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Herwig Schlögl, Deputy Secretary-General of the OECD on

The importance of ICT for research and science in economies in transition

Good morning,

Minister, Professor Kleiber, State Secretary Freyberg, distinguished participants. It's a great honour for me and my OECD colleagues to participate in this important conference. This Global Research Village Conference is the fourth of a series and it comes as a sequence to three other important conferences, which had related but different focuses. The able introduction by Professor Kleiber very well described the focus of this conference.

This series of conferences was launched by a meeting of OECD Science Ministers held in 1995. That was quite a remarkable year because we know now that it represented a turnaround in terms of internet use. I have learned from your speech, Professor Kleiber, that the invention of the internet happened just five years earlier.

I mention that fact because it helps to show that we are in the midst of a major technological revolution. As an economist, I would even dare say that we are still in the early phase of this revolution, which of course has been mainly driven by new information and communication technology, but also increasingly by biotechnology and other new science areas.

I have read and listened very carefully to Professor Kleiber's introduction, especially when he describes a new knowledge-based civilisation. This is a very good expression, since new

technology will not only affect our business life, our professional life, but all aspects of our life, which justifies the notion of a further evolution in civilisation itself.

Today, I would like to start by saying a few words on the importance of ICT for economic growth. I would then like to talk, but only briefly, about ICT as a science, as a tool for research and development, since this topic has already been touched upon by the excellent introduction by Professor Kleiber.

On the importance of the ICT for economic growth, the OECD last year finalised a major study on the so-called “new economy”. Most people are now familiar with the notion of a “new economy”, but when we started looking into this four years ago, we were not really sure whether the term was appropriate. The OECD has always been reluctant to use it. We would normally prefer to talk about an economy and a society undergoing major technological change. We have never believed nor said that this process would entail the end of the traditional business cycle. We have never thought either that it would solve forever the unemployment problem, the inflation problem. Instead, what we can say with certainty, is that the nineties were a period of economic success for a number of important OECD countries and that this was in a large part a result of technology-driven productivity growth.

That brings me to the main question that we try to answer in our OECD growth study: why did growth rates differ so much in the nineties between countries in our OECD family, which have more or less the same level of technology, the same know-how, the same infra-structure, the same well-educated people. The study has shown clear empirical evidence that growth in the nineties was to a large extent driven by ICT, which means not only the production of ICT goods, but also their use and application i.e. investment in the overall economy.

In that regard, let me give you a couple of figures concerning the United States, Finland and Australia. If you look more specifically at the 5-year period between 1995 and 2000 in these three countries, one third of the overall non-residential investment was in the area of ICT. And I mentioned these three countries because they are among the top performers in terms of output and productivity growth. In the United States the growth cycle lasted from the early nineties until late 2000. More amazingly, output and productivity growth even accelerated in the latter part of the cycle. This is of course most untypical. Text books would usually tell you that at the end of a cycle, productivity growth should slow down. That surprised many people, including the Chairman of the US Federal Reserve Bank, Alan Greenspan, who said in 1996 that there was a degree of “irrational exuberance” in financial markets. In fact, in the years following that statement, productivity growth accelerated. And this of course led to quite a large number of investors, a large number of people in financial markets, to assume that there was a new economic paradigm. Of course, as we know now, this was not the case. The investment boom went bust, with the effects still working their way through our financial system. This has proved that economic cycles are certainly not dead. But this has not invalidated the underlying fact, that ICT has been and will continue to be a driver of growth in the future.

But coming back to the OECD growth study; why did the growth rates of Finland, the United States, Australia, Canada and other advanced economies, like France, Germany, the United Kingdom and Italy differ?

(I leave Japan out of the picture because there are very specific circumstances for their growth performance in the nineties.) The most important difference has to do with government policies. In the United States, the regulatory framework was much more inductive of dynamism in the private sector, especially in science and technology areas, compared to Continental Europe. And one important difference is the capacity to put publicly-funded research and development to commercial use. Private-public partnerships, the transfer of know-how from universities and

research institutes (all paid with tax payers' money), the application and implementation of technology and innovation in the productive process. This was done much more effectively in the United States than in Europe, because the European policy framework was not in place as early as in the United States. Since the early seventies, the United States had already in place the necessary system to allow the use of the results of publicly-funded research and development by private businesses.

We have here today an expert from Germany who may know better than I, but I believe that the German government under the leadership of Science Minister Mrs. Bulmahn, proposed a similar law, adopted by the Bundestag, only 2 years ago. That means that in this particular regulatory area, the gap was almost 30 years. There are other important gaps between the US and Europe in the area of regulatory reform in the telecommunications sector and in other infrastructure sectors.

Another key issue is to have a competitive environment which fosters innovation and competition, bringing prices down. Prices are an important element for universalising access to technology and infrastructure. I have the impression that most governments have now realised the importance of this policy challenge. If the right conditions are put in place, we should expect a certain catch-up, in the sense that the existing gap between continental Europe and the USA should start to close. Europe has the infrastructure, the well educated people. The potential is there.

Concerning education, I would like to mention another OECD study, the PISA study, which found that countries like Germany, Italy and to some extent also France, are not as advanced in their educational system as Finland or other countries, who not by coincidence, also performed better in terms of productivity and output growth. So I think that there are basically two lessons to be learnt. Governments have to put science and technology policy, plus educational policies,

more than in the past, into the centre of their priorities. When I listen to governments of emerging market economies, I sometimes have the feeling that they have a better understanding of these issues and that these areas are higher on the political agenda than in countries like Germany.

Such benchmarking is part of our work at OECD, to have this kind of continuous interchange of policy experiences, based on good analytical work, to learn from each other and to help governments to change policies and to improve them.

So let me say a few words on ICT as a tool for research and development. As the Minister already explained it much better than I can ever hope to do, let me just highlight two or three points, which we always should keep in mind.

As Professor Kleiber illustrated convincingly, information can be very dispersed, requiring structuring and focusing. Computers can help us collect, store and analyse data. ICT in this sense is part of the necessary raw material for scientific research. The second point relates to networking. Internet, which is still in an early phase, allows this networking, not just in an interdisciplinary way, but more than ever, on a global scale. Finally, new technologies help disseminate and diffuse the results of research and development, as long as we can guarantee access globally.

On that last point I would like to add a few thoughts. We hear a lot about the problem that some countries may be left further behind by technological progress. That's what some call the "digital divide" between advanced and developing countries. I would tend to disagree with this concept. Of course there is a problem, but this problem has always existed: developing countries need to catch up in terms of infra-structure and in the educational area. Instead, I would rather believe ICT can help bridge this gap between the advanced and less advanced countries. It can also help

bridge the gap within countries between advanced and less advanced groups and regions. I think there has never been a technological advance with the potential to reach so many people at such low cost. But for that to happen, the right policy conditions need to be put in place. In this sense, ITC is more an opportunity than a danger, and we should be careful not to use easy slogans like “digital divide”.

Finally, let me say a few words to Poland and other countries in the region. First of all, I think we can all be very grateful to be here in a country which for a long time was considered as an emerging economy. But as I said before and as we have learnt already, there are certain areas where Poland has nothing to learn from richer countries, because Poland has always had outstanding mathematicians, statisticians, and outstanding research and development. There remain of course challenges, which need government attention. The infrastructure needs further build-up for instance. Poland and other countries in the region will contribute in a net way to the advancement of the European and global family. More specifically, it can contribute to the research community, to which it is now interconnected better than ever before.

Let me conclude by wishing that the Conference produces interesting discussions. I am sure that a lot of specific issues will be raised and the OECD stands ready to continue this co-operation process. Together with Daniel Malkin and John Dryden, we are in the process of preparing a Ministerial meeting for Science Ministers in 2004 and Minister Kleiber, I hope you will have the opportunity to join us then.

Thank you again for your hospitality.