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"We may see a burst of drug discovery in India"

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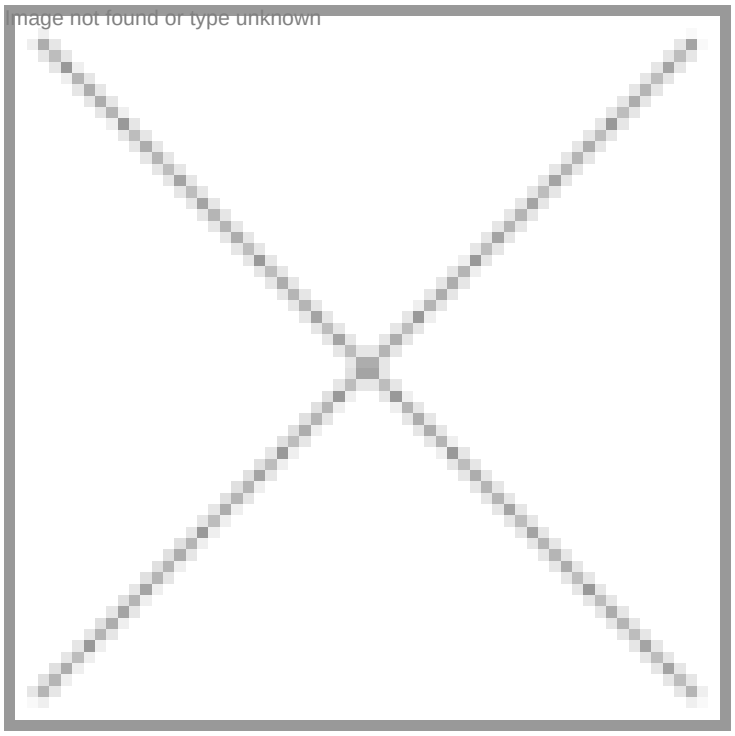

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Lord Sainsbury, Parliamentary Under-Secretary for Science and Innovation, UK

Lord Sainsbury, appointed Parliamentary Under-Secretary of State for Science and Innovation, in July 1998, with responsibility for the Office of Science & Technology, Research Councils and Space Matters, was also the chairman of J Sainsbury PLc and a Director of Giant Food Inc. until July 1998. Lord Sainsbury was in Bangalore in February to understand and learn about the innovations happening in India. In an exclusive interview to BioSpectrum, Lord Sainsbury shares his views and agenda for promotion of hi-tech businesses.

How do you view your visit to India?

It seems there are a lot of exciting things happening generally in India today. And this seems to me, actually, is a very good moment to come. This may be a common perception in India, but from outside, we look at what started in India in 1991 with reforms and when one sees again a period of reforms taking place, it seems to me that an extraordinary burst of entrepreneurial energy has come as the regulations have been removed. As a result some very exciting developments are taking place.

It is also interesting to look at the partnership that is developing between the UK and India. An extraordinary number of things are happening. The UK is now the third biggest inward investor into India. Relatively, it is the second biggest, though

Mauritius is the second largest. I believe Mauritius is a channel for funds. If you look at the exports in the Information and Communications Technology (ICT) arena, nearly 14 percent of the India's exports come to the UK and there are more Indian companies on the London Stock Exchange than on the New York Stock Exchange and NASDAQ. So there are really a lot of exciting things happening in both countries.

Are there any specifics that you have observed during this visit?

My perception is that there is an enormous feeling of confidence and optimism. People are making plans for the future and it sounds very realistic and a huge real development is taking place. I met a couple of companies and I am impressed about how Indian businesses have been developed on an international basis. There is an outward looking approach. This seems to me as a very sophisticated and interesting view of developing international businesses.

I have been a minister for seven-and-a-half years and I have mostly visited the Far East regions like China, South Korea and Malaysia. It is very interesting to look at some of the differences in the way things are happening in China and India. You do not find anything in China where there is that sophisticated view about international strategies. Companies in China are focused more on the Chinese market and are not thinking too much on the globalization aspect.

This is your first visit to India. What are your expectations?

This is my first visit to India mainly because the secretaries of the state have always liked to come to India and I was always sent to China. I thought it is time to change. The thing that struck me is that there is still not enough understanding on either side of what is happening in the other country. When you talk to companies here, they see the UK research happening only at Oxford and Cambridge. But the UK has enormously high standard of science. And it is not just in Oxford and Cambridge, but across the country. We have 40 universities that are doing world-class scientific research. And that stretches right across the country. In London itself, there are about 28 universities doing good life sciences research. But across the country, we have universities like Bristol, Nottingham, and Leicester that are doing good life science research. Leicester was the place where DNA fingerprinting was discovered. You've got Manchester and New Castle in the North. In Scotland, you've got Dundee, Aberdeen, etc.

Further, the old idea of universities not having good links with the industry has changed. This has happened over the last 10 years or so. And you can see it in measurable performance. We have gone from an average of 20 spin-out companies a year to 200 companies now. Further, on every measure whether it is patents, licensing, contract research, or spin-outs, there has been a radical order of magnitude change in what is happening in the universities. But that is not well known abroad. People think it as academic.

How did this happen? How did the government enable this?

It began to happen under the previous government owing to a tight funding policy. That was the time when people started looking out for new sources of income. We introduced a number of schemes to incentivize universities to do knowledge transfer. We now have a scheme called Higher Education Innovation Fund. We give incentives to seed money and to new ventures and also to have technology transfer offices and so on. And that has contributed enormously to the current position. Again if you look at the number of incubators in the universities, it has gone up from 20 to 200. The whole thing has a lot to do with incentives. We have also been very supportive of venture capital. That has also helped the situation.

So you did not need a Bayh-Dole kind of an Act to push it!

I think that was enormously important in the US to change the whole climate. We looked at this, but we found that we already had a position where the intellectual property of research, which was funded by research councils of the government, did reside with the universities. So we did not have to do it from that point of view. I get to hear some comments that the Americans were too prescriptive about forcing universities to get the highest price for that. I think we got all the benefits of the Bayh-Dole Act without some of the negatives. We made clear that research institutes run by the government institutes also own the intellectual property.

India and Japan too are making this shift!

Japan had to change. Their university professors were all civil servants. They could not set up companies because that was considered to give rise to a situation of conflict of interest. They now made the universities independent. These regulations are much more important than what people think.

What are the things that you would like to do with India?

One of the things that we need to do more is to get the message across in India that if you want to have research partnerships or do research in the UK, there is plenty of opportunity across the country. We want to see gain both ways. We are in that sense very open to Indian companies coming and doing research in the UK. And we do not have a problem if the research is done in the UK and jobs are created in India. That is a mild disadvantage of the UK. We think if we are good at doing research, then it makes sense for companies to come and do research in the UK as the UK is one of the best places to do that. In that sense, if you look at the total package that the UK can offer for hi-tech businesses, it is now pretty powerful. We can not only offer research but also finance the businesses. What is enormously important to biotech is the new EU market, which of course is booming at the moment. We also have the best venture capital industry in Europe. So we can offer research, financial services, and if you want to go global, then probably the UK is a good place as any to go into the European market, which after all now, has 500 million consumers. If you put all that together, then it is a very powerful combination.

We in the UK believe that we are going to see developments in the biotech and pharma industry and that is partly why we are very interested in collaborations and we are encouraging players both ways to partner. I think there is enough proof that things are moving very fast in India and we are seeing some exciting development. As I said, we as a matter of policy in the UK want to encourage very strong linkages between our hi-tech industries and the most important hi-tech clusters around the world. That is the way to really stay at the leading edge of not only research but also innovation.

Is the British government looking actively at the Asia-Pacific region?

I think the UK always had an international perspective of the world because of our history. As far as science and technology is concerned, we want to be a key hub in the global knowledge economy where we have very good links with world-class research and innovation in the other hi-tech clusters around the world. Quite a lot of that will be with the US, but we also want to develop that with the other places where we see exciting hi-tech development taking place. And you know places like Bangalore and Beijing. So we want to have links across the world. We are now strengthening these relationships.

The interesting thing is that we look at the quality of the science and benchmark it against other countries. The figures that I always give out is that we have 1 percent of the world's population, and give out 5 percent of the world's science, we produce 8 percent of the world's scientific papers, and in terms of citations, which is a measure of the best quality, we have got 12 percent of world's citations and 13 percent of the most cited top 1 percent. That is a spectacular record, but I have to point out that if we do 5 percent of the world's science, that means 95 percent is done elsewhere. I think in today's world you need to keep in touch with the best science around the world.

What are your impressions of other countries like China and Korea in the Asian region?

I guess what Israelis do is compare China and India because the development is exciting. Both of them are growing very fast. With the reforms you had, India has now moved up to 7-8 percent growth in GDP, which is what China is also growing at. About 10-15 years back, China was growing much faster. But now you see India catch up on this. But the development is taking a different form. In China, we see a huge amount of foreign direct investment and manufacturing. If you look at India, the development is happening much more in the services. India is becoming one of the world's major services economies.

There are reasons for this. India is very strong in the universities sector. When you come to the ICT and biotech sector, India has got very good researchers and people. It is very interesting to the UK because services contribute to more than 70 percent of our economy. So the linkages with India become a natural extension.

What is the quality of the hi-tech research centers in the Asia-pacific region?

China is very interesting. There are not really very hi-tech centers there. There are one or two universities, for example, Tsinghua University, which is a world-class university. They are not at this point of time the centers of hi-tech clusters. When I visited the university last year to see their incubator, it seemed more like the headquarters of multinational companies in a hi-tech park. There are two hi-tech companies there. But these two companies were formed by Tsinghua alumni in the Silicon Valley. In a sense, they are Silicon Valley companies. In China, the growth is not coming from hi-tech businesses like in India. It is coming from foreign companies putting their manufacturing operations into China because of low labor costs. But India is in a much more stronger position because the IT is based on much more competitive advantage which brings from the quality of the people and businesses.

But China is supposed have more students doing higher education courses in the UK and the US and it is luring them to return?

You are certainly seeing scientists come back and you are also seeing Indian scientists come back. And certainly Chinese and Indian science will be strengthened. But that is slightly different from actually those people setting up businesses. There are always examples of hi-tech businesses in China but much less than what is seen here in India. What struck me is that if you are in Bangalore at ITPL, it reminds me of Shenzhen which is on the border of Hong Kong and China. It has the same kind of feel and excitement. But is completely different. It is essentially a cluster of manufacturing companies.

Besides India and China, which are the other major emerging economies?

Korea, Japan and China are the most important countries. It will be very interesting to see what will happen in Japan as it is going through a bad period now. And there are quite a number of significant changes and it will be interesting to see if their hi-tech businesses will revive. I think it is beginning to take place.

South Korea is very buoyant. It will be interesting to see how their biotech does. Australia has some good biotech companies. But the manufacturing is very low. It is all in services or raw materials. They are becoming raw material suppliers to China. They are very good at services and have a very strong biotech industry.

Some of the interesting innovations have mostly come from the US, whereas the UK had the edge till the 19th century. So which are the areas in which the UK's innovations will come to the fore and dominate again?

I don't quite agree with your first statement. There is quite an amount of innovation but we have exploited it. If you look at the record of innovation, it is incredibly high and the breakthroughs in science too have an extraordinary record. You can measure it either in terms of scientific papers or Nobel prizes. What we have not done in the past is often exploit the innovation or science. That is what has changed in the last 10 years. You now see the breakthrough science turning into real products and companies. The most famous example in Britain is that of monoclonal antibody, which is one of the real breakthroughs in modern medicine. That was never patented in England but picked up in the US, but when there was another breakthrough, it led to some world-class companies in the UK developing the second stage of the product. We did not repeat the mistake twice. You won't find any more stories of breakthrough science not being exploited in the UK now.

I personally feel the whole field of neuroscience and brain research will be very interesting to watch. It definitely will be one of the most exciting areas of research and we have to see in what way it will lead to new products. Clearly stem cell and a whole area of genetic medicine will be a huge area and the UK, in both the stem cell research and genetic medicine, is extremely well placed in this science. We are beginning to see the results coming through. We are also thought leaders in grid computing. We are also strong in aerospace, pharmaceuticals, biotech, etc.

Is there an emphasis on nanomaterials and nanotech?

We've actually got a very buoyant nanotech industry and there are close to 500 companies in this sector. We have an interesting story on the nanotech. We were leading till 1985 and doing some exciting work in nanotechnology. We actually had Department of Trade & Industry (DTI) supporting it from 1985 to 1995. At that point just when every other country decided that nanotechnology was an important area, we stopped the commercial support though the research went on. We have realized that we were making a mistake and reinstated that and we now have a micro nano network of companies, which is enormously buoyant. Another area which will be very important and which we are strong is that of composite materials. This is important for aerospace industry, which is expected to grow with composite materials in the next 10 years.

What are your perceptions about the patents scenario in the Asian region?

What I traditionally thought was that if you do not have patents, you will lose a lot as multinational companies as they will not come and sell their drugs. For developing countries there is always a very interesting question, which is true for every country. It is very tempting to think that in the early stage of your development, it makes sense not to have patents. But then you change your mind when your companies are starting to produce IP and the companies go along with the government and say it is not only the foreign companies that are suffering, but also the indigenous companies because IP is not protected. So China has now changed and has perfectly good IP laws and it is only a question of enforcement. But they have changed.

India is very interesting case. I thought you never had IP laws. But you did have IP laws and only stopped product patents in the 1970s. What then happened is exactly what you predict economically, which is everyone switched their efforts to process innovation and the place that the Indian generics industry is in comes from the fact that you get patents from the process innovation. I am not sure if this is right. So may be development of pharmaceuticals has been held up because of that. If there was product patent, we could have seen more development in the drug discovery area. Anyways, the point is now all that has changed. Now we may see a burst of drug discovery in India.

There is a British policy specifically targeted to enhance the economic profile of African countries. Is the British government supporting capacity building?

There is both the policy of capacity building and trying to make drugs available to tackle the worst problems, as Africa is one place, which has most of the problems. Also the agricultural productivity needs to go up. And these are the two major areas where science and technology can play a major role. What we need is a green revolution in Africa.

It is more about trying to solve the basic problems in that region which hamper the economic development rather than trying to push British companies there or direct economic development into particular areas.

N Suresh and Ch. Srinivas Rao