

It's Just Several Years Ago that Innovations Became so Popular



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What are the latest changes to innovation policy in the world?

Unlike several years ago, today, there is a consciousness that innovation is a real basis for economic growth of developing countries and developed countries. There is a consciousness that the role of the state has to be performed in very advanced areas, and very risky areas. And it has been performed by the state traditionally.

This consciousness is very strong in developed countries like the US, Great Britain, France. But countries like China, Russia, Brazil and other countries are latecomers. They have to have this consciousness and have to make a big effort in the field of science, technology, and innovation. And this depends very much on the role of the state. Like in the case of science, it depends on what the state does in relation to the universities, technological institutes and laboratories. Business isn't interested in these things because research and pure science are not profitable. I think the role of the state is quite big in the field of nanotechnology, information technology, biotechnology, space research, etc.

What are the best and the worst examples of innovation policies in the world?

The United States has been very successful in attracting people from all over the world. They had very important policy in relation to immigration of highly qualified people. Like in the past, I will give you two examples. In the end of the WWII, they would recruit German scientists to work in the US, and didn't pay much attention to the ideological issues. They just knew that those people were highly qualified. And after the collapse of the Soviet Union many Russian scientists went to the US. So, they have an environment that attracts highly qualified people, while other countries are less successful.

How successful Brazil is in the sphere of innovation?

We have a very interesting experience because Brazil have important role of the state in many fields such as oil,

mining, transportation, agriculture, etc. We have second largest company in the world in the field of mining, and we have large food exports, which is due to a research in the agriculture field and biotechnology.

Are there any new initiatives of the Brazilian governments in the sphere of innovations?

We are linking in terms of new projects the obligation of the companies. For instance, there is a new project to build a high speed train between Rio and San Paulo which is around six hundred kilometers. One of the requirements for the companies to participate is that they have to transfer technology. They have to build a research center and transfer technology effectively, to develop local production and local markets.

We are going to need a large number of platforms to exploit new oil reserves that have been discovered recently. We are going to have built around 240 large platforms in Brazil, and have to have a certain percentage of Brazilian companies. This forces the transfer of technology, and the companies have to know how to do it. Technology is not in the air, it is embedded in the machines. It is like as if you have a novel in your mind – until you write it down, it exists only for you and doesn't exist for the society.

Also, you need investments, because if you don't have the investments, all the efforts in the sphere of education and training of the engineers are useless. If you don't have investments, those engineers don't have work.

Yet, there is a difference between technological invention and innovation.

Technology is knowledge, while innovation is a knowledge transformed into something in the productive process. Innovation is physical; it is embedded into the production.

What is your general impression of this Forum? What thoughts and ideas expressed during the Forum seem important to you?

I think this is a very interesting exchange of ideas, bringing people from all over the world to present their opinions. I think that's very important.

There were people that emphasized the question of culture environment. If you want to increase production, increase efficiency, you have to have more engineers, not diplomats. For instance, I don't know how to do a machine. You have to value this culturally, in society. If you emphasize the value hockey players and models, this won't take you far. You have to have a certain balance, and stimulate young children to move in certain direction.