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Kent H. Hughes

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## The People Factor in Industrial Policy

*Kent H. Hughes\**

**I** have been hearing a lot of legal talk this morning. As someone who is also an economist, it always makes me a little uneasy. The fact is that it has been particularly rough on us in Washington recently. As you know, economists have been quick to call an end to the current recession in the United States. We have foreseen a robust recovery two or three times now without quite managing to get the economy there. I am the first to confess that Washington has already begun to take its revenge. You may have heard the latest definition of an economist circulating in Washington — someone who is reasonably good at figures, but does not quite have the personality to be a CPA.

The discussion this morning has been an education for me on some of the nuances of anti-trust thinking. S. Linn Williams gave us an excellent overview of the Japanese approach to industrial policy and overall economic strategy. There has not, however, been much discussion about the people factor in industrial policy. The people factor does not usually come out of an industrial targeting question, but it is hard to look around the world and say an approach to human resources has not been central to growth strategies. We have, of course, heard in the 1993 Presidential campaign the winning candidate stress the importance of putting people first. Where do, in fact, people fit in this equation?

What I would like to do is just to talk briefly about how I see the evolution of the economy, the increased pace of competition in the global economy, and the rising importance of a range of technologies. I also want to touch upon how that technology is changing the work place and what, in turn, that implies in terms of need for a new level of commitment to training and education.

The idea of global competition certainly is not new. What is new is that the reality of global competition has hit the thinking of not only American industry but now the bulk of the American people. It was one of the factors in this past campaign as the national public shifted its vision from a forty year struggle with Soviet communism and geopolitics to a sense that there was a new economic competition in the

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\* President, Council on Competitiveness, Washington D.C.

The following text was compiled from the transcript of the remarks made by Mr. Hughes at the Conference.

world. The question of global competition really came center stage in our national thinking in a way it had not been in the past World War II era.

In addition, you see a growth in the importance of technology-driven products. You see an emphasis on market access to spread more sales over a rising Research and Development ("R&D") budget. There is an emphasis on the need to have access, not just to foreign markets, but to foreign technology. There is a sense that if you are not in the right foreign markets, you are not serving the best customers. If you are not serving the best customers, in the end, you are not driving the next generation of the best technology. There is, of course, also the concern that was raised in the last panel about access as a way of preventing predatory behavior.

It is, as is frequently said, an information age. This is shorthand for a series of enabling technologies which are changing the way we think about production and the work force. Now you find it relatively easy to do small-batch production. There is a sense that quality and reliability can be steadily improved. New enabling technologies have begun to change the nature of the production work force. We have seen a whole series of organizational innovations coming out of Japan. There is an emphasis on concurrent engineering as companies attempt to reduce their cycle time and move products from the laboratory to the market more rapidly. You have a world where people may work on software problems on a continuous basis all around the globe. There is a move toward agile manufacturing where a company may have a design but not have all the manufacturing pieces under its own roof. It will look for partners, perhaps even joining with competitors, for a product specific joint venture and take that idea and move it quickly to market.

As the economy has become more global and the information age has raised the importance of technology, there has been the emergence of a new global customer. A customer whose appetite really has changed, at least in part, in response to these new capabilities. The customer today is not only looking for price and traditional definitions of quality, but also for timeliness and increasingly for customization.

There is a third trend. In particular, the United States has moved out of a traditional way of thinking about our economic system. It was, for forty years, easy to think in terms of a two-alternative world. There was totalitarian central planning on the one hand and democratic capitalism on the other. As that era has come to a close, there are more and more elements in the American business community and in the American policy community that are beginning to say the French do it quite differently and the Germans do it differently and, certainly, the Japanese do it differently. In a sense, we are facing a competition of capitalisms. We are not only in individual firm to firm competition but,

in some cases, in a kind of systemic competition as well.

All of this has put a great deal of pressure on the work place. We are beginning to witness quite a shift in the thinking of the leading American manufacturing firms that have faced stiff international competition. They are clearly saying goodbye to the traditional Henry Ford approach to production. I remember, fifteen years ago, going through a General Motors plant outside Baltimore. It was one that had not yet been heavily robotized, let alone gone through the new work place revolution. In walking through I came upon a group of people who had pretty much turned the same bolt or put the same fender on for a number of years. I asked what was the average learning curve in that factory. The answer was two and a half days. That approach is being relegated to the past in the best of the American work places. Instead, they are moving toward what they would call a high performance work team.

Let me give you a specific example which certainly helped clarify the idea in my own thinking. In a recent visit to Motorola, I had a chance to listen to a presentation of a high-performance work team. Instead of just doing the same repetitive task, this was a group of people who were expected to reprogram the numerically controlled machine tools and, in many cases, repair a range of those tools. They had been trained to do statistical quality analysis. They had been given responsibility to look at the whole assembly line in the area in which they worked and, in fact, had decided to redesign it. This team had de facto responsibility for who joined and who left the team. There was already serious discussion about involving the team in capital investment decisions as it affected their particular part of the operation.

As another example, I recently visited a joint venture between Inland Steel and Nippon Steel. This included a state-of-the-art galvanizing facility where, again, there was a high performance work place. The word empowerment is used frequently in discussions. They no longer have a middle manager, for instance, who checks the quality of products. That was now done at the receiving bay. Not by someone who records items on a list, but by someone who is well trained and has the authority to assess and demand quality as supplies come in the door.

The demand for a new kind of work place demands a new kind of worker and there are rising expectations among these better companies for a different kind of training. In many cases, they are providing that training themselves. The demand for greater skills may, in turn, force or create incentives for a different kind of grade K through Twelve education system as well.

The move to the high performance work place has amplified the impact of the decade-old report *America at Risk*. This report asked whether the U.S. education system was really up to world standards.

You hear many jokes about the American education system. One that appeared recently looked at the end of the cold war in terms of the good news/bad news situation. The good news, the television announcer was quick to say, was that Bulgaria had just held its first Democratic election, that Poland had picked its first Democratic president, that the Ukraine was adopting a whole series of Democratic and market-oriented reforms. The troubling news, of course, was that most American schoolchildren had no idea where any of these countries were.

Now, to some extent, this does an injustice to the American education system. If you were to bench mark the system to the past, you would see some improvements in terms of graduation rates, in terms of college attendance rates, and in terms of the number of women and minorities going into technical fields. On the other hand, if you bench mark our system against the rest of the world you face some troubling questions. American students routinely fall at or near the bottom on international tests in math, physics, chemistry and even biology. The same can be true if you bench mark our system in terms of transition from school to work. It is generally accepted that we do the worst job of any of the industrial countries. We are now in the process of looking around the world and seeing what systems work and how we might adapt those systems to American conditions and American traditions.

The systems around the world work quite differently. Germany would be one polar example where there is an extensive apprenticeship-type process of transition from school to work. Non-college bound students, by the time they are fifteen or sixteen, are in an apprenticeship program. They will work with a company for three years and, in most cases, are taken on by that particular company as permanent employees.

In the case of Japan, they have an education system that was modeled after our own after World War II. In the Japanese system, the guidance counselor forms a close relationship with the local industrial base so that the transition from school to work is smooth and effective.

The fourth element that has emerged as a real challenge for us as we have begun to look at the high-performance workplace is how we spend our training dollar, and we do spend a lot; upwards of thirty billion dollars a year in the private sector in formal training and several times that amount in informal, on-the-job training. Most of this formal training is concentrated toward the top of the organization. Very little of it is focused on the front-line worker. If you were to bench mark our efforts against those of Japan, you would find that not only is Japan's spending on training higher, but they spend more at every level. The gap is particularly dramatic with regard to the front-line worker.

We face the need to prepare people for a lifetime of learning. You will hear more and more business and political leaders talk about the fact that people will no longer have a single job for the bulk of their

lives. They may stay with the same company for a period of time, but over a course of years they will be doing a series of different jobs. Nor can we neglect more specialized kinds of training to maintain our technical and technological infrastructure.

There is a fifth aspect of the workplace revolution which is not often talked about, but which is included in the Conference materials. It is the question of investment and our overall approach to capital allocation. The Council started down this path not looking at training, but looking first at the question of the time horizons of the American corporation. This evolved into a broader look at the private sector capital allocations system in the United States compared to that in Germany and Japan. It was a joint venture with the Harvard Business School with Professor Michael Porter as the lead researcher. In Porter's view, when you look at the allocation of capital inside the large American company there was a tendency to under-invest in what you might call the softer kind of investment such as R&D training, supplier networks, and new export positions. In part, this bias traces back to some of the things that Douglas Rosenthal mentioned in his talk, the view that management was as funigible as money. If you could run a bakery, the thinking went, you could run a bomb factory, because all you were doing was looking at a series of financial statements. As Porter looked more deeply into this question, he discovered that just those investments that did not lend themselves so easily to capital budgeting techniques tended to be squeezed even though the softer investments, training, R&D and so forth, were becoming more critical to the firm's ability to continually upgrade and innovate.

As we move into the age of information and global competition, we face a series of challenges as a country. We will be forced to look much more seriously not just at technology or training, but at the synergy of the two.

