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Oh for a eurocrat who understands science

By Andre Geim

Amid more acute crises, chronic under-investment in science has gone unnoticed, writes Andre Geim

My 10-year-old daughter no longer believes in fairies. Or so I thought until last month, when I asked her whether she still believed in Santa Claus. “Where do you think Christmas presents come from, Daddy?!” she replied.

I then experienced a distinct sense of déjà vu at the European Commission’s first Innovation Convention in December. It was clear that everyone there loves science. José Manuel Barroso said both publicly and privately that he trusts science will in the end solve all our problems, from the current economic crisis to climate change. Science was unanimously referred to as the only reliable medicine for sorting out all our traumas and providing long-term growth. Such deep faith in science was remarkable, and my heart melted. But there was a catch. It was equally clear that policymakers perceive science as something abstract and remote, à la Santa.

The list of speakers at the forum implied that science has little to do with innovation. A couple of practising scientists were lost amid chief executives, entrepreneurs, heads of various councils, university presidents and science popularisers. The most entertaining speaker was Michael O’Leary, chief executive of Ryanair, who shared his personal vision of innovation: coin-operated toilets and taxing overweight passengers. His antics were at least fun, and the one-man-advertising-agency did not hide his intention to promote the airline among potential customers.

Sir Leszek Borysiewicz, Cambridge University vice-chancellor, was the most reassuring about our economic future. He reminded the audience several times that he represented an 800-year-old institution. According to Sir Leszek, innovation will be fine, so long as everyone follows the model of his 800-year-old institution. Everyone applauded his positive attitude at the time of crisis.

Don Tapscott, author of *Wikinomics*, was the advertised star of the show. He explained to the audience that Boeing’s Dreamliner – 20

per cent more fuel efficient than earlier models – is possible due to a new business model of web networking. He did not bother with such details as better engines and aerodynamics, and the use of new composite materials. His message was so well received that, watching the enthusiastic applause given to him by officials, I imagined them issuing a mandate that all Commission staff join Twitter and carry a second Blackberry.

My own talk was a waste. I reminded the audience that without scientific discoveries there could be no new basic technologies and, without these, scope for innovation was limited. Eventually, we would end up in a great stagnation, if we are not there already. I also warned about the emerging technology crisis that stems from chronic underinvestment in basic sciences for the past 30 years. Amid other, more acute, crises this has gone unnoticed, because it takes decades for scientific discoveries to result in consumer products. Previously, science was high up governments' agenda because of external threats but, without them, calls for better funding are doomed to be ignored amid cries for lower taxes.

How far I was off the mark can be judged from the following anecdote. At a dinner table, European officials and science ministers were curious about my line of work. In 2010 I shared the Nobel prize for physics for my work on graphene, an exciting new material with a wide range of potential applications. But graphene was no good as a reference.

So, I explained that I was at the start of a long economic chain leading to more powerful computers and gadgets, which require smaller and faster transistors. To my surprise, the listeners were well informed. I should not worry – one interjected – Moore's law, which says that the number of transistors on a microchip doubles every two years, would take care of everything. I felt snubbed. I had no strength to explain that Moore's law is not a law of nature but an observation.

What is the moral of my journey? Karl Marx, who was a disastrous revolutionary but a good economist, once stated that every nation had the government it deserved. Judging from the Brussels convention, Europe has exactly the state of innovation that we deserve.

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