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Discussion after the Speech of Thomas Klitgaard

Discussion

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Discussion After the Speech of Thomas Klitgaard

QUESTION, *Ms. Wagner*: In terms of invention, has the geographical center of origin changed over the century?

ANSWER, *Mr. Klitgaard*: I have thought about that question for a long time since going to China in 1979. When I was there for the first time, all the lights were out, there were no cars, and all you saw was a 1939 Dodge. Today they are wearing miniskirts and leather jackets in Shanghai. What is the history of the world's economy? What is the history of invention? Where are we going in the next generation, not my generation, but maybe our children's or their children's generations?

One of the things I did was look at the history of invention. I think it is fairly accurate. What I did was take a look at inventions across time. What are the greatest inventions? In the earliest times we saw the inventions coming from the Near East. In the Classical World, which was from 400 B.C. to 200 A.D., we saw a shift to Rome, to Greece, and to Egypt, people sitting at that crossroad. In the Middle Ages, we see things like the crossbow, the sea rudder, the magnetic compass. We see spectacles, the paddle boat, the mechanical clock, oil paintings, the crank, and the connecting rod. Where are they coming from? They are coming from Italy, essentially from what we would call Western Europe, Germany, China, with a lot from Germany.

In the Renaissance, again moving forward in history, we see inventions coming from Italy and England. We see England starting to appear on the world stage now. England at this time was becoming a major commercial sea power, and it was again a trading country, a huge trading country.

Then in the Industrial Revolution, a large portion of the inventions all of a sudden shift to England. Iron smelting with coke, again, not the tremendous flash of light but things that were innovative, cast steel, chlorine bleach, the steam carriage, the electric battery, the gas light. In the United States, we see Robert Fulton with the steam boat. We see inventions start to shift from England to the United States.

Then in the Post-Industrial Revolution, from 1850 to 1900, we see France on this world scheme of things again with the gyroscope, telephone, and rayon. The United States introduced the phonograph. One thing this tells us is the benefit of being humble because we have seen great inventions coming from many, many countries other than the United States and Canada, with the radio from Italy and the diesel engine from Germany.

Then in the first half of the 20th century, we again see inventions largely in the United States and some in Western Europe. For exam-

ple, there was the airplane, nylon, the cyclotron, radar, and things like that. And that is where the story ends for now.

But the thesis that I have worked on, the thesis over time is that these inventions, if you look across the historical span, have followed commerce and the centers of trade. It centered in Greece and Rome, and then it centered in Europe, and the industrial revolution again centered in the trading nations of England, and more recently in the United States.

Now, the trade is happening in Asia. The trade is shifting out there, and what does that tell us? It has to tell us that there are going to be tremendous innovations coming out of that part of the world. We cannot sit back and say is it not terrible that the Japanese are running us out of business by changing their cars every two years or one year or whatever. That is innovation. That is the competitive world in which we exist. And by the way, if you were to put China on the map, you would see that about 400 B.C., China came on the scene, and it dropped off the world stage for innovation in about 1300 when it had the mechanical printing press, but in the meantime it had other great inventions like paper and so forth.

The bottom line on all of this is what is the context for innovation in Japan? What is the context in the United States? Japan is being driven by necessity. Japan is sitting right at the crossroad of that necessity. It will be forced to innovate if it wants to survive. Are we willing to be forced to innovate? I do not know. I hope we are.

QUESTION, *Mr. Fay*: Are you looking at these inventions in terms of numbers, or are you looking at them purely in terms of the importance of the invention? Give us the last five good Japanese inventions, and then tell us how they dominate the world in terms of the revenues they have produced for Japan, not the market abilities.

ANSWER, *Mr. Klitgaard*: If you are to look at the last five great inventions from Japan, you would not find them ranking up there like the steam engine. You would not find the light bulb. You would not find the others, but what you would find is that the inventions of Japan have come in a different way. They have come in the manufacturing process where they have been truly inventive and innovative. They do not give Nobel prizes for manufacturing better equipment or for being smarter and managing better, but that is where the Japanese inventions are coming along. There are differences between discoveries, inventions, and innovations. Discovery is where someone discovers the effect of the light's rays on photosynthesizing chemicals in plants. That is a discovery. Inventions are a step on the other side, and then innovation is somewhere on the other side of that. It is in the innovative area where the Japanese are leading the world, and you can not put a number on it, but I can show you a headline.

This is a headline from the *Wall Street Journal* of March 7,

[1995] and it says, "Koreans Move to Grab Memory Chip Market From the Japanese," and it describes the reaction of the Japanese to the moves, and the investment by the Koreans in memory chips. You can ask me, what great things have the Koreans invented? They have not invented a doggone thing in the last 200 years, but now they dominate the world shipbuilding business, and they are the world's largest steel manufacturer. They are dominating the chip business, and why are they doing it? Because they are taking ideas and inventions and improving them.

All of us, every day, go to work where we try to do something better. These countries are doing a lot better, and that is the invention, and so if we think in terms of how many patents they have or what they have done, you are stuck.

We heard this morning from the Department of Commerce on how successful our policies were, what they were producing, no real statistical measure. But you do have things like this from the *China Daily* talking about Lee outlining the 1995 development goals for their economy, and this is what the Japanese are looking at because they are the people with whom they are competing. They have the energy and imagination.

How are we going to respond to that? We can not sit back and say, yes, we have more pure research. We have developed more things, but what do we do with it when we get it? That is the question. And when you think of Admiral Thayer Mahan, to come back to my basic talk, who controls the rimland controls the heartland, the heartland is the basic inventions that are out there. Who is controlling the rimland?

