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Why ICT research is even more important in the aftermath of the financial crisis

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Es gilt das gesprochene Wort

IST 2008 Event: *'i's to the future: invention – innovation – impact*

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Ladies and Gentlemen,

It is a great pleasure for me to open the biggest global meeting of the ICT research and innovation constituency, with more than 4000 attendees. The importance of this biennial rendezvous lies not just in its impressive size but in its timing. At this time of economic uncertainty, we must remember that the ICT sector provides the heartbeat of the real economy, of our productivity growth, of our capacity to innovate and create jobs and of our ability to address key societal challenges.

That is why I am grateful to the French presidency, the city of Lyon and the Rhône-Alpes Region for hosting us and for helping us organise this exciting event.

What is on the agenda at ICT 2008? We will unveil details of the EU-funding for the next wave of ICT projects – more than € 2 billion of EU funding over the next 18 months. The conference sessions will address how public policy can promote innovation. The exhibition will feature breakthrough ICT research results from European labs. There will also be many opportunities at ICT 2008 for you to establish research partnerships and business networks.

Responding to the financial crisis

ICT 2008 takes place in a period of global turbulence. Successive waves of financial and economic problems have mobilised policy-makers world-wide to fight against the effects of the crisis.

I believe that there are three essential lessons we should learn from the crisis:

- First, especially in times of financial crisis we must reinforce the investments in our future capacities to innovate and grow. Cuts in public and private R&D spending may be tempting but this could irreversibly damage our economies and the ability to recover.
- Second, solid and sustainable businesses and economies are those that have the capacity to produce *real* high-value goods and services responding to *real* market needs.
- Third, working together at the European level will give us greater strength and stability to ride out the current storm. Recent experience shows that, acting together in the EU, not only helps us to resist shocks but also gives us a scale-efficient basis for achieving ambitious goals that no country is strong enough to tackle by itself.

ICT is the principal motor of growth and competitiveness of industries, the driver of efficiency and effectiveness of our public sector and the means of raising the quality of life of our citizens.

Yet, although the private sector invests € 35 billion per year in ICT research (more than a quarter of all business R&D investments) this adds up to only half as much as corporate US spending on ICT research. Europe's public investment in ICT R&D is also weaker than our competitors! It represents around 40% of the US level. Our track record in attracting venture capital and private equities to R&D in ICT is not very good either.

That is not enough. Because if Europe wants for example, to lead the transition to a low-carbon, knowledge economy we can only do this with a massive and targeted development and take-up of innovative ICT solutions.

Our question therefore should not be "*if*", but "*how*" we can raise our game to make sure that Europe leads in ICT innovation and commercialisation. The question should be what policies are needed to ensure that Europe better harnesses the potential of ICT for our economic prosperity and international competitive standing?

ICT, the policy challenge

Let me point out three main principles for these policies.

To succeed we must:

1. Build on our strengths
2. Seize the opportunities of future technology markets
3. Raise the intensity and scale of ICT research and innovation efforts

1. Build on industry, technology and innovation strengths

First, building on our strengths: in industry, in technology and in innovation. European firms and researchers have technological leadership in several key fields.

- In *telecoms*, European equipment manufacturers are leaders in broadband data networks and mobile devices.
- Europe is also a leading worldwide player in the design, integration and supply of *embedded systems*. Europe has secured 30-35% of the market for ICT systems embedded in products in domains like automotive, industrial automation and avionics.
- Europe is also a leading player in the semiconductor industry. Here European programmes have helped us build and keep these positions as the recent funding decisions by the embedded systems and nano-electronic Joint Technology Initiatives demonstrate.
- Europe also has leaders in *enterprise software*, equipping many of the world's major companies and SMEs. World leading research on software technologies is also taking place in our public labs. We need to build on this and expand further our presence in software and services including in important areas such as web-based services.

Seize opportunities of future markets

The second principle is that we should be well placed to seize the opportunities of future markets. Let me highlight two such markets: The Future Internet and ICT for Energy Efficiency.

We are on the threshold of a new era of network and service infrastructures: the *Internet of the future*. This Future Internet will feature almost unlimited bandwidth capacity, wireless access everywhere, potentially trillions of devices interconnected, integrated security and trust for all parties, and adaptive and personalised services and tools. With its current strengths, Europe should not be content with anything less than leading this development.

Another high potential area is *ICT for energy efficiency*. While this includes the energy use of ICT equipment and services, it goes further. It aims for ICT-enabled improvements in energy efficiency right across the economy, targeting in particular the big energy-consuming areas of heating and lighting in buildings, manufacturing, transport and distribution of electrical power. Here as well, we can take the lead.

Raise the intensity, scale and impact of investments

To reinforce our strengths and seize new opportunities, we need to raise our game. We must continue to mobilise the stakeholders around ambitious goals and roadmaps for European leadership in ICT, as we have done in the Joint Technology Initiatives, for example. Europe can, and should, be in a leading position to shape and benefit from future developments in this sector.

Esko Aho, the former Prime Minister of Finland, has recently reminded us that we must not just focus on keeping up with global ICT R&D spending levels but we must look closely at the efficiency and effectiveness of the ICT innovation eco-system in Europe.

This means to join up all the way through from research to innovation to commercialisation.

Let's look at the first step – research. We launched the ICT programme in Helsinki in 2006 with the largest ever single funding decision taken in the EU Commission. The feedback I get is that the launch of FP7 has been smoother than any previous Framework Programme. More than 500 projects have been selected and negotiated so far for a total funding of more than € 2.2 billion.

This is remarkable. But I am still not happy with the complexity of our procedures, especially for SMEs. We will continue to work on this.

In addition we have launched two Joint Technology Initiatives, ENIAC in nanoelectronics and ARTEMIS in embedded systems accompanied by the Ambient Assisted Living (AAL) initiative. These three big public private partnerships are a backbone of a true single European research area. They achieve a critical mass, one driven by industry, with the end users applying the applications on board. JTIs are an important move towards an EU-wide ICT eco-system.

Five Crucial Steps for ICT research and innovation

The implementation of FP7 and JTIs are important steps, but we need to go further.

First we must increase the intensity of European ICT research in those areas where we can strengthen European leadership. After 2010 the budget increase for ICT in FP7 is planned to reach 20% per year. This should be matched by similar increases in the Member States. This will give us the essential critical mass.

Second we should identify a small number of key areas, such as the Future Internet, where together with industry, policy makers can map out not only ambitious but also concrete research strategies that will assist Europe to lead in terms of innovation and growth.

Third, as the financial crisis shows, Europe works best when it works together. The same is true in research strategy. We must make greater efforts to eliminate the fragmentation of ICT research and innovation effort in Europe. Only by exploiting synergies and going for excellence will we become world beating.

We must pool and coordinate our resources and our investments. We must insist on excellence at every step and we must use our funds wisely to focus our resources on those measures that will make a real difference.

It is NOT normal that Europe has so few world-recognised ICT poles of excellence despite the high quality of our many, but scattered, research teams. It is not normal that the EU has no University in the top 20 Academic Ranking of World Universities in engineering and computer science (although the system by which the ranking is achieved is certainly questionable).

Our problem is fragmentation. Addressing fragmentation is not a luxury. It is a must. The Joint Technology Initiatives and the Joint National Programmes are an answer. Those pioneering actions are pooling together substantial public and private research efforts.

Another good example is GEANT which has given Europe a clear leading role

We can do the same in other fields. We also need to address the demand for the innovations we develop. Our objective is to facilitate the emergence of new public and private markets for ICT-based innovative solutions – thereby facilitating the business growth in ICT. Building better links between research and commercialisation is a challenge.

We have to involve the users, more directly in research to ensure that research outcomes meet societal and business needs. We also need to ensure that users take account of ICT innovations when they seek new solutions. Even if this is a common practice in large companies, it is less so in SMEs and very rare in the public sector.

For SMEs, we should pursue our support to awareness campaigns and to the uptake of ICT innovations. The Competitiveness and Innovation Programme (CIP) which supports pilots for testing new solutions in real settings, is a good step in the right direction.

Concerning the public sector (which represents more than 40% of our GDP) it lacks innovation. I am sure that you agree with me that it is an area where more effort would yield good results.

ICT research and innovation must moreover be put at the service of tackling our long-run challenges in the areas of health, energy and transport. Only then will we be able to innovate faster in vertical markets. Only then will public authorities be able to modernise services responding to challenges such as ageing populations, rising energy costs, or congested transport systems.

Let me give you an example: the development of an electronic identity management infrastructure, as a basis for trustworthy services in e-government and e-commerce. Think of the difference this would make for business efficiency and citizen-friendly services. Think what it would mean to overcome today's fragmentation, closed solutions, lack of interoperability, lack of legal transparency and limited market scale.

Policy actions include the procurement but also standardisation (such as our policy for DVB-H) to allow a technology to hit the market as soon as it is mature. Single Market decisions support these decisions. A good example in the making is the recent Mobile Satellite Services decision, which gives an impulse to DVB-SH, the European mobile TV by satellite version of DVB-H.

Our investments in research and the opening up of the new markets will not be fully exploited unless we can make Europe a much better place to establish high-tech start-ups. Today, few European SMEs break through the ceiling of € 20 million turnover. Why is it that so few European ICT start-ups have come through to become global players?

This is a question that we are going to give special attention to in this conference.

Our aim is to place SMEs at the centre of our actions and to help them intensify their links with investors, academic researchers, innovation professionals and policy makers.

So, we have to take these five steps:

1. Increase the intensity of ICT research,
2. Invest better by prioritising
3. Overcome the deficiencies of scale and fragmentation by coordinating our efforts, and
4. Unlock the innovative potential of our very large single market by unblocking the fragmentation of markets and demand.
5. Make Europe a launch pad for high-tech start-ups

In order to succeed we will need your involvement. We will need to mobilise all ICT stake-holders, from industry and academia and notably the high growth SMEs.

Policy challenges surrounding these five issues will be further developed in a Communication that I will put forward to the Council and Parliament in February 2009. I look forward to your support to make sure that it gets acted upon in the months that follow.

Conclusion

Early next year, I will propose a "strategy for ICT research and innovation in the EU" and I will set ambitious goals for the next decade. Europe is the world's largest economy. It is the largest ICT market worldwide. I think it is about time that we move ahead also in other fields.

Imagine where we could be in five to ten years from now:

- A doubling of private and public investments in ICT R&D
- A doubling in venture capital investments in high growth ICT SMEs, to at least match California
- The emergence of five world class poles of ICT excellence in Europe
- The break through of five new global firms from the EU to global prominence
- Increasing by one third our share of the global ICT supply so as to match the scale of demand.

All these dreams are possible, if we take the concrete steps I have outlined to build scale, to prioritise, to pool our resources and investments in ICT research. And, if we unlock our inherent factors of growth, our large internal market, our large public sector spend, and our dynamic small firms.

At this time of crisis and growing uncertainties, I would like to conclude by reaffirming the Commission's determination to make Europe lead ICT progress. You will see this reflected also in the set of recovery measures that will be proposed by the Commission tomorrow. Political commitments are of course useless unless they are matched by a wide mobilisation of the stakeholders and that is you.

Your views on the steps ahead are therefore essential. This event with more than "8000 eyes" turned to the future is an excellent opportunity to share views and prepare next actions.

Let us all make the best out of it!

Thank you very much