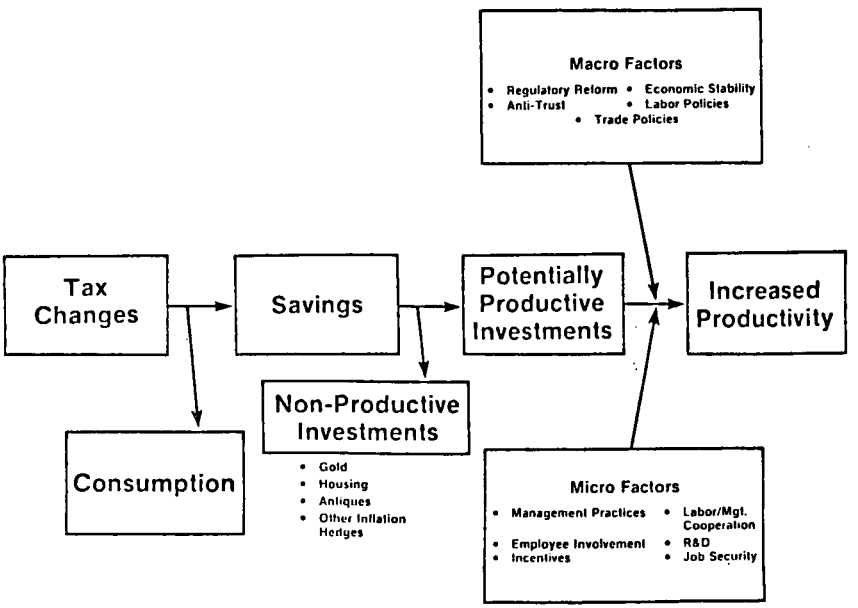
Likewise, neither the Department of Labor nor Department of Commerce have created, organized, or sustained programs to improve productivity.

In sum, while the rate of productivity growth has steadily declined, there has been little action at the national level.

President Reagan and the Congress both are now proposing a number of tax changes in the name of "stimulating investment and productivity."

These efforts are certainly in the right direction. But productivity improvement does not flow automatically from increased investment.

The diagram below illustrates this point. Tax changes are desirable and necessary, but they are not sufficient. More—much more—must be done in both the public and private sectors.



NATIONAL PRODUCTIVITY PROGRAM

I have testified before this Committee on several occasions urging that steps be taken to undertake a broad, and comprehensive "National Productivity Program" involving:

The public and private sectors.

Short and long range actions.

Macro policies and micro action.

And such action steps must involve labor, management, and government. I still urge such action.

Japan, facing a serious productivity stagnation and poor quality reputation in 1955, stirred itself to action with the adoption of three guiding principles:

Productivity improvement should be done jointly with labor and management.

Productivity improvement leads to more jobs, and temporary redundance should be dealt with by relocation.

The fruits of improved productivity should be fairly distributed among management, labor, and consumers.

With these principles, Japanese labor, management, and government officials embarked on a national productivity effort that has resulted in one of the most amazing productivity growth records in the history of the world. The United States should do the same.

We do not have to idolize or copy Japan, but we can certainly learn from them. And we can embark on our own improvement efforts in our own way. The essential point is that we must begin.

PUBLIC SECTOR

At the national level, I have proposed that two major steps be taken to help re-start a public sector focus on productivity:

1. The appointment of a "President's Productivity Advisory Council."

This council would be composed of business, labor, and academic leaders from the private sector. They would recommend policies and programs to Congress and the Administration for productivity improvement, and they would monitor and report on national progress toward productivity improvement.

This is not a new bureaucratic body—not a new government agency. The members would be part-time and not compensated. It has no government members. It is advisory. And it can help to provide an interface between the public and private sectors.

2. The assignment of responsibility for productivity improvement policies and programs to an existing government agency, such as OMB, Treasury, or FEMA.

This government agency should have a voice and influence at the highest levels of economic public policy making, and also have the influence, funding, and staff to cause productivity improvement programs to be started in every government agency.

I submitted a recommendation and description of such a public sector effort to the JEC in 1977, and recently to the Administration.

The primary reason that this effort is needed so badly is that we simply are not explicitly taking productivity into consideration in our economic policies.

Peter Drucker wrote in the January-February 1981 Harvard Business Review: "* * * the competitive success of Japanese industry is not the result of some uniformity of thought and action. It is the result . . . of (the habit of considering) * * * a proposed policy's impact on the productivity of Japanese industry, on Japan's competitive strength in the world market, and on Japan's balance of payments and trade."

We simply do not now do that in the United States. We need an organized effort to cause that to occur.

PRIVATE SECTOR

While the public sector must take steps along these lines, the prime rsponsibility for improving productivity in the private sector rests squarely on: (1) American management; (2) American labor.

It always has.

But, in recent years, productivity improvement simply has not been a subject of major attention by many managers or employees.

Productivity has been equated with something as vague as "motherhood," assumed to be almost automatic and frequently ignored as a critical variable for the long run survival of a business or industry. Like good health, too often, it has been "taken for granted."

Many American firms have simply taken their eye off the productivity ball.

What has just been said is certainly not true of *all* American firms. Some are extremely productive and producing goods of high quality.

This is why I am pleased that you have invited some of these organizations to testify today. These firms do not take productivity improvement for granted. They are committed to action. They have significant accomplishments to report.

As they will indicate, they still have a long way to go. They still have room for improvement. But hopefully they set an example for others to follow.

While we need national policy changes, many improvements in productivity and quality of work life are available to use right now. We do not have to wait.

While the American Productivity Center has developed its own process to examine opportunities for productivity improvement at individual organizations, there are seven key elements that companies throughout the Nation can consider in their own productivity examination. (1) Resources, (2) Productivity Goals, (3) Awareness, (4) Measurement, (5) Rewards and Recognition, (6) Employee Involvement, and (7) Leadership and Organization.

Resources: How an organization utilizes its human, material, technological and capital resources is fundamental to the productivity equation. Determine how productively these assets are used and assess the leverage points where improvements will have the greatest impact on productivity.

Productivity Goals: Goals should reflect the productivity/quality of work life emphasis of the organization. They also establish expectations for change and improvement.

Awareness: With effective communication, an organization can clarify its goals and expectations for productivity improvement, provide performance feedback, recognize contributions, obtain ideas for improvements and identify barriers to productivity and quality of work life.

Measurement: Through measurement, an organization can determine its level of productivity, assess its strengths and weaknesses and evaluate trends and progress.

Rewards and Recognition: "What's in it for me?" Processes for encouraging and rewarding the changes the organizations are seeking are essential.

Employee Involvement: Productivity improvements are realized largely to the degree that employees get involved, they contribute their ideas and efforts toward improvements, and experience pride in the organization's accomplishments, the quality of working life is improved and the commitment to increased productivity is enhanced.

Leadership and Organization: The organization structure provides the apparatus for information sharing and decision making by which productivity and quality of work life improvements are designed, implemented and maintained. Leadership is necessary to cause things to happen and to lend legitimacy to the importance of the productivity issues.

The United States has before it the opportunity to recreate the national consensus of purpose and action that carried us forward for over 200 years to become the world's most productive leader. We cannot assume that this will always be so unless we keep improving. We have the need—and the opportunity—to energize a new phase of growth, innovation, jobs, and profits.

These firms set an example. Let's spread this across the Nation.

EXHIBIT 1

AMERICAN PRODUCTIVITY CENTER BOARD OF DIRECTORS

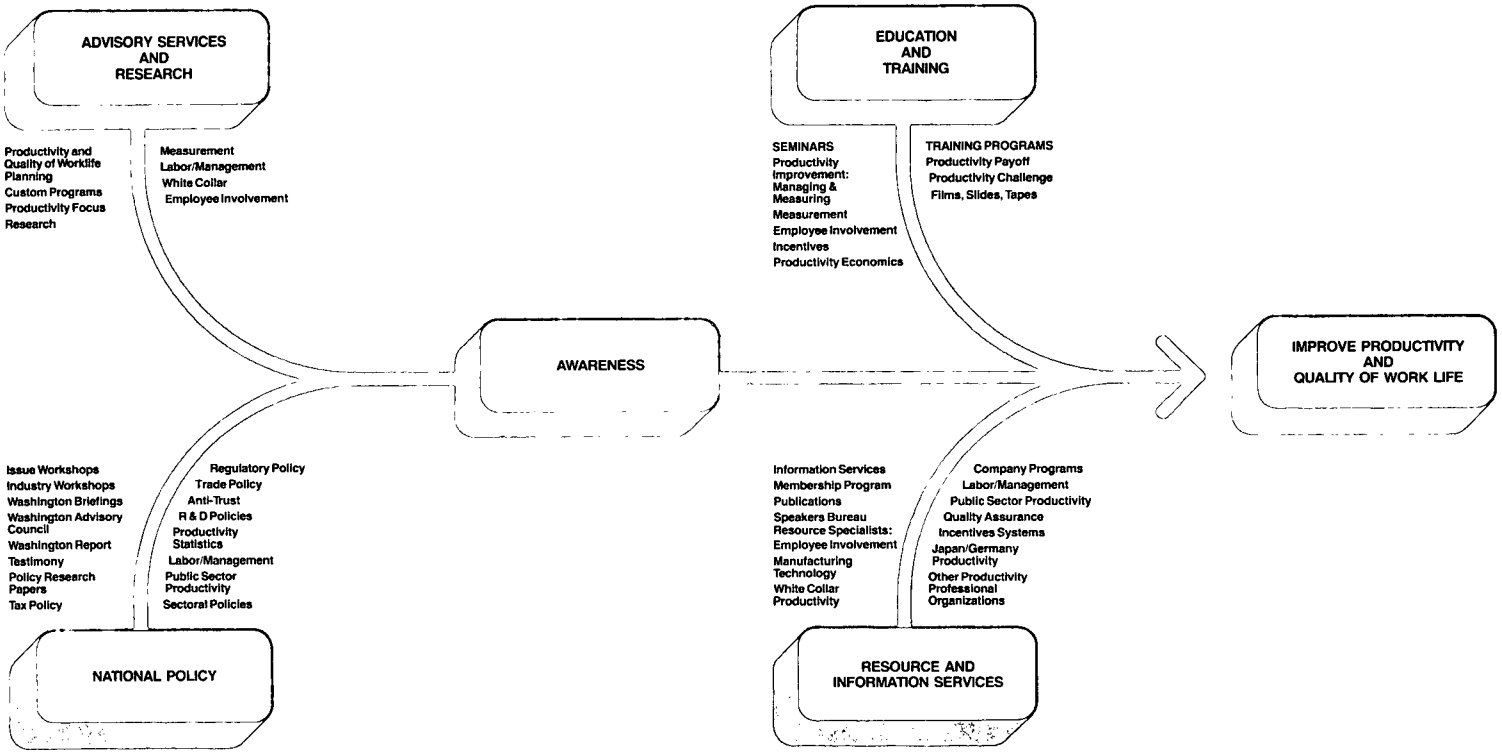
I. W. Abel.[1] Former President, United Steelworkers of America; Ralph E. Bailey, Chairman, Conoco, Inc.; William Batten, Chairman, New York Stock Exchange; David Beretta, Chairman, Uniroyal, Inc.; John C. Biegler, Chairman, Price Waterhouse International; Robert T. Campion, Chairman, Lear Siegler; Douglas D. Danforth, Vice Chairman & COO, Westinghouse Electric Corporation; James Dutt, Chairman, Beatrice Foods Company; Murray H. Finley, President, Amalgamated Clothing and Textile Workers.

Robert A. Georgine, President, Building & Construction Trades, AFL–CIO; C. Jackson Grayson, Chairman, American Productivity Center; William Johnson, Chairman, IC Industries; Mark E. Keane, Executive Director, International City Management Association; Dr. John Kendrick,[1] Professor, George Washington University; Rene C. McPherson, Dean, Standford Graduate School of Business; Randall Meyer, President, Exxon Company, U.S.A.; Charles H. Pillard, International President, International Brotherhood of Electrical Workers.

Elmer B. Statts, Former Comptroller General of the United States; James E. Stewart, Chairman, Lone Star Industries, Inc.; Robert Strauss, Partner, Akin, Gump, Strauss, Hauer and Feld; Robert Stuart, Chairman, National Can Corporation; Donald H. Trautlein, Chairman, & CEO, Bethlehem Steel Corporation; W. J. Usery, Jr.,[1] Former Secretary of Labor, Usery and Associates; Glenn E. Watts, President, Communications Workers of America; John C. Whitehead, Sr., Partner, Goldman, Sachs & Company.

[1] Advisory directors.

EXHIBIT 2


ADVISORY SERVICES AND RESEARCH
Productivity and Quality of Worklife Planning
Custom Programs
Productivity Focus
Research
Measurement
Labor/Management
White Collar
Employee Involvement
EDUCATION AND TRAINING
SEMINARS
Productivity Improvement: Managing & Measuring
Measurement
Employee Involvement
Incentives
Productivity Economics
TRAINING PROGRAMS
Productivity Payoff
Productivity Challenge
Films, Slides, Tapes
AWARENESS
IMPROVE PRODUCTIVITY AND QUALITY OF WORK LIFE
Issue Workshops
Industry Workshops
Washington Briefings
Washington Advisory Council
Washington Report
Testimony
Policy Research Papers
Tax Policy
Regulatory Policy
Trade Policy
Anti-Trust
R & D Policies
Productivity Statistics
Labor/Management
Public Sector Productivity
Sectoral Policies
NATIONAL POLICY
Information Services
Membership Program
Publications
Speakers Bureau
Resource Specialists:
Employee Involvement
Manufacturing Technology
White Collar Productivity
Company Programs
Labor/Management
Public Sector Productivity
Quality Assurance
Incentives Systems
Japan/Germany Productivity
Other Productivity Professional Organizations
RESOURCE AND INFORMATION SERVICES

Representative REUSS. And now let's go on and hear from Mr. Murrin of Westinghouse.

STATEMENT OF THOMAS J. MURRIN, PRESIDENT, PUBLIC SYSTEMS CO., WESTINGHOUSE ELECTRIC CORP., PITTSBURGH, PA.

Mr. MURRIN. Thank you, Mr. Chairman, and members of your distinguished committee.

I am president of Westinghouse's Public System Co., and I am privileged and delighted to be with you today.

I endorse enthusiastically the opening comments of Mr. Grayson, regarding the crucial and invaluable role that you are playing in regard to productivity and quality improvement.

Since we are dedicated to making productivity improvement a way of life at Westinghouse, I'm pleased to share our experiences and insights. I hope to also share my sense of urgency.

For the economic well-being of our nation and people—and possibly for our economic survival—productivity improvement should have top priority at the national policymaking level and throughout the public and private sectors of our society.

Our country needs a measurable and visible goal, not unlike that of the manned space program of the 1960's. We should be striving to regain world leadership in productivity improvement within the shortest possible period.

When we embarked to put a man on the moon, the Soviets were ahead of us. Today, Japan, West Germany, France, the Netherlands, Italy, Canada, and even the United Kingdom, are all leading us in their rates of productivity improvement.

As a nation, we have the technology, the people, and the ability to meet this challenge. What we need is a national commitment and a well-synchronized, cooperative government/business/labor/academia strategy.

To get a true sense of urgency, we have to understand the capabilities that are developing abroad. And whether we are in government, academe, or business, we should personally be visiting factories and laboratories in these other countries, most particularly in Japan, to understand better these new competitive realities.

We have provided to the committee an 8-minute videotape, which provides some substantial insights into the manufacturing trends in Europe and Japan. If you have not had a chance to see the tape, I would urge you to do so.

To put into perspective briefly our internal Westinghouse efforts on productivity improvement, let me summarize a few of the things we are doing.

We have created a multi-million dollar productivity improvement seed fund, which has been made available with a minimum of paperwork. About $30 million has been committed to more than 120 projects, including, for example, seeing and thinking robot systems, which we are developing in concert with our Pittsburgh neighbor, Carnegie-Mellon University.

For each of our businesses, we have established specific productivity objectives. I might dwell on this for just a moment, because I think

it is very significant and encouraging. And it might be of particular interest to the committee.

When we started this effort about 2½ years ago as a corporation, we were averaging about 2 to 3 percent productivity gain annually, somewhat better than the national average. We've set a target of 6 percent. Frankly, we were uncomfortable with that ambitious target—but I am happy to report we have met it the last 2 years.

And in the company for which I am responsible, Public Systems, we have achieved an 8 percent gain in each of the last 2 years. We have an unofficial target for the next several years of 10 percent improvement per year. We are quite enthused about that, but we are, frankly, also sobered in that regard by the reality that Japan, as a nation, achieved about 10 percent last year. And for over 30 years has averaged about 7½ percent each year.

In the short term, we have been concentrating much attention on people participation in the process of identifying job-related problems and solutions to those problems. At the same time, we are seeding technology efforts, both in the office and the factory, to keep our productivity momentum going for the rest of the decade and beyond.

Literally over the weekend, Mr. Chairman, the current issue of "Fortune" arrived at home. We knew they were doing an article on Westinghouse, and we are delighted to find that it is a very upbeat article. And I reference it to you respectfully, because it is utterly germane to your hearings today.

Representative REUSS. Without objection, the article from the June 15, 1981, issue of "Fortune" will be printed in the record following your prepared statement.

Mr. MURRIN. This is very much in the spirit of what you have heard about at Honeywell and elsewhere. At Westinghouse, we now have over 700 "Quality Circles." We expect, by the end of the year, to have over 10,000 of our people involved in such programs.

As you may have heard, we have a new position of vice president of "Corporate Productivity" and are establishing a "Corporate Center" in Pittsburgh.

I might mention just one other point, and that is we have been extensively studying the Japanese for the last 2 to 3 years, and one of our key conclusions is that their dedication to quality, as you have already heard, was a prime factor in their overall improvements. So we, too, have made emphasis on quality improvement throughout our entire design and production process one of our key strategies.

I would like to respectfully observe one of our other basic conclusions about Japanese secrets of success—and I think this is particularly germane to your hearings—is that a cooperative synergistic relationship needs to exist between industry, government, labor, and academe, from which all of us can derive great benefit.

In closing, let me suggest, overall, that to get productivity improvement momentum in this country, we must begin developing a real sense of urgency about the need to leapfrog ahead of our foreign competitors. We need a national strategy on productivity and quality improvement that brings together government, business, labor, and academe in a truly cooperative and no longer adversarial relationship.

We would like to urge this Congress and the administration to take up productivity improvement as the next crucial step for our national economic recovery. And like getting a man on the moon in a decade, we need a national productivity goal.

Productivity improvements may be different for each sector of the economy, but we should be thinking in terms of a doubling of our overall level of productivity. If the Japanese sustain their momentum, and I believe they will, we may need to set our sights in the manufacturing sector even higher.

As a nation, we are capable of achieving such a goal, but we truly need a sense of urgency to accomplish that.

Thank you very much.

Representative REUSS. Thank you, Mr. Murrin.

[The prepared statement of Mr. Murrin, together with the article from "Fortune" magazine, follows:]

PREPARED STATEMENT OF THOMAS J. MURRIN

Good Afternoon: I'm Tom Murrin, president of the Westinghouse Public Systems Co. which includes the defense, building and transportation systems, learning and leisure, and community development businesses of the Westinghouse Electric Corp. I also have been serving as the Chairman of our Corporate Productivity Committee.

Since we are dedicated to making Productivity Improvement a way of life at Westinghouse—I'm pleased to share our experiences and insights. I hope to also share my sense of urgency.

For the economic well-being of our nation and people—and possibly for our economic survival—productivity improvement should have top priority at the national policy-making level and throughout the public and private sectors of our society.

Our country needs a measurable and visible goal—not unlike that of the manned space program of the 1960's. We should be striving to regain world leadership in productivity improvement within the shortest possible period.

When we embarked to put a man on the moon, the Soviets were ahead of us. Today, Japan, West Germany, France, the Netherlands, Italy, Canada—and even the United Kingdom—are all leading us in their rates of productivity improvement.

As a nation, we have the technology, the people, and the ability to meet this challenge. What we need is a national commitment and a well-synchronized, cooperative government/business/labor/academia strategy.

Many of our national policies are still based on the post-World War II assumption that the U.S. has industrial leadership around the world. But the reality is that our productivity and our manufacturing and product technologies are no longer preeminent in many industries.

To get a true sense of urgency, we must understand the industrial capabilities that are developing abroad. So whether we are in Government, Labor, Academia, or Business, we should be visiting factories abroad, particularly in Japan, to understand competitive realities.

We have provided to the Committee an eight-minute videotape which provides some insights into manufacturing trends in Europe and Japan. If you have not already seen the tape, I would urge you to do so.

To better explain my sense of urgency on productivity improvement, I would like to share some insights on Japan.

Last year, the overall manufacturing sector in Japan achieved an annual productivity improvement of over nine percent. Between 1975 and 1979, their total compensation to employes climbed by 83 percent, while it climbed a much lower 43 percent in the United States. However, because of their high rates of productivity improvement in manufacturing, their labor costs per unit produced actually declined slightly—while in the United States our unit labor costs climbed with the increase in compensation.

So by concentrating on Productivity Improvement, Japan has been able to improve significantly the economic well-being of its people—while at the same time combating inflation and substantially improving the competitiveness of its industry.

A few months ago, I visited the factory of a leading Japanese robot manufacturer where I saw about 24 robots making parts for more robots. At night, the lights were shut off while—unattended—the robots and machine tools busily continued making parts for more robots.

Some of our people visited a leading builder of Japanese machine tools that produces a sophisticated machine every 40 minutes. That company's machining centers also run unattended at night, in the dark—busily making more machining centers

However, the capabilities of Japanese industry in the years ahead are of even greater concern.

For example, I am particularly interested in a 60-million-dollar government-funded project for a Flexible Machining System. This system will use high energy lasers to manufacture—with assembly line efficiency—small batches of machined parts. This project involves more than 500 engineers from 20 Japanese companies—and could revolutionize much of manufacturing.

We are the only major industrialized nation in the world without a commercial manufacturing technology program directed at improving the productivity, and thereby competitiveness of industry. As the programs of other countries advance, our competitors in those countries will increasingly gain an advantage.

The Manufacturing Technology programs of the Department of Defense—which are primarily directed at military aircraft and other defense systems—are the only federal efforts to raise industrial productivity of any significance. These programs should be expanded and accelerated—and we should establish similar programs for the rest of our nation's industries.

Obviously, no single company can emulate the national manufacturing technology programs sponsored by foreign governments—therefore, today's productivity growth gap will widen unless we take similar action.

To put into perspective our internal Westinghouse efforts on productivity improvement, I would like to quickly summarize what we are doing.

Within Westinghouse we have created a multi-million dollar productivity improvement "seed fund" that has been available with a minimum of paperwork to all Westinghouse operations.

About 30 million dollars has been committed to more than 120 separate projects—including the development of "seeing", "feeling" and "thinking" robotic systems for several of our factories where we are working with the Robotics Institute of Carnegie Mellon University.

For each of the businesses of the Corporation—which range from building large motors, to sophisticated defense systems, to bottling 7 UP—we have established specific productivity improvement objectives in terms of a 6.1 percent annual increase in constant-dollar value-added per employee.

In our Public Systems Company we have exceeded that Corporate objective. If we sustain our current rate of improvement, we will double our level of productivity within a decade. Because it is necessary to stay competitive—worldwide—and because some of our own operations and those of Japanese companies have shown that it is indeed realizable—I have "unofficially" established a higher 10-plus percent per year productivity improvement target. This is a challenge that I'm fully confident we can meet or beat.

In the short term we have been concentrating much attention on people participation in the process of identifying job-related problems and identifying solutions to those problems. At the same time we are seeding technology efforts for both the office and the factory to keep our productivity momentum going for the rest of the decade and beyond. By putting the people programs in place first, we expect to multiply the productivity improvement effectiveness of the technology and capital investments that we expect to be making now and in the years ahead.

At Westinghouse we currently have over 700 Quality Circles at over 150 locations. By the end of this year we expect to have well over 10,000 of our people involved in such programs.

We have created a new position of Vice President, Corporate Productivity—to assume full-time responsibility for our extensive Productivity Improvement efforts and to start-up a Corporate Productivity Center.

Within the next year, we expect to have almost 200 robots operating in our factories—tackling hot, hazardous, heavy or monotonous types of jobs. In our offices we are applying technologies such as video teleconferencing, word processing, telephone dictation, computer graphics, electronic mail and automated office systems.

We also have been studying extensively why the Japanese are so successful at Productivity Improvement. One of our conclusions is that their dedication to quality is a prime factor. So we have made an emphasis on Quality throughout our entire production process one of our key strategies for Productivity Improvement.

Another of the basic conclusions about the Japanese secret-of-success is that a cooperative, synergistic relationship needs to exist between industry, government, labor and the academic world.

In this country we must develop a coherent, national, industrial competitiveness policy—which stimulates productivity and exports recognizing today's competitive realities worldwide. And we need to develop an Americanized version of a synergistic, rather than adversarial, relationship between Business, Government, Labor and Academe.

For example, tax policies should be revised to help stimulate the formation of capital which will be required to modernize American industry—and appropriate incentives are needed to stimulate innovation, research and development.

We need to shorten depreciation periods to help stimulate capital investment. For equipment—such as electronic office systems—which can become technologically obsolescent in one or two years—we need depreciation periods significantly shorter than those now proposed.

A tax credit for research grants to universities for projects related to a company's business, and tax credits for R&D expenditures above the average of the previous three years, would also be helpful.

And impact on productivity should be a major consideration when formulating or implementing both old and new regulations.

What America needs is for Government to create the climate where ingenuity and productivity can flourish.

Since government is the largest single buyer of goods and services, changes in government procurement practices could have a very positive influence on productivity improvement in both the private and public sectors.

Even in non-federal government business or on subcontracts, federal contract "boilerplate" and contracting procedures are frequently superimposed, typically adding more than ten percent to the cost.

In defense contracting, year-to-year, start-and-stop program funding and the relatively negligible profit incentive for productivity improvement are significant deterrents to reducing the cost of defense systems and increasing the defense production base so vital to national security.

Multi-year procurement could have a very positive impact on productivity by improving our ability to contract for materials so that we can get what we need, when we need it—at 15 to 20 percent lower cost. Currently, about 53 percent of the materials for the defense systems we build are not being delivered at the optimal time in the production cycle—and the late delivery of critical materials has a very negative impact on productivity.

To stimulate productivity improvement more profit should go to those contractors that improve productivity—therefore reducing costs to the government over the long term. The greater the share of productivity improvement savings that industry can retain; the greater the incentive to invest in more productive equipment and facilities.

All federal contracting practices should be reviewed for their impact on productivity—and revised to incentivize rather than discourage productivity improvement.

Let me cite an example from Westinghouse.

As the result of the Corporate-level Productivity Improvement Fund that I mentioned earlier, our Defense Group came up with a number of very advanced manufacturing concepts for electronic defense systems.

This portfolio of projects includes an electronics assembly station using robots which will have a sense of touch and sight. We are predicting that the benefits of just the assembly station will include an 800 percent productivity increase in

the electronic circuit board assembly process; a ten-to-one improvement in the manufacturing cycle time and more than double the first-time process yield.

The total benefits of this portfolio of investments in technology is expected to add up to about 400 million dollars over the next five years—and we expect about eight dollars of savings for every dollar spent.

However, there is a catch. Under today's contracting procedures, most of the benefit will go to the Government even with Westinghouse taking all the risks. Our ability to finance these projects would be limited—and it might take us seven to eight years to bring these technologies on-line.

We are negotiating a Technology Modification effort which will improve our share of the return and accelerate our ability to implement the technologies.

However, I think this illustrates that investments and technology development: which can significantly improve productivity are not being incentivized under today's contracting procedures.

To get productivity improvement momentum in this country we must begin developing a real sense of urgency about the need to leapfrog ahead of our foreign competitors. We need a national strategy on productivity improvement that brings together government, business, labor and academe in a cooperative, rather then adversarial, relationship.

And—like getting a man on the moon in a decade—we need a national productivity goal. While productivity improvements may be different for each sector of the economy—we should be thinking in terms of a doubling of our overall level of productivity. And if the Japanese sustain their momentum—and I believe they will—we may need to set our sights in the manufacturing sector even higher.

As a nation we are capable of achieving such a goal—but we need a sense of urgency to do it.

Thank you.

[From Fortune Magazine, June 15, 1981]

WESTINGHOUSE'S CULTURAL REVOLUTION: IN SEARCH OF PRODUCTIVITY, A 95-YEAR-OLD SYMBOL OF AMERICAN ENTERPRISE GOES JAPANESE

(By Jeremy Main)

At Westinghouse Electric Corp. something strange is going on: a sizable part of the company is converting to Japanese-style management. Westinghouse hopes to achieve dramatic improvements in productivity by trying a form of Theory Z, described by William G. Ouchi in a new handbook for American businessmen who want to follow the Japanese way. The effort is producing a cultural revolution at Westinghouse by overturning old-style boss-employee relationships.

The company's construction group, which represents 7 percent of the work force, offered itself up as guinea pig for the experiment last year. The new method rests on the theory that if labor and management work at achieving a Japanese-style consensus, Westinghouse will get better ideas, better decisions, and better execution. So today, in the black steel corporate headquarters in Pittsburgh's Gateway Center, bosses in the construction group don't simply issue orders; they seek consensus. Out in the factories, foremen don't bellow coarsely at workers—at least they aren't supposed to; they ask for suggestions. Everywhere new committees and councils are meeting on office time to discuss matters as nebulous as group synergy and as critical as next year's capital allocations.

Theory Z is a kind of "participative management," which is hardly novel. Social scientists have been advocating participative management for years and many American companies have tried it, up to a point. But to see it seep into a hierarchical old industrial company like Westinghouse, with its established chain of command and staff of tradition-minded engineers, is a bit like watching the U.S. Marines parade in blue jeans, long-haired and unshaven.

A ROUNDABOUT ROUTE

The experiment began as a drive to increase productivity. Westinghouse had gone through tough times in the Seventies: it made a series of bad acquisitions, got involved in a nasty bribery case, and lost a pile on consumer appliances before selling the business. Worst of all, Westinghouse agreed to supply uranium under fixed-price contracts—an appallingly risky decision that ultimately will cost the

company nearly $1 billion. To recover lost ground and meet the escalating challenge of the Japanese, the company decided two years ago that it would have to increase productivity much faster than the 2 percent or 3 percent that U.S. industry achieves in a good year.

Participative management might seem a roundabout route to productivity; it certainly isn't a quick fix. Westinghouse expects to wait two years before seeing any results, ten years before the benefits take full effect. The corporation isn't betting all its marbles on participation: it's also testing a panoply of other devices ranging from a form of "matrix" management to heavy investment in automation. Some industry and academic critics argue that the degree of worker participation is irrelevant to productivity; workers respond to challenge, responsibility, advancement, financial rewards—not simply to being asked to participate in decisions. Skepticism about participative management exists at Westinghouse, but the highest-ranking official close to the productivity drive, Vice Chairman Douglas D. Danforth, says he supports the idea warmly.

In the construction group, they talk of participative management with the ardor of those who have seen the light. "The point is, we are making much better decisions than before," says Donald W. Neukranz, who runs the group's elevator division in New Jersey. "We are getting a contribution and commitment from larger numbers of people. The management team becomes excited and it works." When participative management catches on, according to the faithful, decisions are carried out by enthusiasts who have helped shape them, who feel they "own" the decisions, rather than by unwilling subordinates who have simply been told what to do without really knowing why.

EVERYONE A TIGER

Westinghouse executives think participation is a secret of Japanese success. "When you visit Japanese factories and see everyone, but *everyone*, working like tigers to make that product more reliable at a lower cost, it's awesome," says William A. Coates, the executive vice president who runs the construction group. "They even come back early from their breaks. In factory after factory, everyone inside is trying to whip us. If we don't get that attitude, we literally won't survive."

The Westinghouse management council, which annually convenes the 225 or so senior executives to discuss solemn undertakings, recognized the importance of productivity when it met for two days at the Tamarron in Durango, Colorado, in 1979. Vice Chairman Danforth appointed Thomas J. Murrin, president of the Public Systems Co. in Westinghouse, to head an ad hoc committee and gave him $20 million to explore ways of increasing productivity. As Murrin describes it, Westinghouse sort of backed into the policy: "Our operating margins didn't look as good as we hoped for the future and we agonized a lot over this. The significant and delightful development came when we freed ourselves from trying to solve the problem by changing the mix or getting the volume up or raising prices. We said, realistically, these things are not fully, and sometimes not at all, under our control. Maybe we had better concenrate on things we can influence. We are going to have to do more with less—fewer people, less money, less time, less space, fewer resources in general—and I think that's probably a pretty good definition of productivity."

Murrin had a predisposition for participative management that you might not expect to find in a man so blunt and burly. He remembers that when he was growing up on New York's East Side, his father, a structural steelworker, used to explain to him what a "dumb ass" his foreman was. It taught Murrin that the ordinary worker could contribute a lot more to his work than muscle. Playing tackle for one of the Fordham University squads coached by Vince Lombardi added another element to Murrin's philosophy of productivity; he learned the power of teamwork.

Murrin carries a lot of weight at Westinghouse. The corporation is divided into four major companies—International, Power Systems, Industry Products, and Public Systems. As president of Public Systems, Murrin turned an unpromising hodgepodge of defense electronics, soft-drink bottling, real estate, and other operations into the fastest-growing company of the four. Public Systems in turn is divided into four groups. The one experimenting with participative management—the construction group—makes equipment for the construction industry—elevators, office systems, fans, heating and cooling equipment—as well as rapid-transit equipment for cities and people movers for airports.

83-184 O - 81 - 9

When Bill Coates was promoted from president of the elevator company in 1979 to run the whole construction group, he had no particular convictions about productivity. But he is the sort of fellow who gets up at 4:45 A.M. to run five miles and reaches the office at 7 to 7:30. He can develop enthusiasms as strong as Murrin's. Setting out to discover what others were doing to improve productivity, Coates and his boss visited Japan and sent teams of specialists there. The more they learned, the more they became convinced the Japanese were showing them the way.

They were especially impressed by Bill Ouchi, 37, the author of Theory Z and a professor of management at the University of California at Los Angeles. Ouchi produced a videocassette explaining how the Japanese achieved growth rates rarely matched in the West. Murrin and Coates saw the cassette and invited Ouchi to Pittsburgh to explain Theory Z last August. (For a review of Ouchi's new book and the scholars' controversy it has aroused, see Books and Ideas, page 247.)

HOLDING ONTO YOUR BROTHER

They bought participative management in general, but by no means the whole Japanese system. Indeed, it would not only be silly but illegal to imitate the Japanese in every way. For instance, Japanese women are systematically excluded from management. In addition, the Japanese believe in evaluating employees infrequently and promoting them slowly, policies that would send the best and brightest at Westinghouse streaming for the exits. Nor is the construction group about to offer lifetime employment to its workers, though it is edging toward a policy of fewer layoffs. When one of the construction group's units suffered a huge drop in orders last February, the company did not send workers packing, as it would have before. "We want to think of employees as family," says Coates. "You don't lay your brother off."

Westinghouse made some mistakes as the participative-management drive got under way. Ouchi was concerned last year that the construction group was starting the process at the wrong end by launching it on the factory floor. Until executives start making their own decisions by consensus, he says, efforts to install participative management down in the rankings will almost certainly flounder. Coates and Murrin saw the point. They also knew that managers and white-collar workers represent half the corporation's work force and 70 percent of its payroll, so greater opportunities for increasing productivity could be found in the office than on the factory floor.

Coates discovered that building participative-management teams and defining their roles required subtle leadership—and a degree of hypocrisy. You can't rely on spontaneous forces to set up quality circles, managers' councils, and the like, yet if the boss simply orders participative-management groups established, the process of setting them up wouldn't be truly participative. A similar dilemma arises when new participative-management teams start trying to make decisions. Should the boss watch as the group flounders in disagreement? Should he let stand a decision reached by participation if he knows it to be wrong? Or should he intervene and undermine the participative ideal? "Sometimes the boss has to nudge his people in a nonauthoritarian way," says Ouchi, who agrees that a little hypocrisy can sometimes be effective.

Coates reserves the right to make unilateral decisions or overrule a consensus, but he must use his powers sparingly if participation is to take root. He is gradually submitting more and more decisions to the consensual process. The transition, he admits, "is very tricky, very difficult." But as things have turned out, he says, he has been surprised at the soundness of decisions reached and has vetoed only two or three.

To get the participative process rolling, Murrin and Coates relied on a classic poly management uses when it needs support for what has already been decided: they called in consultants. Dozens of consultants gave seminars and lectures, led team-building and sensitivity-training exercises, and ran courses for future team leaders or "facilitators," as they are called. Coates further prepared the ground for seeding by recruiting members for his staff who had shown enthusiasm for participative management in other parts of his group.

"PRIORITIZING THE AUDIBLES"

In this setting, participative committees, councils, and circles began sprouting last fall. Ouchi became chairman of an outside committee of three consulting academies. Coates's staff formed three quality circles and a business-strategy

board. The general managers of the construction group's five units, who had rarely met to discuss issues of common interest, created a council that meets monthly. They also set up ten councils under them in which controllers, personnel directors, marketing directors, and other specialists from each of the units discuss common problems with their counterparts in other units. In the plants, which already had limited experience with participative management, workers and supervisors formed 60 quality circles. (Westinghouse as a whole has adopted the quality-circle idea and now has more than 600 circles, with three being added every day.)

To the outsider, the functions and achievements of these new groups are not always clear. A quality circle can wander free-form among subjects without having fixed goals. The circle convened by the group staff may have made an important contribution to the jargon of the age. They have discussed the problem of "audibles," these being defined as unexpected interruptions such as phone messages that break into the day's scheduled business. The purpose of the discussion, as one participant put it, was to figure out how "you can control your audibles so you can prioritize them."

The circle has been discussing the nebulous subject of group synergy since November. At a recent meeting some of the members seemed adrift, still searching for something solid to hold onto. When Robert J. Tubbs, group legal counsel, suggested a vote on an order of priorities, he was hooted down. In the proper participative way of doing things, you don't take votes or try to impose your will on anyone—you keep talking until you reach a consensus. Chastened, Tubbs blushed and said, "Let's consensutize." The meeting ended with a 15-minute discussion about when to hold another meeting; partly because the members of the circle had so many meetings to go to it was difficult to find a time to suit everyone in the room.

IT SHOWS IN THE RESTROOMS

By contrast, the quality-of-worklife committee composed of workers and supervisors at Grand Rapids, Michigan, where Westinghouse makes office systems, couldn't be more down to earth. A subcommittee took responsibility for establishing an attractive cafeteria to replace a shabby vending-machine area. In the proper participative manner, management did not limit how much could be spent and accepted the subcommittee's plans, which cost $500,000 to implement. Another subcommittee tackled vandalism in the restrooms, where some workers were covering the walls with graffiti and wrecking the drinking fountains. The company fixed up the restrooms and the union asked its members to report vandals to their steward. "People are treating the restrooms better," says Lee Raterink, president of the carpenters' and joiners' local. "It worked because we worked together, because people participated in the decision."

The council of managers from the construction group's six units has produced a string of policy decisions that would undoubtedly have come out differently before. For instance, each unit used to design its own business systems, such as inventory and manufacturing controls. The council decided that the job should be done by the group as a whole. Coates says the savings will amount to "tens and tens of millions of dollars." The council persuaded Coates's staff to reorganize so that it could focus on strategic matters rather than the day-to-day business of the plants. It also created a new program for choosing and training technical personnel, rejected two potential acquisitions, and set up a cooperative system for handling bids on contracts that involve more than one unit.

GIVING UP TURF

Perhaps the most important decision by the managers' council allocated capital among the units. In the past, the managers would never have met to discuss allocations. Coates or his predecessors would have received requests for funds, assumed they were inflated, lopped a bit off each, and told the managers what they were getting. This time, after listening to each other's problems and prospects in the council meeting, the managers abandoned the normal stance of defending their own turf. They decided certain units should be pushed hard and others cut back—in one case almost to zero. Some of the managers voluntarily gave up allocations Coates thinks they would have fought for had he tried to make the cuts. "They helped me do a fantastic job that I could never have done myself," he says. "If I had ordered them to do what they themselves decided to do, I would have had an insurrection on my hands."

Some managers, particularly at the middle and lower levels, don't like the consensus system and a few had to be reassigned to jobs in the group where they don't have to implement the new plan. But most have become enthusiasts, some to the point of growing tiresome on the subject, like reformed drinkers. They don't feel the loss of power many managers fear at first. "I don't perceive participative management as giving up controls," says Coates, "but rather gaining a ton and a half of help. The old way wasn't good enough. Industrial systems have become much too complicated for the know-it-all manager to know it all anymore."

Blue-collar reaction ranges from cool to warm. The Grand Rapids plant reports big drops in grievances and absenteeism. It sends employees to visit customers and see how the product is performing. They have come back with suggestions. They figured out ways of attaching fabric more smoothly to the office partitions they build and improving the alignment of the fixtures on them. Last year 350 employees, about one-third of the work force, went to the office-furniture show in Chicago to see what they were up against from the opposition.

EXPLETIVE DELETED

Even at the stone and concrete Sturtevant division factory in Hyde Park, Massachusetts, a turn-of-the-century relic where Westinghouse builds huge industrial fans, old adversary relationships between labor and management are beginning to crack. The union has just agreed to go along with participative management, provided it is introduced by a consultant approved by the local. Some authoritarian supervisors seem already to be melting into the participative mood, albeit gradually. Referring to one of them, a machinists' union official says, "Instead of calling me a f——g ass, now he just calls me an ass."

Although even the most enthusiastic converts agree that participative-management meetings eat up hours, Coates says lost time is recovered later. "We spend a lot of time trying to get a consensus, but once you get it, the implementation is instantaneous. We don't have to fight any negative feelings." Ouchi predicts that once Westinghouse people get used to the new style, meetings will go faster.

The participative system has revolutionized the role of secretaries. The group has installed communications and information systems that allow executives to record messages to one another rather than play telephone tag, missing connections because first one and then the other is tied up. When an executive has a convenient moment, he can now dial a message center and hear all his callers explain what they want. Then he can dictate a reply or forward the message to someone else. The system relieves secretaries of the endless task of taking messages. It has proved so successful that it will soon be extended from 142 users in the construction group to 1,500 executives across the whole corporation.

A new word-processing center has taken over dictation and typing chores. Bosses can dictate letters and memos to the center at any hour seven days a week from anywhere in the world. If they want to edit the material, they can have it displayed on terminals in their offices or at home. At first, Coates says, secretaries felt threatened by the change, thinking that the center was taking work away from them. But when they saw that there were more interesting and productive things to do, they quit worrying. Although the construction group hasn't found a way of measuring office-worker productivity, Coates says, "production is up substantially at headquarters and the principals have more time to work on substance." The secretaries have become administrative assistants, taking over tasks their bosses used to handle, such as organizing conferences, sitting on task forces, and preparing and presenting research data. One sign of how much the secretaries do now: when Coates checked in with his secretary while he was traveling recently, she told him she had received 13 calls to his one—and she took care of that one too.

Given the opportunity to be creative, the secretaries have come up with good ideas. For instance, they realized they were wasting time, money, and stationery preparing separate envelopes all going to one division such as Grand Rapids. Now they send just one large envelope a day. When the construction group staff was moving to new offices, the secretaries decided that half the files could be thrown out and that one central file could serve the whole staff. This and other improvements will reduce by one-fifth the space group headquarters occupies.

WAITING FOR THE TAKEOFF

By amassing many such small, commonsense changes, Coates and Murrin hope to show they can accelerate an improvement in productivity at Westinghouse that already seems under way. Westinghouse measures productivity by subtract-

ing the cost of goods and services from total sales to get value added and then dividing by the size of the work force. By this measure, corporate productivity gained 2 percent or 3 percent a year during most of the Seventies and met the new goal of a 6.1 percent annual increase during the last two years. The Public Systems Co., including Coates's group, did even better—up 8 percent last year. The most-quoted government statistics measure productivity differently, by dividing output by man-hours of labor. But when government statisticians use the Westinghouse yardstick, U.S. productivity in all manufacturing shows an increase of 0.4 percent in 1979 and a drop of 1.4 percent in 1980.

Coates and Murrin are convinced their system will work. But it will take time and continuing signs of progress to win over supervisors and middle managers who continue to harbor doubts about the system. "They've seen a lot of programs come and go," says Ouchi. "They wait to see if you give them commitment. Once they see this is for real, then, whoosht, productivity takes off." Even then, Ouchi believes, the whole corporation will have to adopt the system if it is to yield the bounteous harvest it is capable of producing. "Participative management," he says, "cannot survive in an alien corporate culture."

Representative REUSS. And now from Beatrice Foods, Mr. Ted Olson.

STATEMENT OF TED E. OLSON, ASSISTANT VICE PRESIDENT AND DIRECTOR OF OPERATING SERVICES, BEATRICE FOODS CO., CHICAGO, ILL.

Mr. OLSON. Thank you, Mr. Chairman.

I would like to express my appreciation to the members of the committee for the opportunity to appear here today, to present to you the productivity efforts Beatrice has initiated.

In the interest of time, I would like to summarize my prepared statement, which was submitted for the record, so that we can share with you a videotape on one specific example.

I am Ted Olson, assistant vice president and director of "operating services" for Beatrice Foods Co. "Operating services" is a corporate-level department that has company-wide responsibility for productivity programs at Beatrice.

I am also a member of the board of directors of the American Productivity Management Association.

We at Beatrice have identified productivity improvement as a key factor in insuring job security for our employees by maintaining or improving our competitive position in the marketplace.

I am pleased to report that we have converted this concern into positive action. In fact, in our fiscal year which ended February 28, productivity improvements in our operations accounted for a $7 million savings.

Before I describe our productivity program, I think some background on the company will be helpful, as our program has been tailored to suit the unique nature of Beatrice.

Beatrice is one of the largest diversified food companies in the world. It would rank 33 in the 1980 Fortune 500, based on fiscal year 1981 sales. Its domestic-based employees, nearly 60,000 of them, can be found in every State of the Union.

Beatrice produces over 9,000 products for world markets, including such well-known products as Samsonite luggage, Tropicana orange juice, La Choy oriental foods, Eckrich meats, and Meadow Gold dairy products.

Since Beatrice has more than 400 diverse operations, the company has followed a philosophy of decentralized management. The general

manager of each operating company is given broad responsibilities for making all operating decisions. That basic autonomy of our companies was a strong consideration in the shaping of our productivity program.

Our program began with the concern and commitment of top management. Our top management saw the rising costs of producing goods, and they also realized we could no longer pass on those rising costs, as we were experiencing increased price resistance in the marketplace.

Productivity improvement became essential in lowering the costs of doing business. With the productivity problem identified, management urged us to develop a comprehensive plan for improving productivity across the board throughout the company. I should add that the blessing and enthusiasm of top management is absolutely essential in the implementation of an effective productivity program, even more so in the case of a company like Beatrice.

We believed it was necessary to structure the program to encourage a free exchange of ideas among our operating units, with the thought that shared knowledge and experience would enhance the productivity effort.

Our first phase, building awareness, began with our annual managers' conference in 1979, as our chairman, Jim Dutt, announced the corporate-wide productivity effort to the over 500 managers in attendance.

Next, we used our corporate management newsletter to publicize productivity "success stories," which showed how various profit centers were implementing productivity-improving techniques with rewarding results.

We then developed our own tailormade workshop for teaching operating managers various skills relating to productivity. Our workshop is designed to foster participation by attendees in developing specific action plans for productivity improvement in their operations.

Our next challenge was to motivate the operating units through a system of rewards and incentives, hence the development of "Uncommon People, Uncommon Goals," a corporate program designed to reward profit centers for productivity performance. It is designed as an umbrella program, in which the corporate office provides all the awards, materials, and support needed to kick off a given profit center program.

It is, however, up to the individual operating unit to develop its own criteria for measuring the result of the program in its own approach to increasing productivity.

As I stated at the outset, we saved over $7 million last year as a result of the above program. We are expecting a $15 million savings in fiscal 1982. Our savings should double again in fiscal 1983, as more than half the profit centers are expected to be involved in the program by then.

I would like to give you an idea of the diversity of productivity programs already reaping benefits at our profit centers. These are only a few of the several dozen that we have on file, but they will serve as a sample of the variety of techniques that can be employed to achieve productivity improvement.

At our Royal Crown bottling plant in Los Angeles, production per shift is up 300 percent due to a slight modification in a 2-liter bottling line recommended by an employee.

Fisher Nut, St. Paul, Minn., by moving to lighter, less costly tin containers for its nut products, saved over $130,000, while making a stronger, safer container in the process.

There are many other strong Beatrice productivity stories. But I would like to show you one in detail on videotape. It involves La Choy or Archbold, Ohio, and how it recently increased its production of oriental foods from 12 to 14 cases per employee hour. In particular, the videotape shows how employee enthusiasm and participation at the shop floor level can make a big difference.

Mr. OLSON. I would leave that tape with the committee for the record, Mr. Chairman.[1]

Beatrice's efforts are just the story of one company's progress in this area. Meaningful improvement for the Nation as a whole will only come with widespread wholehearted support of American business in general.

Based on our experience, to be effective, a productivity program must have the endorsement of top management. We think our little booklet, "The Beatrice Productivity Philosophy" and our strong statement on productivity as a strategy in our most recent annual report, which has been distributed to the committee, are strong evidence of our top management's commitment.

It must also be provided with the financial resources to succeed; it must foster the enthusiasm of line management; it must encourage all levels of the organization to do something, not just management; and it must be measurable.

In addition, the program must be guided by patient hands. It took 2 years for our program to bear fruit, and we estimate it will be another 2 to 3 years before specific productivity goals are fully integrated into Beatrice's business plan.

We feel we have been successful in meeting all of these conditions, and we are thankful that we could share our experience with the committee today.

Thank you.

Representative REUSS. Thank you.

[The prepared statement of Mr. Olson follows:]

PREPARED STATEMENT OF TED E. OLSON

I am Ted Olson, assistant vice president and director of Operating Services for Beatrice Foods Co. "Operating Services" is a corporate level department that has company-wide responsibility for productivity programs at Beatrice and provides project assistance to our operating companies in a variety of specialized management disciplines. I also represent Beatrice on the steering committee of the Manufacturing Productivity Center and am a member of the board of directors of the American Productivity Management Assn.

I would like to express my appreciation to the members of the committee for the opportunity to appear here today and present to you the productivity program and efforts Beatrice has developed and initiated in recent years. We at Beatrice have identified productivity improvement as a key factor in ensuring job security for our employees by maintaining or improving our competitive positions in the marketplace. It is the one surest way of containing the inflationary spiral that has plagued this country for the past several years. I am pleased to report that we have converted this concern into positive action. In fact, in our fiscal year which ended February 28, productivity improvements in our operations accounted for a $7 million savings.

[1] The videotape referred to may be found in the committee files.

Before I describe our productivity program, I think some background on the company will be helpful, as our program has been tailored to suit the unique nature of Beatrice.

Beatrice is one of the largest diversified food companies in the world, and would rank 33d in the 1980 Fortune 500, based on fiscal 1981 sales. It is the third largest corporation in Chicago, and its domestic-based employees—nearly 60,000 of them—can be found in every state in the union. In addition, it is one of the most successful companies in the United States, having posted increases in sales, earnings, and earnings per share each year for the past 29 years.

Beatrice produces over 9,000 products for world markets, including such well-known products as Samsonite luggage, Tropicana orange juice, La Choy oriental foods, Eckrich meats, and Meadow Gold dairy products. We serve such diverse industries as graphic arts, chemical, textiles, and manufactured products, in addition to food processing, dairy, and food distribution activities.

Given the diverse nature of its operations and the over 400 operating companies under the Beatrice banner worldwide, the company has followed a philosophy of decentralized management. In other words, the general manager of each operating company is given broad responsibility for making all operating decisions. The basic autonomy of our companies was a strong consideration in the shaping of our present productivity program, as you will see.

I would like to spend my remaining time describing how our productivity program was developed, and what our objectives are. I will then describe specific results achieved at several of the operating companies that have been involved in the program.

Our program began with the concern and commitment of top management. Our top management saw the rising costs of producing our goods, and the resultant decline in profit margins in many of our companies. We could no longer pass on our rising costs and were experiencing increasing price resistance in the marketplace. Productivity improvement became essential in lowering the costs of doing business. On the positive side, improvements in productivity would make Beatrice more competitive in world markets, and would provide a particular boost to our exporting activities.

With the productivity problem identified, management urged us to develop a comprehensive plan for improving productivity across the board throughout the company. I should add that the blessing and enthusiasm of top management is absolutely essential in the implementation of an effective productivity program; even more so in the case of a company like Beatrice, with its diverse and numerous operations worldwide.

We identified the following objectives in sequence, for a corporation productivity program:

First, to generate a broad awareness of the productivity problem company-wide and encourage all of our operating companies to "so something" to increase the rate of productivity improvement in their operations;

Next, to provide tools and training to operating managers to help them implement their own productivity improvement programs that would increase the yield from our investment in labor, material and capital resources;

Third, to find ways to motivate our managers and employees in order to convert awareness and knowledge into action;

Fourth, to develop a flexible system to measure results;

And finally, to use those results to establish clearly defined future goals and objectives for increasing productivity at all levels of the corporation, and incorporating these into our annual planning process.

At the same time, we believed it was necessary to structure the program so as to encourage a free-flowing exchange of ideas among our operating units, with the thought that shared knowledge and experience would enhance the productivity effort.

Our first phase, building awareness, began with our annual managers conference in 1979, as our Chairman, James L. Dutt, announced the corporate-wide productivity effort to the over 500 managers in attendance. This immediately impressed our operating managers with the importance the corporation was conferring on productivity improvement.

We then used our corporate management newsletter to publicize productivity "success stories," which showed how various profit centers were implementing productivity improving techniques with rewarding results. These written messages were reinforced with speeches by Mr. Dutt and Donald Eckrich, our chief operating officer, at various corporate and divisional meetings.

We then developed our own tailor-made seminar or workshop, for teaching operating managers various skills relating to productivity. Our workshop utilizes a combination of internal people and outside consultants, and is designed to foster feedback and participation by attendees. They are conducted on a quarterly basis, and thus far, approximately one-third of our operating companies have taken advantage of these workshops. We also assigned a full-time coordinator to manage the workshop program, as well as work with individual profit centers on a case-by-case basis to help them get their own programs moving.

In addition, the corporate officer provides the operating companies with in-depth training materials that reinforce techniques and skills learned at the workshops.

With the infrastructure and training programs in place, our challenge was to motivate the operating units through a system of rewards and incentives. Hence, the development of the theme, "Uncommon People, Uncommon Goals," a a corporate-based program designed to reward profit centers for outstanding productivity performance. It is designed as a "turn-key" program, in which the corporate office provides all the awards, materials, and encouragement needed to kick off a given profit center program. It is, however, up to the individual operating unit to develop its own criteria for measuring the results of the program and its own approach to increasing productivity. This self-determination is in keeping with our decentralized management structure and is absolutely essential in order to get our diversified operations to climb aboard the productivity bandwagon.

In terms of structure, we have encouraged the designation of "productivity coordinators" at the operating unit and divisional levels. The coordinator is generally the vice president of manufacturing, and is the key to the effectiveness of a given program.

As I stated at the outset, we saved over $7 million last year as the result of the above program, which dropped directly to our bottom line. And that result, I might add, was in spite of the fact that only a small fraction of our operations were fully participating in the program. We are expecting a $15 million savings in fiscal 1982, as an anticipated one-fourth of our operations will be on-line. Our savings should double again in fiscal 1983, as more than half the profit centers are expected to be involved in the program by then.

I would like to give you an idea of the diversity of productivity programs already reaping benefits at our profit centers. These are only a few of the several dozen that we have on file, but they will serve as a sampling of the variety of techniques that can be employed to achieve productivity improvement.

At E. R. Moore, a specialty clothing manufacturer in Niles, Illinois, productivity was improved 28 percent and over $200,000 saved through a nine-step program. This included the development of a new inventory control system, consolidation of its shipping and distribution operations, and modifications in its T-shirt, gym wear and fashion dress production lines.

At our Royal Crown bottling plant in Los Angeles, production per shift is up 300 percent, from 3,500 cases to 10,000 cases. The reason was a slight modification in its two liter bottling line. According to our divisional management, RC–LA now has the fastest two liter bottling line in the United States.

At Delmar-Liken Home Furnishings in Westminster, Calif., production of its woven wood and aluminum blinds is up 30 percent, due to cutting non-productive time on the manufacturing lines. In addition, the company is educating its employees about productivity and encouraging suggestions and increased contact between workers and line management.

Rahway, New Jersey-based Dri-Print Foils save over $420,000 despite rising raw materials costs, through the introduction of a short interval scheduling system. Labor costs were reduced 42 percent, with no decline in output or product quality.

Fisher Nut, in St. Paul, Minnesota, by moving to lighter, less costly tin containers for its nut products, saved over $130,000, while making a stronger, safer container in the process. It saved another $275,000 by going to a different configuration for its glass jars.

Charmglow in Bristol, Wisconsin, increased productivity 40 percent by modifying the packaging for its line of barbeque grills, as well as changing the manner in which it paints the grill parts.

There are many other strong Beatrice productivity stories. But I would like to show you one in detail on videotape. It involves La Choy of Archibold, Ohio,

and how it recently increased its production of oriental foods from 12 cases to 14 cases per employee hour. In particular, the tape shows how employee enthusiasm and participation at the shop floor level can make a big difference.

To sum up, we believe our productivity program works. In fact, based on our initial budget of $1 million, our return on investment has been 7 to 1 for the first full year. In addition, we have achieved these results by only adding one person to our staff—Michael Bremer, our corporate productivity coordinator.

More importantly, our ability to achieve measurable productivity improvement has reaffirmed senior management's commitment to the program and has given us the basis to push for our ultimate goal—to integrate productivity improvement into our basic business plan at all levels of the company. In other words, this would make measurable improvement as important as other key financial objectives, such as return on investment, earnings, sales, and so on.

Management support of the program is underscored by the fact that productivity improvement is one of the key strategies cited for meeting the financial objectives recently stated by the company in our 1981 annual report.

This is just the story of one company's efforts in this area. Meaningful improvement for the nation as a whole will only come with the widespread, wholehearted support of American business in general. Based on our experience, to be effective, a productivity program must have the endorsement of top management; it must be provided with the financial resources to succeed; it must foster the enthusiasm of line management; it must encourage all levels of the organization to do something—not just management; and it must be measurable. In addition, the program must be guided by patient hands. It took two years for our program to bear fruit, and we estimate it will be another two or three years before specific productivity goals are integrated into Beatrice's business plan. We feel we have been successful in meeting all of these conditions, and we are thankful that we could share our experience with the committee today. Thank you.

Representative REUSS. Congressman Richmond.

Representative RICHMOND. Thank you very much, Mr. Chairman.

I found the testimony of all four of you gentlemen fascinating. I want to thank you for coming and congratulate you on your obvious interest in bringing American industry back where it belongs.

I recently spent 11 days in Japan myself and was suitably amazed at the robots, the plant layout, the high level of equipment, the cleanliness. But the productivity, I think—we ought to realize productivity only comes from morale, equipment, cleanliness, high quality standards.

I walked into a Toyota plant. The plant was 7 acres, a 300,000-square-foot plant. It was one of their engine block factories, and, I found some equipment that I designed myself when I'd been with the Baker Bros., who made transfer machines—but the whole factory had only 170 workers. It told you that it is not the Japanese productivity that's getting the Japanese ahead, it is the Japanese savings, which are converted into Japanese investments, which are converted into the best equipment money can buy: the Japanese colleges, which produce excellent engineers, and excellent design people, who lay out factories beautifully.

We walked actually blocks and blocks and blocks in this factory and saw absolutely no workers at all, as you can well imagine, if 170 workers—distributed in a 300,000-square-foot factory—how few workers you see.

I came back with the idea that Toyota is obviously ahead of us because they built new factories when we still used our old factories.

There is an element of cleanliness and dignity about the place, which I found fascinating. Mainly, they have got great technical expertise on laying down their lines on their design and their engineering and their equipment.

I find in my own factories that, if you give your workers that same quality of life, you also get productivity, good productivity.

What bothers me is that, sure, the Japanese have productivity, we also know that they have 100 percent literacy. We also know one of the greatest problems we have on productivity in the Armed Forces is the lack of literacy. That is something that has been bothering me terribly. Many of the accidents that have been occurring are mainly because—our workers, who are supposed to maintain equipment, literally cannot read the directions.

What are you gentlemen doing in your own factories about remediation? When you get a factory worker in, do you do anything? Do you provide them with after-hours classes? Do you provide them with some opportunities to learn to read better, write better, and figure better? Does that enter into any of your programs?

Mr. MURRIN. We can all respond. Let me start, please, to your very insightful question.

A key component of the new "Productivity Center" that I mentioned in my earlier comments relates to the establishment of a major training capability that we, frankly, did not have before. Training is becoming a way of life throughout the corporation and is taking many, many forms. Let me just cite two extremes.

I and 24 of my senior colleagues this week are finishing 4 intensive weeks of what I daringly call an executive refresher course at our local leading university, Carnegie-Mellon, to update us as to the current realities, not only in technology and finance, but in politics and sociology. So, we are doing this to ourselves in the top management area.

That is permeating throughout our organization, down to, for example, providing our on-the-factory-floor electronics assembly personnel with the latest in audio-video self-training capabilities, where I am embarrassed to say, for the first time; we are telling them, as has been reported here, what many of our components and materials actually cost, what our scrap rates and wastage rates are, and what improved techniques can be used to get the quality and the productivity up.

And we are delighted to find virtually universal positive responses.

Representative RICHMOND. What I really want to know is, when you find employees who don't master the three R's, are you trying to do—do any of the companies represented here offer after-hours study classes, where you do help people to learn to read?

Mr. MURRIN. We are doing some of that, particularly in our larger operations, particularly at Baltimore, for example; yes, sir.

Representative RICHMOND. Fine.

I think you are all familiar with the recent Gallup poll, which showed that people do not change their jobs for money. I was always under the impression that the No. 1 reason for people changing their jobs was monetary.

It turns out that people do not change—their first reason for changing their job is expected satisfaction. People leave their jobs not because of money, but because they are not satisfied with their job, they are not satisfied with their working conditions or with the quality of product they manufacture. They are not satisfied with their supervision. They do not leave because of money.

That was a very interesting Gallup poll. Probably you all saw it. It ought to tell us something. It is not only money we have to give our employees, but all of these other things we have been discussing here today.

Mr. Grayson, you chair one of the most distinguished organizations of its kind in the world. What are you doing to help the Pentagon change its sets of priorities? We hear these horror stories day after day.

I had Congresswoman Patricia Schroeder on my TV show last week. Much to my amazement, she told me that the instruction manual for an F–15 plane, which has to be most complicated plane in the world, is a cartoon book. And now I find that the star of the cartoon book is a very, very attractive young lady, who, in these little circles, reads out the instructions on how to maintain an F–15 plane.

Doesn't that sort of scare you, Mr. Grayson?

Mr. GRAYSON. Yes. I would have to see the drawing first; it might be attractive.

But seriously, we have not done any direct work with the Defense Department. I am concerned, particularly with the rapid buildup that the Nation is planning, in its defense capability, that we should have productivity tests to determine whether or not these dollars are going to give us the defense that we want and whether the employees and the contractors in the defense industry are looking at productivity as one of the hallmarks of capability to produce and produce efficiency.

Your direct question, we have not yet worked with the Defense Department and we would like to do that.

Representative RICHMOND. Wouldn't you agree that productivity really means literacy, quality of life, living condition, morale? Aren't those four items really what we are talking about?

Mr. GRAYSON. No question that those are extremely important. I would only add investment to that list. You need assets to do——

Representative RICHMOND. In terms of the armed services, there is no limit to the investment. Under this administration, they have a blank check.

I am wondering, with this blank check, the highest peacetime budget in the history of the world, if we don't get to these basics, like literacy, like morale, like quality of life, how are we ever going to expect to use that wonderful equipment that Westinghouse makes for us to use?

Mr. GRAYSON. No question, human capital has to go along with the physical capital, or it will be inefficiently used or not used at all.

Representative RICHMOND. With your prestigious organization, if you could work with the Pentagon, it would certainly be helpful.

Mr. GRAYSON. We would appreciate the opportunity.

Representative RICHMOND. Mr. Olson, I heard recently that Beatrice invented a new small gadget for a fluorescent light which saves an enormous amount of electricity. Can you tell us about that? I hear it is a remarkable invention.

Mr. OLSON. It is from a small venture capital organization that we own in California, called ETECK. They manufacture—they developed an energy—efficient ballast for fluorescent lights that reportedly saves up to 40 percent of the energy of a fluorescent light.

Representative RICHMOND. Are the electric light companies going to allow it to be used?

Mr. OLSON. We are hopeful. As a matter of fact, we are trying to put some pressure on lobbying for legislation which would require it in Government buildings.

Representative RICHMOND. And it saves that much electricity.

You are certainly to be congratulated.

Mr. OLSON. Thank you.

Representative RICHMOND. I have known your company since it started in Omaha, Nebr.

Mr. OLSON. That's a long time ago.

Representative RICHMOND. Thank you, Mr. Chairman.

Representative REUSS. Thank you.

The discussion of robots is interesting, because that represents a new dimension of capital equipment.

Let me explore with you the philosophical implications of that, which are the same as the philosophical implications of capital, whatever, which goes back to the industrial revolution. And the fear has always been that machines will replace people.

But so far, fortunately for us all, there tends to be enough new jobs created in the making of the machines and then a spinoff effect on the result of the product that is made with the machines. So that instead of fewer jobs, there are more jobs.

However, at every stage of technological progress, I suppose the same old question has to be asked: Wouldn't it be true, however—although one never wants to lull themselves into a false sense of security, wouldn't it be true that since most of the steps taken to save energy that we will all have to take will be labor-intensive steps, hence using more labor—and in view of the further fact, as testified before this committee, that high-technology industries, which are the thing that many say we are going to have to be doing a larger proportion of in this country, tends surprisingly to be labor intensive—my question then is, don't these two factors suggest that not only is it a good time to get into greater productivity via a mix which includes enhanced capital investment in plant and equipment, but that the chances are reasonably good that, because of the demand for human labor, these two other things—energy shortages and high-technology emphasis—we are going to—if we run things right, we are going to be well able to use all of the labor that is released by the new robots and other new pieces of captial equipment?

Mr. GRAYSON. If I might respond to that, I agree thoroughly. I think this is the intent of Mr. Richmond's question, also, that the human capital is equally or perhaps even more important if you had to weigh them on a scale. No question that physical investment is important.

Without the people motivation, training, or working with their managers, you will not get the kick out of the investment that you encourage by tax changes or spending, of whatever kind.

So, this is what I pointed out in my prepared statement, while I am in favor of the direction of the tax changes, I think we have to do more than just encourage the quantity or volume of investment. And if you look at other nations, particularly Britain, and look at her volume of investment and her productivity, you will not see the volume drop very much.

What you will see is the volume staying about the same, but the productivity going down, which is another way to say that you have to have the systems of employees to be able to use the investment in the technological change, or you will not get the kick out of the technology and the physical structures.

So, the opportunity or the push that the energy costs have given us for more labor and the numbers of people entering the work force, the high technology, spinning off labor, give us opportunity, but also creates demands on people utilization.

Representative REUSS. I will put that very fundamental question to the industry members of the panel.

Would you agree with what Mr. Grayson has just said, that productivity is a many-sided thing? And that while productive investment is a very important element in productivity, so are management practices, employee involvement, labor-management cooperation, research and development, regulatory reform, proper fiscal and monetary policies, proper foreign economic and trade policies? Probably some other things, too, but that is enough for starters.

You have mainly, today, talked about plant-level, labor-management cooperation, which is an important element. Would you agree that all of the elements I have mentioned need to be in a proper productivity-enhancing package?

Mr. OLSON. Let me respond to that, Mr. Chairman.

Our organization is a very diverse organization, with a number of types of industries that we are in. We encourage our general managers to look at all aspects of productivity, not only the labor aspect, but in the less labor-intensive companies that are more capital intensive. We encourage them to look at ways of getting more out of their capital assets, and we also encourage our companies, such as La Choy, to look at how they can get more yield out of their products, to look at the material side of productivity.

In addition, there are those many other factors that you have mentioned that have a direct impact on productivity.

Another one of our major focuses currently is to expand the export markets, and we need your help in that area.

Mr. RENIER. I have several comments on what was said. I hope they are helpful. I certainly agree with the human side of this thing, the exploitation of the human asset. That was the thesis of my remarks to begin with.

I think, in terms of looking at various companies in this country, you have got to look at those that are more people intensive and more capital intensive. And it is very dangerous to put them all in one category.

For example, Honeywell has about 100,000 people. And Exxon advertises that it does, too, but they have 10 times the sales of Honeywell. They have, in terms of sales per employee, something that I doubt whether we will ever achieve, simply because of the nature of the business.

Another firm, for example, is Internorth in Omaha, that you mentioned—which has roughly the same sales of Honeywell, but one-tenth the number of people. This is a very complex kind of a thing in terms of comparing companies and people-intensive companies with capital-intensive companies.

I think the basic principles you stated are correct, in comparing ourselves to the Japanese, with regard to robots. And I am sure my compatriot from Westinghouse probably feels the same way.

I don't think, technologically, coming up with a robot—just about any type we would like to develop—is a difficult problem. I think we'd better decide we want to do it, go ahead and do it, decide there is a reason for doing it.

On the other hand, doing the people thing is very tough for us, much harder—as far as the Defense Department is concerned.

Although much of your concern, as I understand, Congressman Richmond, on the other hand, if we take the F–16 and we take AWACS, and we take many of the complex systems, I think they are leading the world in the technology associated with the development of the automated means to do maintenance, to train, to do all of that sort of thing. And indeed, in many instances——

Representative RICHMOND. Excuse me for interrupting. I agree that AWACS and the F–16 are the most advanced planes in the world, but the problem is, as you may know, the maintenance staffs at our various bases are not qualified to maintain those planes. The reason they are not qualified is we have such a high turnover in the military, such low morale, such a poor quality of life for them and their families, and a great deal of illiteracy.

I just wonder, with all of the combined brains here, the combined brains of American industry, why some of us cannot work a little closer with the Pentagon to let them understand that good business is the only way you can run the Army, also. And you must have literacy, you must have training.

Mr. RENIER. Right, I agree. I just find them doing a lot in their area. They are trying very hard to deal with this problem is all I am saying.

I have observed this at the Navy and the Army training agencies myself, personally. Given what they have got to work with, they really bust their backs to do that.

I'm not here to defend them. I am only saying that you are right in terms of the three R's, and that is important. I have to, however, compliment them on where they are spending their R. & D. money right now, to sort of help solve this problem. I think in that regard they have been a valuable asset.

Mr. MURRIN. If I may comment, Mr. Chairman, first on a micro-basis, looking at ourselves at Westinghouse, and then a few moments on something of an overview.

Three principal thrusts of our productivity program involve people, quality, and technology. Much of what I could say here would be redundant, except to observe that when we started the effort we did not appreciate the extraordinary potential that can be derived from doing a much better job in the quality area, literally doing it right the first time.

As trite as it may sound, I am convinced that when the Japanese observed the banners in our factories 20 years ago which said "Do it right the first time," they apparently assumed that we meant that literally, and they have literally gone back and figured out how to do it right the first time.

And I further assert that most of their productivity gains derive from the magnificent job they have done in the quality area.

In any case, people, quality, and technology are the three principal thrusts of our efforts, and I think they are fully compatible and supportive of the points you were making.

On a somewhat more macrobasis, I would like to respectfully suggest that we must obviously do better in business, but we cannot do this alone. We need a great deal of help from labor. And in our corporation, happily, this seems to be forthcoming, partly because we have been sponsoring trips of a large number of our labor leaders to Japan, so they, too, can see firsthand what our competition is; and it has a tremendous impact on them.

We have already talked about academe. I think the problem that Mr. Richmond is addressing so aptly is one of the most insidious and worrisome ones our Nation is faced with. You can buy a robot and install it in 6 months, but we cannot redo, I am afraid, our educational system and our value judgments in that regard that quickly. It will take years. It is a frightful predicament we are in.

Let me comment, respectfully, on Government, and be very candid with you, if I may.

I share the enthusiasm of your enlightened committee and Mr. Grayson's earlier observations that we are beginning to wake up and get out of bed. But I feel a great need for additional leadership by our Nation's leaders, such as you represent, in this regard.

Let me just take one dimension of our competitive situation, vis-a-vis the Japanese, that concerns me greatly.

MITI has been sponsoring, for about a decade, a series of cooperative technology development projects. One of the latest of these is called flexible manufacturing systems. It involves about 20 handpicked Japanese companies who, in turn, have assigned 500 full-time engineers to work on a new flexible manufacturing system.

And with your background, Congressman Richmond, you would particularly appreciate this, as a classic Detroit transfer line with an economic quantity of one. That is, you can run one different style of item at a time and achieve all of the economies of scale and quality that earlier derived only from running hundreds of thousands.

The implications of this, if successful—and we are tracking it closely, and it looks like it will be successful—are profound. They will literally obsolete most of the job shop operations in our country if they pull it off and we don't.

In my view, we need something like that in the United States. We need our Government to take a lead role in that particular sort of effort. If we were to embark cooperatively on this table in such effort, frankly, we would find ourselves in great difficulty with the law and regulations. In fact, we might even be classified as criminals. So, we are at the other end of the situation in terms of Government-sponsored, truly cooperative developments.

I, also, do not think that DOD needs much defense from any of us, but let me share with you that, in our judgment, the most meaningful efforts by far that are carried on by any Federal Government agency in this particular regard are headed by the Department of Defense, in particular the Air Force.

And most particularly here, I am talking about their manufacturing technology programs. Despite their shortcomings, they are, at least in my judgment, very farsighted and very enlightened, and are taking some initiatives that really ought to permeate more of the Federal Government.

Thank you very much.

Representative REUSS. Gentlemen, you have made a great contribution to our deliberations. We are delighted you came, and we congratulate Westinghouse, Honeywell, and Beatrice for what they are doing.

Mr. MURRIN. Mr. Renier, Mr. Olson, we compliment you for taking the leadership you have.

And of course, to our old friend, Jack Grayson, many thanks for bringing this team together.

I have one final question: How did you break your toe?

Mr. GRAYSON. I wish I had a more dramatic or more interesting way, but I dropped a sack of groceries on it. [Laughter.] I hope it is not getting out of bed that breaks your toe.

Representative RICHMOND. One comment. I agree, under the present antitrust laws, you would have trouble making 20 American corporations work together on some new method of manufacturing, but couldn't it be done through Mr. Grayson's organization legally?

Mr. MURRIN. There are some opportunities. We have discussed this sort of concept, and I think with encouragement, and perhaps even a more liberal—if that is the proper term—definition of our existing rules and regulations, we may have those possibilities; yes, sir. We certainly want to pursue them, and we certainly need your guidance and help.

Representative RICHMOND. What I am say, Mr. Chairman, is that this whole concept of manufacturing 12 or 14 spare parts at a low cost actually is so revolutionary that it seems to me that perhaps a group of American companies could finance Mr. Grayson's operation in studying this. It is one of the biggest problems in American industry.

Representative REUSS. What's the hitch with their doing that? Antitrust?

Representative RICHMOND. I don't think Mr. Grayson would have an antitrust problem.

Mr. GRAYSON. We would not, as a center. But if the corporations engaged in common pool activity, even under our direction, we would have to be in conformity with the antitrust implications of their doing that, even though it was done under the auspices of the American Productivity Center.

If there is any center that can do that in the private sector, I would think that we have the opportunity to be able to do that, because we do not have an alined role with either labor or any particular business.

I think that it is an investigation that we would like to pursue. I appreciate the suggestion.

It is the most revolutionary concept I have heard in days.

Mr. GRAYSON. It is tremendous, frightening, and an opportunity.

Mr. MURRIN. They are sufficiently confident, Congressman Richmond, of its success that they openly commit to having the equipment

operational at the 1984 Tokyo Machine Tool Show and available at that time for purchase.

And from our observations of what they are doing, they are going to have it operating in their own plants in a year or two from now.

Representative REUSS. Thank you very much, gentlemen.

We now stand in recess.

[Whereupon, at 3:32 p.m., the committee recessed, to reconvene at 10 a.m., Tuesday, June 5, 1981.]

[The following information was subsequently supplied for the record.]

STATEMENT OF MOTOROLA, INC.

Motorola is a diversified manufacturer of electronic equipment supplied primarily to industry and government in virtually every country in the free world. Our products include: semiconductors; personal, portable, mobile and fixed station communication equipment; a variety of electronic equipment for the automotive industry; data communication products used to interconnect computers via telephone lines or radio relay links; and a variety of products for aerospace and military applications, and commercial radar products.

We employ approximately 70,000 people worldwide. Our major U.S. manufacturing facilities are located in Arizona, Illinois, Texas, Florida, New York, Alabama, Iowa, and Massachusetts. We also have manufacturing facilities in the major foreign markets we serve including, England, West Germany, France, Israel and Japan.

Motorola agrees with the conclusion that has been drawn by several university studies that the major contributors to productivity improvement are people, capital, and technology. The people portion comes from better educated, more highly skilled and better motivated employees. The capital portion comes through providing the most efficient machines, tools and facilities that multiply the output of each employee. The technology portion comes through research and development to find new materials, processes, product designs and methods to reduce the number of manhours required to produce a product. Motorola is aggressively pursuing all three of these avenues. In addition, we place special emphasis on the quality of our products and services. The classical definition of productivity is output per manhour. We firmly believe that a high quality product or service is a greater output than a poor quality product or service.

In addition, by building a quality product, we avoid the wasted manhours required to repair faulty products and eliminate the manhours of labor that wind up in the scrap barrel in many factories. We are particularly proud of our corporate-wide program associated with the people-related dimension of productivity improvement. This is our "Participative Management Program" or, for brevity, "PMP," introduced more than ten years ago. In our factories, we identify people associated with a particular product and pull them together in a PMP team. A basic premise of PMP is that all of our employees have a mental capacity that is not being properly utilized if the individual sits or stands at his or her work station performing repetitive tasks.

Through Participative Management all employees are involved in determining the most efficient and cost effective way to build a quality product. With participation comes an enhanced feeling of pride in a job well done and enthusiasm for further improvement.

For each team, standards are developed relative to costs, inventory levels, quality, productivity, and timely delivery to the customer. A formula has been developed to translate into dollars the value of exceeding those standards or goals. Those savings are shared by the company and the PMP team. The team members receive a monthly bonus check proportional to the savings the team achieved during the month divided among participants proportional to the base pay of the individual team members. The formula allows a bonus that can reach 40 percent of the employee's base pay.

At the present time, approximately 10,000 of our 70,000 employees are participating in PMP. The program is being expanded with a goal of having all eligible employees participating by January 1, 1983.

The results of our emphasis on productivity improvement and cost reduction through skilled people, technology and capital investment is clearly evident in our Semiconductor Products Group.

Over the last 10 years, we have progressed from producing individual transistors to producing integrated circuits that combine the function of as many as 100,000 individual transistors on a single chip of silicon smaller than a child's fingernail. With integrated circuits, the number of transistor junctions that can be produced per manhour has probably increased one thousand fold. There are many applications where integrated circuits are not yet practical and individual transistors must be used. We are now capable of producing 10 times as many of some types of transistors per manhour compared to what we were able to do 10 years ago. These spectacular increases obviously place the semiconductor industry at or near the top of the list for productivity improvement. Since semiconductors are the heart of all electronic gear, these productivity improvements are reflected in all electronic products.

We are also proud that by driving the cost of semiconductors down, we have made possible many affordable productivity improving types of electronic equipment. The computer is a primary example of an electronic device that can do things in a matter of seconds that would take hundreds of manhours to do. Numerically or computer controlled metal working machinery is in use throughout industry. These machines can often do a job 10 or 20 times faster than if a man were turning the hand wheels to the exacting positions required to make a precision part.

Two-way radio reduces inefficiency in our transportation and service industries. Electronic engine controls on automobiles and commercial vehicles reduce fuel consumption. Electronic switching and computer generated voice messages eliminate the need for telephone operators. Electronic controls are being built into farm machinery to maximize the number of acres a man and machine can till or harvest in a day. These are just a few of the ways that electronics can contribute to productivity improvement. We are confident that this trend will continue and may even accelerate in the next 10 years.

The spectacular improvement in productivity in the semiconductor industry has not been easy or inexpensive. As an example, we used to start the semiconductor manufacturing process with a two-inch disc or wafer of silicon. Various layers of materials were photographically printed on this disc in precise patterns to create several hundred transistors. The disc was then sawed into several hundred small squares with each of those small squares having been printed with all of the various materials and patterns necessary for it to function as a transistor. We have over the years, developed ways to grow and process larger discs of silicon.

We are now capable of processing a five-inch disc which yields about 10 times as many semiconductor devices as a two-inch disc. However, there is a major capital cost associated with this productivity improvement. A two-inch disc that would be converted into transistors could be processed with a $10,000 photographic printing machine. A five-inch disc that is to be processed into integrated circuits requires the use of a $500,000 ultra precision projection aligner.

Semiconductor devices of 10 years ago could be tested with a $2,000 transistor tester. Most complex integrated circuits require the use of a computer controlled tester costing $750,000.

The productivity improvement in semiconductors has required heavy investment in both research and capital equipment. There is another problem in industries where the technology changes very rapidly. That is the technological change can obsolete present production equipment very rapidly because the new technology may require new and different equipment.

Our Semiconductor Group has been very fortunate that, in spite of several ups and downs in profitability, on average, we have earned a reasonable profit. Unfortunately, the after tax profit is far from being sufficient to pay for the capital investments required to improve productivity and keep pace with rapidly changing technology.

We believe that modification of the tax laws to allow faster depreciation can contribute to productivity improvement, particularly in industries like ours where rapidly changing technology can make a piece of equipment technologically obsolete long before it is physically obsolete.

We also support the proposal that a tax credit be granted for increased expenditure on research and development. Studies have indicated that more than half of the productivity improvement that has been achieved in manufacturing and agriculture has resulted from new technology.

There is an anomaly in the current tax laws that is a disincentive for multinational companies to make R&D investments in the United States. An invest-

ment in R&D results in increased royalties, sales, etc. that are subject to U.S. tax. A major portion of this additional income will be from foreign sources. The current tax regulations require a U.S. company to allocate a portion of its domestically incurred R&D expenses to its foreign source income for purposes of computing the limitation on the foreign tax credit in their U.S. corporate income tax return.

The allocation of the U.S.-incurred R&D expenses to the foreign source income results in a reduction of the allowable foreign tax credit. The net result is that foreign earnings of a U.S. company could be taxed at a greater rate than its foreign competitors which are often provided tax incentives for R&D expenditures.

The original intent of the foreign tax credit provision in the U.S. tax code is to eliminate double taxation of foreign source earnings. The required allocation of R&D expenses defeats this goal. Thus, many U.S. companies cannot be competitive with foreign manufacturers unless they remove their technology employment and R&D investment from the U.S. The U.S. tax laws should encourage domestic investment in technology. Other countries have recognized the importance and benefits which result from the home country investment in R&D. The regulations requiring allocation of the R&D expenses to foreign source income should be revoked and new regulations adopted which would further encourage domestic R&D investment.

Impediments to improved productivity are more pronounced in the government-contracting sector than in the private sector. We cite the proliferation of government procurement regulations, an oftentimes adversary relationship between government and industry, and the use of the government contract as a vehicle for a myriad of social reform programs as factors which are unique to the government contracting sector and which are additive to those inhibitors to productivity plaguing the private sector. As you know, the Congress has recognized the need to make improvements in certain government contracting processes. Public law 96–83, amending the Office of Federal Procurement Policy (OFPP) Act, charters the Office of Federal Procurement Policy to devise legislative proposals to improve the efficiency of the procurement process and for other objectives. These proposals are slated to be presented to Congress by October of this year.

We would advocate that major emphasis be placed not only on the efficiency of the government procurement process itself, but upon eliminating inhibitors to industrial efficiency in government procurement which tend to raise prices of those goods and services which are procured. Two principal inhibitors we see are:

Inadequate return on investment principally for negotiated government contracts due to inadequate profit and cost recovery regulations. Inadequate incremental return on investment leads to insufficient levels of investment, lower productivity and higher costs.

Difficulties in fitting commercially successful employee incentive bonus payment programs to the government contracting environment.

We believe these two factors, adequate investment levels and sharing the rewards of production efficiency between workers and companies, are necessary concomitants to any overall effort to affect efficiencies in government procurement. In this brief presentation we cannot expand in any detail on these matters other than to state one basic principle which we believe should guide policy in this matter—what ever is done to improve the climate for productivity in the commercial sector in terms of investment or in other ways should apply equally and be implementable within both the commercial and government procurement sectors. Government procurement laws and regulations inhibit both investment and efficiency in this sector. It is time for a more enlightened policy in the national interest. It would now be appropriate for the Congress to assign responsibility for policy study and recommendations in this area to either OFPP or to the Department of Defense as the largest and most influential procuring agency. This assignment would complement the work in which these agencies are already engaged to improve government procurement. We would anticipate that such a process would involve participation from the public, and industry. Our company would plan to participate actively.

BUSINESS MANAGEMENT PRACTICES AND THE PRODUCTIVITY OF THE AMERICAN ECONOMY

FRIDAY, JUNE 5, 1981

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to recess, at 10:40 a.m., in room 2154, Rayburn House Office Building, Hon. Henry S. Reuss (chairman of the committee) presiding.

Present: Representative Reuss.

Also present: James K. Galbraith, executive director; William R. Buechner, Mary E. Eccles, Mark R. Policinski, and William Keyes, professional staff members.

Representative REUSS. Good morning. We will begin by hearing from Don Ephlin, vice president of United Auto Workers of America, and he will talk to us about labor management relations and their impact on productivity. Mr. Ephlin.

STATEMENT OF DONALD F. EPHLIN, VICE PRESIDENT, INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE, AND AGRICULTURAL IMPLEMENT WORKERS OF AMERICA (UAW), DETROIT, MICH.

Mr. EPHLIN. Good morning, Mr. Chairman. We have submitted a lengthy prepared statement about cooperative management/labor efforts, and rather than read it all I will summarize it, if I might.

Representative REUSS. Your prepared statement, for which we are grateful, will be printed in full in the record. You can proceed in any way that is comfortable for you.

Mr. EPHLIN. We have had a number of joint labor/management committee efforts in the auto industry going on for a number of years in General Motors under the title of "quality of worklife programs"; with Ford Motor Co. we call it "employee involvement," which is much the same program; and the success of these programs has contributed greatly to productivity in the broadest sense by improving the quality of the product by reducing waste and scrap.

They have had good impact on absenteeism, turnover, and the like, and in many ways have contributed to more efficient operation of the plants. We are, of course, concerned with our competition position, vis-a-vis the Japanese, particularly, and a week from now I will be leading a team of autoworkers from Ford plants, along with Ford management. We are going to Japan to get a firsthand look at what

they are doing so that our local union leaders will be able to come back and talk to other union people about what they have seen. We really don't think that they are doing anything that we can't do, even better than they are.

Our industry has made some progress in this direction, but I feel there is a lot more to be done. Business schools are now starting to talk about joint management/labor efforts for the first time, really, and I think that is an encouraging sign. Many other unions are now picking up on these programs and many other industries.

I spend a great deal of my time speaking to many different groups, as is pointed out in my prepared statement. These groups are as varied as the Bell System management to the union that represents the airline flight attendants, and these joint labor/management efforts are working very well in all types of situations.

We think there is progress that has been made, but a lot remains to be done. Future negotiations, I think, will require us as labor and management to explore greater and greater roles for workers to play in the operation of the companies with whom we deal. We will not do it in the European style through legislation necessarily, but we think through collective bargaining that we can achieve many of the same goals, and they will be uppermost in our agenda for the next negotiations.

Last, I would say that the thing that we will be looking at in Japan, among other things as you mentioned a few moments ago, the benevolence of the employers. If we are going to really try to get workers involved in improving productivity, we have to find a way of guaranteeing them jobs so that they are not improving productivity at the expense of losing their own job. Unfortunately that is the system at the moment. So providing job security and job guarantees is also a very important goal for us.

Thank you.

[The prepared statement of Mr. Ephlin follows:]

PREPARED STATEMENT OF DONALD F. EPHLIN

It is a pleasure to appear before the Committee on behalf of the UAW's 1.3 million workers to present our views on labor-management cooperation as it affects productivity changes.

We in the UAW are well aware of the importance of healthy productivity growth. The superior productivity performance of our members in the auto industry, and their rank-and-file solidarity, have enabled them to attain a decent level of wage and benefits of which we are proud. In order for those levels to improve further, we realize that continuing productivity growth must take place. This, of course, extends to the rest of society: the economy's capacity to turn a given amount and intensity of work into more and more output must expand if workers are to enjoy higher purchasing power, better services, and more leisure. Moreover, productivity is a major determinant of our ability to curb inflation and to maintain international competitiveness.

Given a workforce of certain skills and education, productivity increases depend overwhelmingly on changes in the amount of capital per worker, and on the rate at which technological improvements are introduced. Productivity is also enhanced by a more efficient organization of work, and by heightened quality. This means that, at the corporation level, the responsibility for productivity growth rests first and foremost with management: it is management who decides on the amount and composition of investment, on the resources devoted to research and development, and on the way the operations will be run. In this

context, labor's contribution to productivity growth must be defined as cooperation and involvement with management's initiatives—within the boundaries of workers' interests. We are not interested in productivity growth, unless it is eventually accompanied by better working conditions, and a more secure and meaningful life.

The UAW has traditionally been supportive of technological innovations; in fact, we can cite the "annual improvement factor" clause in our major contracts with the auto companies as an example of long standing labor-management cooperation to improve productivity. The paragraph reads as follows:

"The improvement factor (a 3-percent annual wage increase) provided herein recognizes that a continuing improvement in the standard of living of employees depends upon technological progress, better tools, methods, processes and equipment, and a cooperative attitude on the part of all parties in such progress. It further recognizes the principle that to produce more with the same amount of human effort is a sound economic and social objective."

While we have pledged not to oppose the introduction of productivity-enhancing, labor-saving technology in the workplace, we have sought to protect UAW members from unnecessary displacement and disruption, and loss of jobs. For example, our major contracts call for preserving work functions within the bargaining unit. Thus, instead of having work transferred away from them when new methods or processes are adopted, our members must be trained in the skills so that they can continue to perform the same work function. Additional provions call for the company to notify the Union representatives, as far in advance as possible, of the introduction of new or advanced technology at any location. This is to allow discussion about the assignment of work which would usually be assigned to UAW members. Incidentally, these discussions, as well as all others pertinent to new technology, are being routinely held in sessions of the joint labor-management National Committees on Technological Progress, first established in our 1979 pattern-setting negotiations.

Although these provisions on job security are a step forward, more needs to be done. The auto industry is poised for rapid gains in productivity in the next several years, while demand for motor vehicles is expected to lag behind the pace of the past. Under those circumstances, continuing labor support of technological innovations will increasingly depend on tighter guarantees that those innovations do not result in unwarranted unemployment. Ford Motor Company President Don Petersen understands this well, as shown by his recent warning that "those who make contributions to improved productivity must be assured that they are not simply working themselves out of a job."

Aside from the annual improvement factor clause that I read earlier, the first formal instances of cooperation between the UAW and the large auto companies in matters affecting productivity came with the establishment of the committees on the quality of working life, or QWL, in 1973. The parties agreed to some general principles on the subject of "improving the quality of worklife," and pledged to urge their respective local managements and local unions to cooperate in these programs. The approach necessarily varies in each situation, since in order to work, the program cannot be imposed from the top down but must be cooperatively and voluntarily developed and implemented from the bottom up.

The first phase in setting up a program is to achieve and consolidate a mutually respectful relationship between local union and management. The next step is to set up pilot projects in which workers, on a volunteer basis, become involved in problem-solving and participate in making decisions regarding the workplace that had hitherto been denied them. By then, the parties generally have learned to operate together more cooperatively, and can jointly analyze conditions that trouble the workers and hence create the opportunity for workers to help resolve them. Whatever is decided is by mutual desire and consent at the local level. The company's central office and the International Union merely advise and consult when called upon.

The concept of QWL committees has caught on at a number of plants: at General Motors alone, there were approximately 50 to 60 QWL programs at one stage or another of development in 1980. Many were still in the early stages—an indication that QWL programs are not "instant utopias" but, rather, follow definite lines or stages of development. Some positive findings detected in QWL workplaces (which admittedly may not be attributed solely to the QWL program) are:

A more constructive collective bargaining relationship;
A more satisfied workforce;
Improved product quality; less scrap; fewer repairs;
A reduction in grievance-handling, as problems are more frequently resolved directly as they arise on the shop floor;
A reduction in absenteeism;
A reduction in labor turnover; and, probably as a corollary;
A reduction in the number of disciplinary layoffs and discharges.

Each and all of these results are desirable; they benefit workers and their Union as well as management and they certainly contribute toward a more productive operation. Above all, they also add up to one of the most fundamental objectives of unionism: the enhancement of human dignity and self-fulfillment at work.

At Ford Motor Co., the issues of quality of worklife, quality of output, and workers' attendance—all clearly related to productivity—are within the jurisdiction of the National Joint Committee on Employee Involvement (EI), re-established and upgraded in mid-1980. Since that time, a major joint union-company effort has been launched to foster the creation of local EI committees, based on the shared conviction that the EI concept—similar to the QWL concept—benefits workers and management through greater involvement by the worker in identifying and solving problems related to his or her job. Worker participation in EI projects is also strictly voluntary; the projects may be terminated by local management or the local union at any time; and elected union people are involved in their development and implementation.

It is important to point out that neither EI nor QWL replaces collective bargaining or substitutes for the grievance procedure. They are thus intended to work within the guidelines and protections afforded by the labor contract.

From the Union's viewpoint, greater involvement is pursued as a means to a better environment at the workplace. From the product angle, the priority is to achieve greater quality. Quality is closely related to productivity. A product that must be brought back for repairs obviously uses up more manhours (and is thus more costly) than if it were acceptable from the beginning. Moreover, a product relatively low in quality will ultimately sell relatively less and bring in less profit; lower investment and lagging productivity will not be far behind.

The question of deficient quality is usually publicized as if it stemmed mostly from workers' poor habits rather than from management's errors and miscalculations. However, the massive recalls that have afflicted the American auto industry are surely not the responsibility of workers; nor is it their fault when local management, as it has often happened, stresses the need to get out the production at the expense of the product's excellence.

As head of the UAW Ford Department, I have called upon our members to make the best contribution they can so that vehicles of the highest quality are built. I am confident that the company is urging management at all levels to do better as well. There are already tangible results from this cooperation. According to Ford's Chairman Philip Caldwell, a 30-percent measurable quality improvement has been achieved on the 1981 models compared with 1980. The *Popular Mechanics* magazine poll of Ford's new Escort owners showed that 87 percent rated workmanship good or excellent—better than all other cars reported, domestic or foreign. Chairman Caldwell, at the Ford stockholders' meetings, acknowledged that:

"This outstanding progress is the result of hard work by all our employees and everybody else in the Ford family . . . Our particular importance has been our employee involvement program and the stimulating leadership by the UAW in achieving its objectives. This program is intended to bring all our employees into the process of improving quality, reducing waste, and providing, at the same time, greater job satisfaction."

The issue of absenteeism has been hotly discussed between our Union and management on many occasions. We have repeatedly pointed out that working conditions under their control—such as excessive overtime—have triggered much of the attendance problem. However, we have also concluded that there are instances when people take time off when they are fully capable of being at work. This makes life in the plant difficult for the overwhelming majority who attends work regularly and undermines the union's ability to provide support for those who are legitimately away from work. As part of the EI program, we are focusing on unwarranted absences in a constructive manner; we are

encouraging local unions to approach this as we have other problems in the past—Alcoholism Recovery programs are a good example. Cutting back on undue absenteeism will have a positive affect on productivity—and it will enhance workers' life at the plant.

Joint EI programs are underway in a majority of Ford plants. The National Joint Committee has made numerous visits to plants to hear reports from the local committees on the progress they have made to date and to encourage even greater activity on a local level. A number of qualified consultants have been engaged to assist in these plant level activities.

In Detroit we now have an organization called the Michigan Quality of Work-life Council which is sponsored and staffed by both union and management personnel. The Council serves to assist groups to start QWL programs—such groups as Volkswagen, Allen Industries, Budd and several school district and city governments.

I have had the opportunity to address numerous groups around the country, both management and union, explaining the advantages of QWL and how such programs work. These groups were as diverse as a Bell Systems management group and the Airline Flight Attendants Union. The principles involved in QWL can be used effectively in many different settings.

I am particularly encouraged by the interest in QWL shown by many prestigious business schools as I believe fully effective participation by the unionized hourly workforce will require a fundamental change in management style and in the labor-management system. We can continue to function as adversaries at the bargaining table, but it is essential that we not allow philosophical arguments to interfere with the achievement of mutually advantageous goals such as productivity improvement and the improvement of the quality of working life.

These days, when the subject of productivity crops up, the issue of Japanese productivity is quick to follow. This is especially true when discussing the auto industry. The usual arguments are that, in terms of productivity, the U.S. industry lags bar behind its Japanese competition. The facts, however, are quite different.

First, over the last two decades productivity in the American auto industry has increased at an average of 3.4 percent per year. This substantial rate of increase well outpaced the overall increase in productivity recorded by U.S. manufacturing as a whole, and came on top of already-high absolute levels of output per worker.

Second, those who argue that output per worker in the Japanese auto industry far surpasses output per worker in the U.S. industry are wrong. The evidence usually cited in support of this erroneous conclusion is the simple comparison of vehicles per person. There are obvious shortcomings with inferences based on such a comparison, because simplistic calculations of vehicles per head correct neither for mix differences nor for differences in vertical integration. The other "evidence" consists of process-by-process engineering studies which purport to demonstrate the superior productivity of the Japanese auto industry, but actually look at only small, unrepresentative slices of the industry in both the United States and Japan.

UAW economists have compared the relevant productivity series for the United States and Japanese auto industries provided by government agencies, and they are convinced that the U.S. industry maintains a lead over its Japanese competition, although the gap in productivity has narrowed significantly in the last several years. That is easy to explain: operating flat out and regularly adding sizable and predictable increments to capacity, the Japanese industry achieved substantial gains in productivity in the recent past. In contrast, productivity in the U.S. industry declined, as the two years of depression conditions in the industry brought about low capacity utilization, which invariably translates into stagnating or falling labor productivity in the short-term. There has been an additional adverse impact on productivity caused by the auto companies scramble to retool their plants over the last year and a half to produce a far greater proportion of small cars in their output mix.

The Japanese experience is clearly worth studying; we hear glowing reports about the efficient organization of supplies, the cleanliness of the shops, management's effective concern with product quality, etc. Indeed, I have agreed to serve as co-chairman, along with Ford Vice President Peter Pestillo, the company's top Labor Relations person, of a delegation of Ford workers which will visit Japan later this month. We will be observing labor relations and work

practices in the Japanese auto industry: the extent to which employees are involved in decision-making, the operating practices, workers' wages and benefits as well as their job security, workers' involvement in product quality, and other aspects of union and industry relations.

Much has been made of the Japanese harmonious labor relations systems being the basis for their rapidly improving productivity. But at the moment, my general impression is that, from the American workers' perspective, the Japanese "model" is flawed on several counts. Japanese workers work many more hours a year than their counterparts in the industrialized countries; heavy overtime is a rule, virtually no vacation time is taken, and there are fewer holidays. Japanese auto workers have not shared proportionately in the fruits of their remarkable productivity performance. While their industry has been enjoying unprecedented growth, their real wages have increased very little in the last several years, helping to keep costs in Japan relatively low.

These costs, by the way, often appear lower than they really are, because little attention has been given to the costs of lifetime employment, subsidized housing, company-provided health and recreation facilities, etc. On the other hand, these fringe benefits do represent advantages to the Japanese workers which are quite unheard of in America.

We should not forget that the gains obtained by the labor movement sooner or later spill over to the rest of society. For example, working people now, on average, enjoy longer vacations than they did three decades ago. In this and other matters, we—and most of the rest of the developed market economies—should not be looking at reducing our standard of living to Japanese standards: Japanese workers should be moving toward ours. Indeed, this is already happening in some areas; as reported extensively in the press, Japanese unions are increasingly emphasizing reductions in work time.

It would be foolhardy to try grafting parts of one industrial relations system, which fits into a particular historical, economic, and cultural context, onto another country's labor relations. On the other hand, even if that could be done, we might want to keep our own traditions, principles, and goals instead.

Our economic system is such that decisions about what, how, and where to produce are unilaterally made by corporations seeking only private gain. From our perspective, one critical principle is that in this type of system it is absolutely essential for workers to have a truly independent organization to speak on their behalf. Thus, management must be advised that on issues of productivity growth and product quality, as well as others, a continuing participative stance by the Union requires that the companies be prepared to discuss new ways to meet workers' needs and protect workers' interests.

In concluding, I want to note that my testimony has necessarily dealt with just some of the factors of productivity growth. There are others; in particular, the fiscal and monetary actions pursued by the Federal Government play a fundamental role. Let me just add that healthy productivity increases are characteristic of a growing, fully employed economy. That is the model we should be striving for.

Representative REUSS. Thank you. Just to start in on the point you were last raising which is: When there is technical innovation, your union and presumably other unions want to make sure that that does not result in unwarranted unemployment. Although that is an entirely understandable position, what kind of guarantees seem to you in the public interest in this whole field—which is as old as the industrial revolution—when you put in a machine that would seem to put somebody out of a job? Do you expect the same industry, the same company, the same geographical area, or the overall economy to supply the needed replacement job? How do we get at this?

Mr. EPHLIN. In the past we were able to provide the jobs within the same industry because we had a growth industry over the years. With expansion of the market we were able to absorb additional people with new jobs. That is not the case today.

I see no hope that the auto industry will ever reemploy all of the people that are currently on layoff, so in today's situation I think we

have to find new solutions. We have to train people for other industries. For example, to move into aerospace jobs. We have to help people relocate because areas of the country such as Michigan, where we have such very high unemployment at the moment, the prospect for them finding jobs there is pretty dim.

We already have some arrangements worked out with Rockwell International, for example, to hopefully get some training programs going so we can get laid off autoworkers in Michigan trained and relocated to aerospace jobs in the west coast, perhaps. I think that is the type of thing that we will have to do a lot more of.

Representative REUSS. We had an interesting witness before the Joint Economic Committee earlier this week, the State Secretary for Economics of Austria. As you know, Austria has had an amazing record of low unemployment, like 2 percent; and low inflation, like 2 percent; and, as a result, a happy reign of the labor/management peace, so-called, for many years. They contribute much of their success to a kind of social contract they have developed between management, government, and labor whereby there is a degree of planning, so that if one industry gets old or redundant, there is a new one in place to take up some of the slack. People are encouraged by training grants and moving allowances and other things to get in place the new industry. We don't really do that in this country; do we?

Mr. EPHLIN. Unfortunately we don't.

Representative REUSS. What is your general approach to things?

Mr. EPHLIN. We are supportive of that type of an arrangement. We are encouraged by Secretary Goldschmidt's approach to things at the waning days of the last administration, to get some tripartism underway in the industry, and we think there is a crying need for government, management, and the unions to work together toward these ends. We have always been very favorably inclined in that direction.

Representative REUSS. What would be your reaction if, for example, the United States should determine the following tomorrow: That it is a shame and a disgrace that we have no efficient passenger rail service in this country, and that indeed, too many of our freight railroads are very inefficient, and that there is at present almost no American industry that makes rail rolling stock, at least for passenger railroads, whereas the French and the Japanese, to mention two, have very modern, high technology manufacturing industries; and if some arrangement were worked out whereby French and Japanese technology, and perhaps even capital, were put into place here in America, in Detroit, Cleveland, or Belleville, Ill., or Kenosha, Wis., to make rail locomotives and equipment perhaps for an electrified rail system so as to end our dependence on OPEC for oil?

Do you think the auto workers would have an interest in such a program as a possible means of finding well-paid, highly skilled jobs for people, who through no fault of their own, are out on the street?

Mr. EPHLIN. We would be interested for a number of reasons. It would provide jobs for our members. Obviously that would be reason enough. We do have the same skills that would be needed with the laid-off people in the auto industry. In the past we have built railroad cars and subway cars in Philadelphia and other locations. General Motors currently does build locomotives in LeGrange, Ill. So

we have the skills. We think it is appropriate for the Government to, first of all, maintain our railroad system, and also to locate Government contracts in the areas where the jobs are needed.

We think this has been one of our weaknesses, obviously. We have serious dislocations of people, as you say, through no fault of their own, who are unemployed and want to work, but the job are located elsewhere. We have tried to get defense contracts allocated where the jobs are needed and the skills are available, and we think we should do more planning and give more consideration to the use of our human resources in the plants; not only those who are working, but, also using the talents of our people who are not working, as well.

Representative REUSS. Are there not today many UAW unused factories with rail lines actually running into the plant—rail lines which could be used for the manufacture of, let us say, electrified prime mover rail equipment and modern two-way railroad passenger cars?

Mr. EPHLIN. Every automobile plant of any size does have railroad spurs usually running right inside the plants. An auto plant is usually a wide open plant with no petitions or walls. It is easily converted to that type of manufacturing that you mentioned. I think we could do that very readily in many locations.

Representative REUSS. As a matter of fact, isn't there right in my own district in Milwaukee an American Motors plant which used to employ 15,000 members of the UAW with a rail line running right into it which now employs four employees?

Mr. EPHLIN. That is very true, and that type of plant could be used readily and the employee skills would be easily converted to this different type of manufacturing.

Representative REUSS. You spoke in your excellent paper of many labor/management activities which made for more productivity. I am delighted that you, accompanied by management, are going to Japan to see how they do it. Do you see a role for the Government in labor/management productivity cooperation—something which, by definition, surely has to be left mostly to labor and management.

Mr. EPHLIN. Yes, I do, because there is a great need for collecting information about these programs and disseminating information. I think there is a definite role for the Government to play in helping these programs to get launched, not in the General Motors and Ford corporations of the world necessarily, but in the many thousands of smaller companies who do not have the inhouse staffing that is required to work in these areas.

And in the past we have had some efforts nationally that were not given a chance to operate. Congressman Lundine is a great advocate of these programs, and I've had the opportunity to work with him in Jamestown and so forth, and I think that there is definitely a role that Government can play without interfering with labor/management relations by being of assistance in helping these programs get going.

Representative REUSS. I, too, am an admirer of what Congressman, and former mayor, Lundine has done in Jamestown. I have been out there looking at how some of those things work. There is not always enthusiasm by the unions about labor/management productivity teams. I am not talking about specific unions, but it certainly was true. Why

was that so, and do you think the antagonism has been lessened in recent years?

Mr. EPHLIN. In recent years. At one time we were rather lonely in advocating these types of programs because most of our colleagues in the labor movement did not believe in them. The reasons were valid. That they were afraid they were being used by management only to exploit workers. It was not a partnership arrangement, but we have worked in the auto industry with management on these programs because we felt it was good for our people to make a little more satisfying and rewarding, and our membership has enjoyed it, aside from the impact on productivity. In fact, in the beginning our goal in the auto industry was not specifically on productivity, at least in the narrow sense. It was to make work more satisfying so that absenteeism would be reduced, quality of our products would be improved, and this was well before the Japanese competitive factor came into play. And now because of competition, there is more interest on the part of management in quality, which is long overdue.

It has helped these programs to grow, and now more and more unions are finding that they can manage both the collective bargaining adversary role and the small cooperative role at the same time. And we have found no conflict between the two roles. At lease in the auto industry we have been able to manage it. It has paid dividends for our people in many ways, and so we are encouraging the spread of these types of programs in our union and many others today are going into them now.

Representative REUSS. One of the buzz words in the productivity schools is "quality control circles," a phrase that orignated in Japan. When you talked just now about labor/management cooperation, have you been talking about "quality control circles?"

Mr. EPHLIN. We have "quality control circles" as a part of our program. We do not limit the discussions in our meetings to just quality problems, but that obviously is a very high priority item. And we did that in the beginning, again because our workers, any worker, enjoys his job a lot more if he is doing something he can be proud of. No worker likes to produce junk.

Unfortunately for many years in the auto industry workers were not proud of what they were doing, they had no input into how it should be done, and this was one of the causes of alienation in the work force. Today, using "quality control circles," and other similar devices, more people have a chance to make sure that they are building quality products. It makes work a lot more fun, more enjoyable, and people are happier with it.

It is paying off as I point out in the statement, at Ford Motor Co. Now they are publicly acknowledging that there has been a tremendous improvement in the past year. They attribute much of it to those "quality control circles" and so forth.

Representative REUSS. You have spoken of labor/management committees and "quality control circles" at General Motors and Ford. What about Chrysler and American Motors?

Mr. EPHLIN. At Chrysler they have not gone into quality of work by employee involvement as at General Motors and Ford, but there is a joint program on quality, just on quality, that has been in effect

for about a year now, and it has been effective there in improving the quality of the product.

In discussions only recently with the vice president of our union in charge of Chrysler, I have advocated that they expand their role and get into these other areas because of the success we have had, and our people, I think, enjoy it.

At Ford we go around to visit plants now, national committee, of which I am the cochairman, along with the vice president of Ford Motor Co., and when we visit plants, we go out and talk to the workers who are involved in these programs and ask whether they think it is beneficial and helpful and so forth. And the response that we get is sometimes amazing. Workers will pull a piece of paper out of their pocket and show us how work is improved, how much less scrap is generated than under the old system and how happy they are that somebody is finally listening to them. So that it is a movement which is gaining momentum within the industry.

Representative REUSS. Well, thank you very much, Mr. Ephlin, for a very heartening and detailed description of what you are doing. I wish you well. Again, thank you for coming.

Mr. EPHLIN. Thank you, Congressman Reuss.

Representative REUSS. We now stand adjourned.

[Whereupon, at 10:56 a.m., the committee adjourned, subject to the call of the Chair.]

O