S&T Policy for Post-Crisis Growth: A European Perspective

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SPEECH

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Excellencies, Ladies and Gentlemen,

All of us here know of the importance of research and innovation for a durable economic recovery and for creating cleaner, greener and smarter jobs to replace those which have been lost.

That is why the recent EU leaders' summit made it clear that innovation will be a central plank of the European Union's economic policy over the next 5 to 10 years. The Heads of State and Government of the 27 Member States of the European Union recently agreed a strategy for growth and innovation called "Europe 2020". The strategy sets out a vision of Europe's social market economy for the 21st century.

Europe 2020 puts forward three mutually reinforcing priorities:

- **Smart growth**: developing an economy based on knowledge and innovation.
- **Sustainable growth**: promoting a more resource efficient, greener and more competitive economy.
- **Inclusive growth**: fostering a high-employment economy delivering social and territorial cohesion.

Quite obviously S&T plays a key role in Europe's post-crisis growth strategy. And like Korea's Low carbon, Green Growth vision, Europe's strategy is built around ambitious structural reforms to "green" growth. In fact, already more than a year ago the EU adopted the **legal framework for its climate and energy package** which will reduce the EU's emissions of Greenhouse Gases by 20% by 2020 and increase the part of renewable energy in Europe's energy consumption to 20% by 2020. The EU will also be moving towards a 20% increase in energy efficiency. This is already agreed by all member states by law, not only a political declaration.

The Europe 2020 strategy outlines a **Flagship Initiative: "Innovation Union"**. The aim of this is to re-focus R&D and innovation policy on the challenges facing our society, such as **climate change, energy and resource efficiency, health and demographic change**.
Every link should be strengthened in the innovation chain, from 'blue sky' research to commercialisation.

At EU level, the European Commission will work:
– To complete the European Research Area, to develop a strategic research agenda focused on challenges such as energy security, transport, climate change and resource efficiency, health and ageing, environmentally-friendly production methods and land management, and to enhance joint programming with Member States and regions;
– To improve framework conditions for business to innovate (i.e. create the single EU Patent and a specialised Patent Court, modernise the framework of copyright and trademarks, improve access of SMEs to Intellectual Property Protection, speed up setting of interoperable standards; improve access to capital and make full use of demand side policies, e.g. through public procurement and smart regulation);
– To launch 'European Innovation Partnerships' between the EU and national levels to speed up the development and deployment of the technologies needed to meet the challenges identified. The first will include: 'building the bio-economy by 2020', 'the key enabling technologies to shape Europe's industrial future' and 'technologies to allow older people to live independently and be active in society'.

The EU currently has a target of investing 3% of GDP in R&D. The target has succeeded in focusing attention on the need for both the public and private sectors to invest in R&D but it focuses on input rather than impact. There is a clear need to improve the conditions for private R&D in the EU and many of the measures proposed in the Europe 2020 strategy will do this. It is also clear that by looking at R&D and innovation together we would get a broader range of expenditure which would be more relevant for business operations and for productivity drivers. The Commission proposes to keep the 3% target while developing an indicator which would reflect R&D and innovation intensity.
The Research and Innovation Strategy that the EU is working on right now will make clear Europe's intention to re-focus research and innovation policies on the Grand Challenges our society faces: climate change, energy security, food security, health, an ageing population. It will also address the short term challenge Europe is currently facing: how to engineer a sustainable economic recovery. I believe these are the exact same challenges that Korea's research and innovation strategy is focusing on. Thus there is a compelling case for cooperation (while we are also obviously competing). I recently learnt about an interesting case that shows the long-term potential for such cooperation in both fundamental and applied research: Liquid crystals (LCD) were invented by a German researcher working for Merck about 100 years ago. But applications for this new technology were only invented recently and Korea is using this technology in its production of flat-screen TV sets and similar appliances. Merck has now production and research facilities in Korea.

The new focus of Europe's Research and science strategy is the focus on innovation. We know that we are confronted in Europe by an "innovation deficit" compared to other more dynamic regions and countries. By "deficit" I do not mean that Europe is particularly poor at turning science and research into new technologies, products and services. I mean that we are not yet good enough at it. The information and communication technology sector is a good case in point, we have excellent schools and fine labs and facilities, and while our scientists publish a lot, European companies did not create Google, Twitter or Facebook, nor the i-Phone or i-Tunes. These are some of the truly game-changing ways in which new technologies have been applied. In other words, we are failing to fully capitalise on our research and science.

And we know the reasons why we are failing. They are wide-ranging, there is an abundance of literature on them. In fact many, many reports and statistics! Some of the reasons why we are not doing as well as we should:
1. Our research quality is not consistently high, against a global benchmark
2. University/Industry interface is poor, hampering innovation and collaboration
3. Low mobility of researchers & engineers within EU, & between industry & academia
4. Financing for early-stage technology companies is scarce
5. Financing for mid-stage technology companies is very scarce!
6. Patent costs are too high in Europe
7. Innovation clusters are weak and dispersed
8. Public procurement does not encourage innovation
9. European market fragmentation and concentration slow technology demand
10. Entrepreneurship is undervalued in many European countries.

I have recently read an OECD report on Innovation in Korea, produced in close collaboration with STEPI, and I recognised that in Korea many similar issues are debated to improve innovation. Again, this should be an incentive for science policy makers to learn from each other on how to improve the framework for innovation.

S&T policies and funding in Europe are mainly provided at national level by the member states governments and the private sector. But since the 1980s the EU has also built up a Europe-wide and international platform for cross-border cooperation in research and development (the so-called Framework Programmes for Research, FP7 2007-13; 53bn €, the biggest publicly funded research programme in the world, about 10% of EU R&D spending). While initially geared to increase Europe's competitiveness it is now also about working globally with other partners on global challenges and sustainable development. Why?

Modern high-technology and frontier research are complex, knowledge and resource intensive, and often spanning across traditional boundaries of science. Public research is nationally and internationally linked and parts of huge knowledge networks.
in multinational companies is often decentralised with project members at different locations within the same country but also very often at locations in different countries. The locations of knowledge, competences and resources steer the knowledge flows. As a consequence, the international cooperation of public research actors and companies plays an increasing role, both for the national competitiveness as well as for new knowledge creation in general.

Internationalisation of S&T can take various forms such as the mobility of researchers, cooperation between partners from different countries, research activities from institutions abroad, informal knowledge exchange, and systematic exploitation and application of foreign knowledge e.g. by being present in other countries for acquisition of know-how and networking. International S&T cooperation is a multi-faceted and multi-purpose policy field, that is mainly driven today by the science community itself but which is increasingly confronted with the need to respond to broader policy objectives. At the same time, international S&T cooperation plays an increasing role in the functioning of the science system itself (with regard to science excellence) as well as with regard to seize the opportunities of S&T for Europe’s competitiveness.

Thus, the understanding of the process of internationalisation of S&T is indispensable for policy making and taking strategic decisions. The emergence of an EU international cooperation strategy can build upon activities at both, national and European Union level –as European countries increasingly have high-level internationalisation strategies in place and national research funding agencies are increasingly coordinating efforts and even cooperating on joint programmes. In parallel, research performing institutions at the national level (and especially Higher Education Institutions) are increasingly including internationalisation as part of their formal strategies.

By working together, Member States and the European Commission can achieve much more, both within the European Union and worldwide. Working together will increase
the attractiveness of Europe’s research and foster better conditions for investment and acquisitions in key markets.

The EU will try to define, to the extent possible, common research policy priorities with third countries such as Korea to draw most benefit from coordinated initiatives and actions. There is great potential for cooperation between the EU and Korea, but there are many obstacles, such as lack of awareness, bureaucratic procedures on both sides, different expectations, but I am sure we can do it.

I believe that there is a lot of scope for the EU, its Member states and Korea to work together on our comparative advantages – but also the weaknesses – in order to drive forward a durable economic recovery and creating a cleaner, greener and smarter economy.