Innovation Chain: Searching for a Missing Link of Russian Innovation System

In the eighties there were some discussions about how we can even be better? And I was in that time in charge of environmental control in Southern Sweden. At that time we started to clean up our industry. And by having some connection with industry, I got some knowledge about what could be done. Supported by the governor of Southern Sweden I was then appointed to start the first Science Park in Scandinavia. And if you ask me how to create a national innovation, I will say that it starts with the people.

Now we were heading for the next generation of the industry. And this generation should be based on science and development. That is why we started to establish a kind of Science Parks System. We should extract people from universities and institutes to establish their own companies based on their own research, and support it heavily by public funding.

So, basically, it was the government that decided to invest money in innovations, the government launched the process?

That is what Russian government has decided recently. Recently they have discovered that this is a matter for the government, because the private sector will never invest in early business activity. It is too risky.

In order to foster the innovation system the government should realize that a total, full-scale innovation system is a vital part of a modern infrastructure. If you don’t have this innovation system, then, probably, you are lost, because the competition in the world is so high.

If you invest heavily in research and development, then you get hundreds of institutes and universities. And what will come out? What kind of Russian product can I buy in the future? So far, I don’t own one single Russian product. You cannot buy any Russian products outside Russia except for oil, metal and wood. So I think it is a good idea by the government now to try to change Russian economic structure, to create an economy based on production of commodities, an economy more based on R&D, your own R&D investments. You get tens of thousands of researchers doing what and for whom? And that is an essential thing of a true innovation system – to get all these people motivated and put them in a system where knowledge, and Russian knowledge is worldwide very well known, would have access to a commercial market. This is a true meaning of innovation system.

What are the peculiarities of innovation system in Sweden?

Sweden is a small country. We are only 9 million, but amazingly we have a large number of multinational companies. You know the Volvo, the Ericsson etc.

But Volvo is Chinese now?

Yes, but still, it has been developed here. The Chinese – they are buying technologies, and we are developing technologies. That’s the difference.

So, as a small country, the total economy is based on R&D (Research and Development) oriented companies. This has been going on for fifty-sixty years at least. We have a strong military industry; we are producing pharmacy, automobiles, telephones and entire telephone systems etc.

So, as a country, Sweden has always been based on high technology and, in fact, also on interest of the government to support that such of things. And, of course, this had implications to our universities, our institutes, and we are producing educated people, which is a long term political issue, so to speak.

We started changing the structure of the economy in the eighties, when the old traditional industries started to fall down, and textile industry was more or less exported to other countries. Then the government decided to get some value out of national investment in research and development, especially in connection with our universities, which is to 100% or to a large extent, I would say, paid by government money, but also to a large extent by private money. We are spending about 4.2% of our GNP on research and development, which makes us the leader of world. Most countries, to my knowledge, spend around 2%.

What innovation system starts with?

We start training young people, 4th grade – 5th grade, in creative thinking. Because in the future you need these people to do their work. And when I got to college, we had some national competition on how to create a small company? And on university level we have a national education on entrepreneurship, and students are taught how to create a business plan. And I am a chairman of Venture Cap Sweden which yearly involves thousand of faculty members and students to create a business plan about this sophisticated idea.

What should be done in order to improve the innovation policy? You are saying first thing is education.

The innovation policy starts with encouraging the people. Without people you are lost. You can get all technology in the world, but if you do not have a person behind it – what is going to happen? - Nothing.

It is very important, the thing that you’ve mentioned education system. Could you continue, and say what other step should be taken in order to encourage innovations?

Now you need to know the difference between invention and innovation. Invention is a kind of scientific discovery.
Inventions can be turned into innovations. Therefore, innovation is a commercialized invention. And in a political society this is mixed up, because politicians think that scientific inventions are innovations. But they are not. Inventions have no value. Innovations have value. And in order to turn invention to innovation you need to have an innovation chain which consists of different links. And if a chain has a missing link, how do you think it will work? It will not – forget it.

**What this chain consists of?**
The first link is governmental – national, regional, local – initiatives with a full understanding of what an innovation system consists of. The politician must know. And the second link is the people and universities. Knowing what an innovation system consists of, the government will need to have invention, discovery of commercial value. The government will need to train university and institutional people how to evaluate what they are doing – that is a special course. If you have a special course – a good quality proof of concept. It means that scientists are proving that a scientific value is OK, and that there is, probably, a market for a product, and that there is, probably, a group of people who is bringing this to the market. That is what we call a proof of concept. If the answers to this question is no - technology is bad, no market and there are nobody to take care of this in the future – drop it. If you get – yes, yes, yes – then bring it to the next level of the innovation process.

**So, the first link is government?**
Yes, the government trough the national budget gives the money for everything I am talking about. If not, nobody else is going to do that. Because they are looking for a profit in a short run. And this is a long shot. Business will come on later, when most of the risks are gone and proof of concept is OK. Not before.

**How long will it take business to start investing money in innovations?**
It is a matter of a couple of years. Our experience is that if you are developing a software company, then twelve months. If you are developing hardware – then 3-5 years. If you are talking about pharmacy – you are talking about 7-10 years. There is no quick fix.

**What can you say about innovation systems of the countries you are familiar with?**
Innovation policy is on the highest agenda in most Western countries, like Britain, Denmark, Germany, Finland, Sweden, and, of course the US, also Japan in the East, but they have some problems, and China. China is, more or less, fed up with copying some problems, and China. Japan in the East, but they have Sweden, and, of course the US, also for everything I am talking about. If not, nobody else is going to do that. Because they are looking for a profit in a short run. And this is a long shot. Business will come on later, when most of the risks are gone and proof of concept is OK. Not before.

**What is an amazing project, where people will have everything they need. And money will attract some people. But I think that people are attracted not only by living, but also by culture. Culture, that you have a lot in Moscow, in Russia in general. It is not always a matter of only money. It is a matter of money, and research labs, culture, living, etc. There are a lot of things that should be taken into account if you want to attract people from abroad and get things going. And there should be some kind of relocation activity because if you go as a man and woman attracted by some research activity, you need to find a job for your partner. You need an infrastructure.

I got a lot of information about Skolkovo, I have seen a lot of foreign companies that are interested in this project, but I have not read too much about how do Russian government attract Russian scientists to live and work here? What kind of activity they are going to do in order to create brand new Russian companies?

**What are potential strengths and weaknesses to Skolkovo project?**
I think that it is a very good initiative. It is a shift in Russian policy in terms of economic policy. It is a shift from resource based economy to innovation based one. There are planning to make heavy investments in innovations. But I would like see more examples when Russian scientists are given opportunity to create new Russian products that will enter a global word market.

**In what way are you involved in the Skolkovo project?**
I got an invitation to Skolkovo, and I said I am only interested in helping with the development of Russia’s national innovation system - Russian people, Russian financial sources, and Russian companies. I am not interested in importing foreign companies to Russia. This can be done by anybody. But to encourage Russian people, and Russian academy, Russian financial system to create an internal national system – this is I would like to do. But I have not got an answer yet.