



Dear Readers,

As the Forum-2011 is approaching we have decided to disseminate the material received and developed for the occasion to all KEN members (at the moment 34) and registered participants in the form of an Extraordinary Issue of KEN Bulletin.

Today, on 2 June, we have 104 registered participants which is exceeding the targeted number - you can [check the list online](#). Let me remind you, dear readers, that we shall be happy to organize meetings with anyone you would like to meet during the Forum in Maribor.

The finalized Programme of the Forum is [accessible](#).

Those who did not decide yet which of the 10 Thematic Tables they would like to join, may find it interesting to look at the Introductory remarks prepared in advance by the respective Moderators, accessible (link to Thematic tables section in the Bulletin).

The Secretariat is very pleased with the 4 preparatory workshops, being organized with KEN partners:

- (1) on 21 April on Corporate Social Responsibility and Business Ethics with Internationalisierung Center in Graz;
- (2) on 28 April on Venture Capital with KOSGEB in Istanbul;
- (3) on 13 May on Implementation of University Reforms with University of Trieste in Gorizia;
- (4) and finally on 20 May on Regional Innovation Policy with Country of Buskerud in City of Drammen, Norway.

Recommendations adopted can be accessed by clicking on the respective city. The Bibliographies and Compendia prepared for each of the workshops are available at [KEN website](#).

During the Forum we shall benefit from the system of electronic voting. You will be asked for your opinion on 9 questions, and those who wish to contemplate on them beforehand, are welcome to [acquaint themselves](#) with them already now.

The KEN Steering Committee has decided at its 4th session on 6 May to present Awards for best practice in 4 key domains to the following:

Korea – for Tertiary Education,



Knowledge Economy Network Bulletin

Extraordinary Issue, June 2011

www.knowledge-economy.net

Secretariat services provided by
Slovenian Business & Research
Association



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Switzerland – for Innovation,

Region of Stuttgart – for Research and Development,

County of Buskerud – for Entrepreneurship.

The Awards will be presented during the dinner of 6 June at Hotel Habakuk, Maribor – the venue of Forum-2011. Next morning the representatives of the Laureats will explain to Forum participants the background and specific policy mixes which have contributed to their excellent achievements.

As in the past, the Forum adopts at the end a Resolution, and you can access (link to Resolution in the Bulletin) already its first draft. You are welcome to send to the Secretariat your comments and sugges-

tions.

As indicated in the Forum programme, on Tuesday afternoon at 15.00 hours the first regular general meeting of the Network will be held. Also people not yet members are invited to join us in order to get better information on the activities of the Network.

Finally, you can [review some of the proposals for the topic of Forum-2012](#). We are interested to receive your reactions.

Thank you in advance, and see you in Maribor!

Boris Cizelj

KEN Chairman



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Articles on Key Topics

Promoting Research and Development: The Government's Role

Speech by Ben S. Bernanke, Chairman at the Conference on "New Building Blocks for Jobs and Economic Growth," Washington, D.C., May 16, 2011

I am pleased to speak at this conference on new building blocks for jobs and economic growth. The conference organizers have gathered an outstanding group of participants and have set an ambitious agenda. The topics you will address today and tomorrow, bearing on innovation and intangible capital, are central to understanding how we can best promote robust economic growth in the long run.

I won't have to spend much time convincing this audience of the importance of long-run economic growth. The Nobel Prize-winning economist Robert E. Lucas, Jr., wrote that once one starts thinking about long-run growth and economic development, "it is hard to think about anything else." Although I don't think I would go quite that far, it is certainly true that relatively small differences in rates of economic growth, maintained over a sustained period, can have enormous implications for material living standards. A growth rate of output per person of 2-1/2 percent per year doubles average living standards in 28 years--about one generation--whereas output per person growing at what seems a modestly slower rate of 1-1/2 percent a year leads to a doubling in average living standards in about 47 years--roughly two generations. Compound interest is powerful! Of course, factors other than aggregate economic growth contribute to changes in living standards for different segments of the population, including shifts in relative wages and in rates of labor market participation. Nonetheless, if output per person increases more rapidly, the prospects for greater and more broad-based prosperity are significantly enhanced.

Over long spans of time, economic growth and the associated improvements in living standards reflect a number of determinants, including increases in

workers' skills, rates of saving and capital accumulation, and institutional factors ranging from the flexibility of markets to the quality of the legal and regulatory frameworks. However, innovation and technological change are undoubtedly central to the growth process; over the past 200 years or so, innovation, technical advances, and investment in capital goods embodying new technologies have transformed economies around the world. In recent decades, as this audience well knows, advances in semiconductor technology have radically changed many aspects of our lives, from communication to health care. Technological developments further in the past, such as electrification or the internal combustion engine, were equally revolutionary, if not more so. In addition, recent research has highlighted the important role played by intangible capital, such as the knowledge embodied in the workforce, business plans and practices, and brand names. This research suggests that technological progress and the accumulation of intangible capital have together accounted for well over half of the increase in output per hour in the United States during the past several decades.

Innovation has not only led to new products and more-efficient production methods, but it has also induced dramatic changes in how businesses are organized and managed, highlighting the connections between new ideas and methods and the organizational structure needed to implement them. For example, in the 19th century, the development of the railroad and telegraph, along with a host of other technologies, were associated with the rise of large businesses with national reach. And, as transportation and communication technologies developed further in the 20th century, multinational corpora-



tions became more feasible and prevalent.

Economic policy affects innovation and long-run economic growth in many ways. A stable macroeconomic environment; sound public finances; and well-functioning financial, labor, and product markets all support innovation, entrepreneurship, and growth, as do effective tax, trade, and regulatory policies. Policies directed at objectives such as the protection of intellectual property rights and the promotion of research and development, or R&D, promote innovation and technological change more directly.

In the remainder of my remarks, I will focus on one important component of innovation policy--namely, government support for R&D. As I have already suggested, the effective commercial application of new ideas involves much more than just pure research. Many other factors are relevant, including the extent of market competition, the intellectual property regime, and the availability of financing for innovative enterprises. That said, the tendency of the market to supply too little of certain types of R&D provides a rationale for government intervention; and no matter how good the policy environment, ultimately, big new ideas are often rooted in well-executed R&D.

The Rationale for a Government Role in Research and Development

Governments in many countries directly support scientific and technical research, for example, through grant-providing agencies (like the National Science Foundation in the United States) or through tax incentives (like the R&D tax credit). In addition, the governments of the United States and many other countries run their own research facilities, including facilities focused on nonmilitary applications such as health. The primary economic rationale for a government role in R&D is that, absent such intervention, the private market would not adequately supply certain types of research. The argument, which applies particularly strongly to basic or fundamental research, is that the full economic value of a scientific advance is unlikely

to accrue to its discoverer, especially if the new knowledge can be replicated or disseminated at low cost. For example, James Watson and Francis Crick received a minute fraction of the economic benefits that have flowed from their discovery of the structure of DNA. If many people are able to exploit, or otherwise benefit from, research done by others, then the total or social return to research may be higher on average than the private return to those who bear the costs and risks of innovation. As a result, market forces will lead to underinvestment in R&D from society's perspective, providing a rationale for government intervention.

One possible policy response to the market underprovision problem would be to substantially strengthen the intellectual property rights regime, for example, by granting the developers of new ideas strong and long-lasting claims to the economic benefits of their discoveries--perhaps by extending and expanding patent rights. This approach has significant drawbacks of its own, however, in that strict limitations on the free use of new ideas would inhibit both further research and the development of valuable commercial applications. Thus, although patent protections and similar rules remain an important part of innovation policy, governments have also turned to direct support of R&D activities.

Of course, the rationale for government support of R&D would be weakened if governments had consistently performed poorly in this sphere. Certainly, there have been disappointments; for example, the surge in federal investment in energy technology research in the 1970s, a response to the energy crisis of that decade, achieved less than its initiators hoped. In the United States, however, we have seen many examples--in some cases extending back to the late 19th and early 20th centuries--of federal research initiatives and government support enabling the emergence of new technologies in areas that include agriculture, chemicals, health care, and information technology. A case that has been particularly well documented and closely studied is the development of hybrid seed corn in the United



States during the first half of the 20th century. Two other examples of innovations that received critical federal support are gene splicing--federal R&D underwrote the techniques that opened up the field of genetic engineering--and the lithium-ion battery, which was developed by federally sponsored materials research in the 1980s. And recent research on the government's so-called war on cancer, initiated by President Nixon in 1971, finds that the effort has produced a very high social rate of return, notwithstanding its failure to achieve its original, ambitious goal of eradicating the disease.

What about the present? Is government support of R&D today at the "right" level? This question is not easily answered; it involves not only difficult technical assessments, but also a number of value judgments about public priorities. As background, however, a consideration of recent trends in expenditures on R&D in the United States and the rest of the world should be instructive. In the United States, total R&D spending (both public and private) has been relatively stable over the past three decades, at roughly 2-1/2 percent of gross domestic product (GDP). However, this apparent stability masks some important underlying trends. First, since the 1970s, R&D spending by the federal government has trended down as a share of GDP, while the share of R&D done by the private sector has correspondingly increased. Second, the share of R&D spending targeted to basic research, as opposed to more applied R&D activities, has also been declining. These two trends--the declines in the share of basic research and in the federal share of R&D spending--are related, as government R&D spending tends to be more heavily weighted toward basic research and science. The declining emphasis on basic research is somewhat concerning because fundamental research is ultimately the source of most innovation, albeit often with long lags. Indeed, some economists have argued that, because of the potentially high social return to basic research, expanded government support for R&D could, over time, significantly boost economic growth. That said, in a time of fiscal stringency, the

Congress and the Administration will clearly need to carefully weigh competing priorities in their budgetary decisions.

Another argument sometimes made for expanding government support for R&D is the need to keep pace with technological advances in other countries. R&D has become increasingly international, thanks to improved communication and dissemination of research results, the spread of scientific and engineering talent around the world, and the transfer of technologies through trade, foreign direct investment, and the activities of multinational corporations. To be sure, R&D spending remains concentrated in the most-developed countries, with the United States still the leader in overall R&D spending. However, in recent years, spending on R&D has increased sharply in some emerging market economies, most notably in China and India. In particular, spending for R&D by China has increased rapidly in absolute terms, although recent estimates still show its R&D spending to be smaller relative to GDP than in the United States. Reflecting the increased research activity in emerging market economies, the share of world R&D expenditures by member nations of the Organisation for Economic Co-Operation and Development, which mostly comprises advanced economies, has fallen relative to non-member nations, which tend to be less developed. A similar trend is evident, by the way, with respect to science and engineering workforces.

How should policymakers think about the increasing globalization of R&D spending? On the one hand, the diffusion of scientific and technological research throughout the world potentially benefits everyone by increasing the pace of innovation globally. For example, the development of the polio vaccine in the United States in the 1950s provided enormous benefits to people globally, not just Americans. Moreover, in a globalized economy, product and process innovations in one country can lead to employment opportunities and improved goods and services around the world.



On the other hand, in some circumstances, the location of R&D activity can matter. For example, technological prowess may help a country reap the financial and employment benefits of leadership in a strategic industry. A cutting-edge scientific or technological center can create a variety of spillovers that promote innovation, quality, skills acquisition, and productivity in industries located nearby; such spillovers are the reason that high-tech firms often locate in clusters or near leading universities. To the extent that countries gain from leadership in technologically vibrant industries or from local spillovers arising from inventive activity, the case for government support of R&D within a given country is stronger.

How Should Governments Provide Support for Research and Development?

The economic arguments for government support of innovation generally imply that governments should focus particularly on fostering basic, or foundational, research. The most applied and commercially relevant research is likely to be done in any case by the private sector, as private firms have strong incentives to determine what the market demands and to meet those needs.

If the government decides to foster R&D, what policy instruments should it use? A number of potential tools exist, including direct funding of government research facilities, grants to university or private-sector researchers, contracts for specific projects, and tax incentives. Moreover, within each of these categories, many choices must be made about how to structure specific programs. Unfortunately, economists know less about how best to channel public support for research and development than we would like; it is good news, therefore, that considerable new work is being done on this topic, including recent initiatives on science policy by the National Science Foundation.

Certainly, the characteristics of the research to be supported are important for the choice of the policy tool. Direct government support or conduct of the research may make the most sense if the

project is highly focused and large-scale, possibly involving the need for coordination of the work of many researchers and subject to relatively tight time frames. Examples of large-scale, government-funded research include the space program and the construction and operation of “atom-smashing” facilities for experiments in high-energy physics. Outside of such cases, which often are linked to national defense, a more decentralized model that relies on the ideas and initiative of individual researchers or small research groups may be most effective. Grants to, or contracts with, researchers are the typical vehicle for such an approach.

Of course, the success of decentralized models for government support depends on the quality of execution. Some critics believe that funding agencies have been too cautious, focusing on a limited number of low-risk projects and targeting funding to more-established scientists at the expense of researchers who are less established or less conventional in their approaches. Supporting multiple approaches to a given problem at the same time increases the chance of finding a solution; it also increases opportunities for cooperation or constructive competition. The challenge to policymakers is to encourage experimentation and a greater diversity of approaches while simultaneously ensuring that an effective peer-review process is in place to guide funding toward high-quality science.

However it is channeled, government support for innovation and R&D will be more effective if it is thought of as a long-run investment. Gestation lags from basic research to commercial application to the ultimate economic benefits can be very long. The Internet revolution of the 1990s was based on scientific investments made in the 1970s and 1980s. And today’s widespread commercialization of biotechnology was based, in part, on key research findings developed in the 1950s. Thus, governments that choose to provide support for R&D are likely to get better results if that support is stable, avoiding a pattern of feast or famine.

Government support for R&D presumes sufficient



national capacity to engage in effective research at the desired scale. That capacity, in turn, depends importantly on the supply of qualified scientists, engineers, and other technical workers. Although the system of higher education in the United States remains among the finest in the world, numerous concerns have been raised about this country's ability to ensure adequate supplies of highly skilled workers. For example, some observers have suggested that bottlenecks in the system limit the number of students receiving undergraduate degrees in science and engineering: Surveys of student intentions in the United States consistently show that the number of students who seek to major in science and engineering exceeds the number accommodated by a wide margin, and waitlists to enroll in technical courses have trended up relative to those in other fields, as has the time required to graduate with a science and engineering degree. Moreover, although the relative wages of science and engineering graduates have increased significantly over the past few decades, the share of undergraduate degrees awarded in science and engineering has been roughly stable. At the same time, critics of K-12 education in the United States have long argued that not enough is being done to encourage and support student interest in science and mathematics. Taken together, these trends suggest that more could be done to increase the number of U.S. students entering scientific and engineering professions.

At least when viewed from the perspective of a single nation, immigration is another path for increasing the supply of highly skilled scientists and researchers. The technological leadership of the United States was and continues to be built in substantial part on the contributions of foreign-born scientists and engineers, both permanent immigrants and those staying in the country only for a time. And, contrary to the notion that highly

trained and talented immigrants displace native-born workers in the labor market, scientists and other highly trained professionals who come to the United States tend to enhance the productivity and employment opportunities of those already here, reflecting gains from interaction and cooperation and from the development of critical masses of researchers in technical areas. More generally, technological progress and innovation around the world would be enhanced by lowering national barriers to international scientific cooperation and collaboration.

Conclusion

In the abstract, economists have identified some persuasive justifications for government policies to promote R&D activities, especially those related to basic research. In practice, we know less than we would like about which policies work best. A reasonable strategy for now may be to continue to use a mix of policies to support R&D while taking pains to encourage diverse and even competing approaches by the scientists and engineers receiving support.

We should also keep in mind that funding R&D activity is only part of what the government can do to foster innovation. As I noted, ensuring a sufficient supply of individuals with science and engineering skills is important for promoting innovation, and this need raises questions about education policy as well as immigration policy. Other key policy issues include the definition and enforcement of intellectual property rights and the setting of technical standards. Finally, as someone who spends a lot of time monitoring the economy, let me put in a plug for more work on finding better ways to measure innovation, R&D activity, and intangible capital. We will be more likely to promote innovative activity if we are able to measure it more effectively and document its role in economic growth.



Inclusive Innovation: Getting More from Less for More

Written by R.A. Mashelkar, Bhatnagar Fellow, National Chemical Laboratory

Why Inclusive Innovation

Innovation today is widely recognized as a major source of competitiveness and economic growth for all countries – advanced and emerging economies alike. Its significant role in creating jobs, generating incomes and improving living standards is now well-understood. However, instead of viewing innovation strictly in terms of competitiveness and as a strategy to support high value-added employment, it should also be conceived as a means of promoting 'inclusive growth'. Inclusive growth embraces the have nots and brings them into the mainstream of the economic system as customers, employees, distributors and intermediaries. Inclusive growth will lead to resource poor people gaining access to essential necessities of life at affordable prices. Inclusive growth can be accelerated through inclusive innovation.

For achieving 'truly' inclusive innovation, we will have to cater to the needs of 4 billion people, whose income levels are less than \$ 2 per day. For this, we need to make some paradigm shifts. For instance, getting more (performance) by using less (resources) for more (profit) is a well known strategy of industrial enterprises. However, when we achieve more (performance) by using less (resources) for more (people) then alone we can create 'inclusive growth'. Let us call this "more from less for more people" paradigm as an MLM paradigm.

The Challenge of MLM

The objective of MLM type of innovation would not be just to produce low performance, cheap knock-off versions of rich country technologies so that they can be marketed to poor people. Rather, the objective is to harness sophisticated science and technology know-how to invent, design, produce and distribute high performance technologies at prices that can be afforded by majority of people.

If the MLM paradigm is made into a reality then the poor can potentially have the same 'functional and emotional experience' as the rich have for a fraction of the price. For example, a two wheeler scooter owner in India today can afford to buy world's cheapest car, Tata Nano, costing \$ 2,000. And this car is a proper car. It is comfortable, fuel efficient and environmental friendly. So this is an example of an innovation that is truly 'inclusive'.

The challenge of serving these billions of people lies in moving from 'low cost' to 'ultra low cost' and from 'incremental innovation' to 'disruptive innovation', so that not just 'affordable' but 'extremely affordable' products and services can be created for these billions.

Let us illustrate this challenge further. To how many of the following questions can we answer in 'yes'?

- Can we make a Hepatitis-B vaccine priced at US\$20 per dose available at a price that is 40 times less?
- Can we make an artificial foot priced at US\$10,000 available at a price that is 300 times less?
- Can we make a high quality cataract eye surgery available, not at US\$3,000, but at a price that is 100 times less?
- Can we make a mobile phone call at not 8 cents per minute but at a price that is 8 times lower.

Incredible as it may sound, all such MLM targets have been met in India. Let us explain as to how such impossible looking targets have been met by just citing a few representative examples.

MLM innovations

The MLM challenge involves inclusive innovation centered around creating extremely affordable products as well as offering extremely affordable services through business process innovations,



workflow innovations and so on. We must remember that innovation is all about doing things differently to make a big difference.

And here are some brilliant examples of such MLM innovations that have been successful in India.

MLM through Product Innovation: Tata Nano

The idea of Tata Nano was conceptualized by Ratan Tata himself. He gave a challenge of designing and developing a very low cost four wheeler to the young engineers in Tata Motors. The tight price-performance envelope was such that the price of \$ 2,000 was emphasized with all departments, namely design, development, production, materials, logistics and sales.

The Tata Nano team drew ideas from different sources, from helicopters to two wheelers. For example, the mechanism of helicopter seats was used to get a solution for the design of Tata Nano seats. Window winding mechanism was inspired by helicopter windows. The dashboard, fuel lines and lamps drew inspiration from two wheelers.

Tata Nano has contemporary styling, spacious interiors and high standards of performance. Tata Nano has a rear mounted 624 cc, 35 bhp engine, a maximum speed of 125 km/hr with a fuel consumption of 23 km/litre. It meets the Euro IV emission standards.

The low cost assembly line of Tata Nano, its innovative partnership with component manufacturing and the innovative business model for automobile dealerships have set new benchmarks for the global automobile industry.

MLM through Product Innovation: Chhotukook, a 'Nano' Refrigerator

Tata Nano was produced by considering the constraints on costs that people with lean resources have. But India is full of other constraints too. India hosts the world's largest population deprived of electricity. Some 92% of this population lives in rural India, 380 million people or 71.7 million house-

holds. The quality and quantity of power these people have access to, is very poor. The power situation in rural India cannot be fixed overnight. On the other hand, Effective refrigeration in rural areas can help people extend their access to not only food, but also essential drugs.

Godrej and Boyce took up this challenge. They launched ChotuKool, world's cheapest refrigerator with a \$69 price tag in the spirit of Nano. The portable, top-opening unit weighs only 7.8 kg, uses high-end insulation to stay cool for hours without power and consumes half the energy used by regular refrigerators. This product had to cross several technological and social barriers.

To achieve its efficiency, the ChotuKool does not use a compressor; instead it runs on a cooling chip and a fan similar to that used in computers. Like computers, it can run on batteries. In a true MLM spirit, it has only 20 parts as opposed to more than 200 parts in a normal refrigerator.

The ChotuKool was co-designed with village women to ensure its acceptability. It is distributed by members of a micro-finance group. There are other business process innovations also coupled with product innovation. For instance, the villagers will act as marketers and will earn a commission of approximately US\$3 per fridge sold. This fridge is targeted at households, who earn approximately US\$5 a day, of whom there are almost 100 million in India. A true MLM story!

MLM through Product Innovation : A 'Nano' Laptop

Tata Nano and Chhotukool are examples of MLM innovations by private sector. What about the public sector? Well, there are many. Let us just cite the latest excitement.

On July 22, 2010, India unveiled a \$30 laptop which is designed specifically for students. The laptop, designed in the spirit of Nano, is promised to be available for the students in 2011. The device has been designed by scientists from India's premier science



and technology institutions like Indian Institute of Technology and Indian Institute of Science⁶.

This Nano Laptop will be no bigger than a conventional laptop. It is a single unit system with a touch screen and a built in key board along with a 2 GB RAM memory, WiFi connectivity, USB port and powered by a 2-watt system to suit poor power supply areas. The low cost laptops are proposed to be distributed in millions in schools by the Government of India.

MLM through Business Process Innovation : Indian Telecom

The telecom industry revolution in India, specifically in wireless communication, is another example of MLM, with brilliant business process innovation. This industry now adds around 20 million subscribers per month. The cost of a minute of a cell phone time is less than one cent, the lowest in the world. A mobile handset is available for as little as US\$20. The cost of one SMS text message has dropped down to as little as two by thousandth of a dollar!

This journey began with an audacious dream of a visionary leader Dhirubhai Ambani, who challenged his team to innovate and bring down the cost of a phone call to that of a post card in India.

The Reliance team said that it did not understand telecom but it did understand refining. So the team used an innovative “refining model of telecom.” Rather than following the traditional model of purchasing telecom equipment on a cost per subscriber basis, which meant paying a massive upfront cost per subscriber fee to vendors, Reliance paid them for the volume of traffic of voice that flowed through the equipment per unit time.

Reliance also pioneered some groundbreaking marketing strategies including free text messages, free phones, free incoming calls, and more. With Reliance’ entry, outgoing call rates dropped exponentially thus creating a revolution in the Indian telecom industry. Reliance’s deal with equipment suppliers set the benchmark for the lowest equip-

ment prices in the world. And this initial movement of providing value for money plummeted the prices and costs to the ultra-low levels that we have achieved today by leading companies like Airtel.

Indeed, the remarkable success of Airtel is a testimony to the idea that it is not the product innovation alone but the business model innovation that counts³. At a superficial level, Airtel looks every bit like another telecom firm. But Airtel broke the telecom paradigm. It started with two major conceptual breakthroughs. It shifted the focus from Average Revenue Per User (ARPU) to contribution per minute and from vertical integration to outsourcing. Then it was creative in operationalizing these concepts in a systematic fashion. Its goal was to seek the best partners in the world such as IBM, LM Ericsson, and Nokia. With each vendor, it negotiated agreements that was a “win-win” and focused on growth. Further, capital expenditures (fixed costs) were converted into operating expenses (variable costs). It built rapidly an ecosystem of value added application developers and a large distribution channel piggy backing on existing small Indian retailers. It also built a system of contract governance that provided for flexibility, learning and change. Airtel has become one of the most benchmarked firms in the telecom industry and many telecom firms are now trying to imitate the Airtel innovation.

MLM through Work Flow Innovation: Aravind Eye Care

Aravind Eye Care system was started by G. Venkataswamy. His mission was to eliminate ‘needless blindness’. The cost of a typical cataract surgery in the U.S. is around \$3,000. Aravind has managed to bring down the cost to \$30, performing around 300,000 surgeries per year. Aravind Eye Care has developed a cost-effective revenue model so that thousands of blind poor can be operated on for free or nearly free. Revenues were generated from a small percentage of paying patients.

How did they achieve this MLM feat? Instead of increasing the number of surgeons Aravind decided to



find ways to increase a surgeon's productivity. And it perfected an assembly line technique of surgery that increased this productivity by a factor of ten. The inspiration for this MLM innovation was drawn from McDonalds - delivery of the same quality of products in diverse regions through highly trained staff by an assembly line operation. The high cost of imported ophthalmic supplies was countered by setting up one's own manufacturing unit. The costs of lenses were reduced from \$100 to \$2!

Manpower costs were dramatically reduced through innovative means. Aravind hired paramedical staff with lower educational qualifications than those in other institutes, hired them from rural and backward areas and yet gave them far more responsibility than the other institutions did. And the paramedical staff delivered.

But can such cheap eye surgery deliver quality results? A comparison of the data on some post-surgery parameters shows that Aravind Eye Care outperforms Royal College of Ophthalmic Surgeries in UK. So, Aravind Eye Care innovation is not about getting 'less from less'. It is about getting 'more from less'. And that too for 'more and more people'.

MLM by Involving Masses

Since MLM innovations are for masses, an interesting question is this. Can we get the masses involved in doing the MLM innovation? The answer is in the affirmative.

India's National Innovation Foundation (NIF) set up in the year 2000, recognized that India just does not have one billion mouths to feed, it has one billion minds that can think! NIF started scouting, promoting and rewarding the grassroots innovations and innovators. Thousands of such innovations have been documented and encouraged.

Let us cite just one typical example. NIF identified an innovation on a rural washing machine, that can work without electricity because it is pedal driven. A Kerala school girl, Remya, developed it because

she had this incredible combination of constraints coupled with her aspirations. Her father was down with cancer. Her mother was perennially ill. She had to change three buses to go to the school. She had to come home, wash her clothes and do her studies. She created this washing machine, so that she could read, while the clothes were being washed, while she pedaled away.

Interestingly, such MLM innovations meant for constrained conditions are taking place not only in a village in Kerala, but also in an institution like MIT in USA. MIT D-Lab too has created a portable pedal powered washing machine. With an estimated prototype price of US\$127 MIT hopes that this innovation promises to vastly increase the productivity of wash women, and bring some of the benefits of an appliance often taken for granted elsewhere in the world at low-cost and without reliance on electricity. Interestingly, both Remya and the MIT team did the same MLM innovation, but their drivers were fundamentally different.

Does MLM Make Business Sense?

MLM products and services will no longer be motivated by the concerns on fulfilling the obligation of corporate social responsibility by the enterprises. To the contrary, MLM products and services are emerging as perhaps the biggest business opportunity of the coming decade.

Most of the growth in consumer spending is expected to come from people in emerging markets, who have a much lower spending capacity than traditional middle-class consumers in developed countries. The fastest-growing consumer class in the emerging markets of Asia consists of people spending US\$2 to US\$4 a day, according to a recent report from the Asian Development Bank. This market can be served only by MLM products and services.

Indian companies are particularly well positioned to take advantage of this opportunity. They have direct access to the world's second-largest emerging market, one in which a huge low-income group



is poised to enter the middle class. By 2030, the share of the total population in the emerging middle class, those earning \$4 to \$20 a day, will triple, to 49 percent, or 725 million people – exceeding for the first time the number of those earning under \$4 a day. An explosion of consumer demand, spread across a range of low- and middle-income segments, will allow Indian businesses to experiment with different scaling strategies, making the cost of pursuing MLM business models much lower for firms in India than for many competitors in other emerging markets.

MLM Leadership

If MLM business innovation models have to thrive, and in turn drive accelerated inclusive growth what kind of leadership qualities will be required? Prahalad and Mashelkar³ have identified at least five.

First, MLM CEOs must develop a deep commitment to inclusive growth, which will force them to think of unserved customers, be they rural poor, who don't have access to telephones or urban poor, who don't get emergency medical services. Companies often start by asking: "Given our cost structure, which segments can we serve?" They should ask: "Given that we need to cater to the unserved, what should our cost structure be?"

Second, MLM CEOs must have clear vision with a human dimension: for example, helping poor Indians travel safely and affordably with their families; using connectivity to improve people's work and lives; and enabling patients to buy cheap medicines.

Third, MLM CEOs must establish ambitious goals and clear time frames for achieving them. Companies should ask: "What is our on-the-moon project?" Or, as they do in India's boardrooms: "What

is our Nano project?"

Fourth, MLM leaders must force project teams to work within self-imposed boundaries that stem from a deep understanding of consumers. That will result in a novel, outside-in view of innovation. The language inside their organizations should be about consumers as people, suppliers as partners, and employees as innovators.

And finally, MLM CEO's must continuously ask "What if we change the way we operate to reduce costs and focus on return on capital employed, not just on operating margins? If we reduce prices enough and make our products available to the poor, won't there be explosive growth as they quickly find uses for and buy our offerings?"

Finally

It must be emphasized that inclusive innovation through the MLM strategy forces us to measure opportunity by the ends of innovation—what people actually get to enjoy—as opposed to just an increase in their means. In important ways, this rationale invokes a return to the traditional case for innovation—its ability to produce break-through improvements in the quality of life—alongside the usual objective of competitiveness.

We have shown as to how the combination of constraints and aspiration can provide an explosive trigger for extreme and disruptive innovation. It is clear that the MLM way of innovation, anchored on the solid foundation of affordability and sustainability, will help us design a sustainable future for the mankind. Finally, 'doing well' while 'doing good' will be the mantra that the corporate world can benefit from, since then it will be able to provide not only 'value for money' but 'value for many'.



Draft KEN-2011 Resolution

We kindly invite you to send your comments and suggestions concerning the KEN-2011 Resolution, which will be submitted and further amended at the Forum in Maribor on 6 – 7 June 2011, to sinkovec@knowledge-economy.net

1. Awareness of the importance of knowledge economy in the domains of tertiary education, R&D, innovation, and entrepreneurship is growing, but only some countries and regions have achieved important results. In spite of declarations, most countries and regions fail to confirm their commitment through effective action and necessary reforms, which has created during the times of crisis, rather devastating developments (rising unemployment, weak economic growth, high public debt, reduced public investment into education, research and innovation). Similar observations can be made about most of regions: the development disparities among the world regions is not diminishing since needed environment for knowledge economy has by and large not been encouraged enough.
2. Following the evolution of knowledge economy debate, the creation of KEN (successor of EREF) as a global network, was a natural and logical step in enabling existing and future members to better mobilize their resources for both internal restructuring and for closer international collaboration. Participants of KEN Forum-2011 support this development and encourage members and secretariat of the Network to engage in successful implementation of its mission. The contribution of KEN will be particularly appreciated in facilitating a broad debate and productive interaction among Triple Helix partners in direction of reducing implementation deficit at all levels.
3. Scope of changes required to achieve smart, inclusive and sustainable development demand a new paradigm and an important shift in our mindsets. This in turn expects opinion makers and politicians to adopt a more open attitude towards uncertainties of inevitable structural and institutional transformations. In contemporary, highly complex and globalised environment, policies need to be developed on scientific analysis and cannot ignore projections and forecasts. In modern democracies there should be less political voluntarism. More involvement of civil society, including experts and professional public will contribute to better quality of legislation and decision-making in general.
4. Intensified global competition makes organizations successful only when they reach superior quality compared to their competitors, and this leads to their worldwide excellence. Internationalization requires that organizations permanently use peer review and benchmarking through objective criteria and indicators.
5. CSR is not just a moral category but an imperative for sustainable development and economically viable corporate governance - not only in the long run, but even in short-term business perspective. Besides responsible performance of managers, it is important that regulatory framework and policy instruments reward proper conduct and penalize those who disregard vital interests of their immediate and broader societal environment.
6. Risk and venture capital are essential instruments of supporting early stage innovative enterprises and they depend on general investment conditions and entrepreneurial culture. Regional and national authorities have to create measures stimulating capital formation and readiness to invest, as well as to nurture risk taking and destigmatize business failure. Investment climate strongly depends on general



market conditions in any regional or national setting, notwithstanding the impact of international factors.

7. Tertiary education by and large does not fully reflect the current and future needs of labor markets, let alone human capital requirements of knowledge economy. Irrespective of ongoing discussions, the pace and intensity of university reforms are insufficient and does not recognize transformation of the role of tertiary education in modern society. The changes can be achieved only through open dialogue and closer collaboration between universities, business and other social actors and authorities.
8. Regional innovation policy has to be an organic part of development strategy, corresponding to specific conditions and opportunities, paying particular attention to human capital. Due to their proximity to key stakeholders and actors, the regions are in an advantageous position to mobilize and involve them in formulating and implementing instruments of innovation policy. These instruments have to be consistent with national framework policies and regulations, but should also provide additional specific measures to respond to particular needs and conditions in the respective region.
9. Gender equality is not only a question of fundamental rights, but an economic necessity, as female human capital remains strongly underutilized in all societies. In the decision-making processes women are highly underrepresented and this certainly does not contribute to the quality of decisions, be it in politics, business or other domains of public life. Knowledge Economy Network endorses the “Women on the Board Pledge for Europe” and recommends to companies to follow this important initiative of Vice President of the European Commission Viviane Reding.
10. The process of gradual integration of Southeastern Europe into the EU is very incremental, and orientation towards knowledge economy carries double benefits: it facilitates economic integration, and contributes to making a stronger, more competitive Europe. Regional development agencies have an important role in this process.
11. At the closure of KEN Forum 2011, the proposal for the topic of Forum 2012 “Developing Knowledge Economy through Collaboration among Generations” was supported. The Forum will take place in Maribor, Slovenia on the 11th and 12th of June, while Preparatory Workshops will be organized mostly between January and April.
12. Diminishing European competitiveness is partly also the consequence of slow pace on integration. While the Commission should be more assertive in this direction, politicians and opinion makers could contribute more to the realization that this problem deserves higher priority. By increasing the efficiency of its integration Europe will also regain its attractiveness for possible candidates, including those in SE Europe.
13. Forum-2011 participants supported the proposal for the topic of Forum-2012 to be “Developing Knowledge Economy through Collaboration among Generations”. The Forum should take place in Maribor, Slovenia on 11-12 June 2012, while the preparatory workshops should be organized with partners between November 2011 and April 2012.



KEN Awardees 2011 - statistical overview

Below you will find statistical overviews of Switzerland, Region of Stuttgart, the Republic of Korea and Buskerud County, chosen for their continued effort and excellence in the field of knowledge economy. The KEN Award 2011 ceremony will take place on 6 June, 2011.

Switzerland

I. Strength

Switzerland's strength as a place for innovation stands out in the following 4 key areas:

- (1) Switzerland has more scientific publications per capita than any other country in the world, and is exceptionally productive in creating intellectual property - filling 107 patents per million population.
- (2) Switzerland is home to some of the world's best research institutes and universities such as ETH Zurich, EPFL and IMD, which produce highly qualified experts and perform cutting-edge research. Furthermore, Switzerland spending for research and education is high and the Swiss government tries to provide the best possible framework conditions for public and private research.
- (3) The quality and productivity of the Swiss work force is very high, with a deep-rooted proclivity for lifelong development. Switzerland's productivity ranks consistently among the top 5 of the world's most important economies. Overall labor costs are lower than in comparable countries. Taxes, ancillary labor costs and social security premiums are moderate, absences are low and strikes are very rare. Political stability, low public debt and multilingualism are other success factors.
- (4) Switzerland is a pleasant and convenient place to live - always ranking as a top location in terms of quality of life and transportation infrastructure.

II. Performance & Success

Multinational companies, which are also called Switzerland's economic pillars of wealth, contribute 35 percent to the Swiss GDP. In ten years from 1997 through 2006, they grew more than twice as fast as other industries (excluding public services), generated 74 percent higher value added per employee, and created over 140,000 jobs in Switzerland. 75 percent of these industries are highly innovative.

Worldwide, roughly 10 percent of employees work in Research and Development, and this share is 15 percent in Switzerland. The strong commitment of private companies to R&D is a big asset of Switzerland. Private companies account for two third of the total R&D spending and private R&D expenditure amounted to 2.2% of the Gross Domestic Product (GDP) in 2008 (10 billion Euros for R&D outside of Switzerland, and 8 billion Euros for R&D in Switzerland, both in 2008)

Due to Intense growth of High-tech manufacturing industry, Switzerland currently has a shortage of roughly 3,000 engineers and scientists, and it is estimated that this number could be double by 2016.

Switzerland is the second best with 107.56 patents per a million population (1.07%), following Japan.

III. Switzerland's Ranks Among the Top Countries for Innovation

According to various rankings for innovation and competitiveness, Switzerland is always placed among the top 5 countries:

- **First** according to Pro Inno Europe's European Innovation Scoreboard 2010.
- **First** according to World Economic Forum's



Global Competitiveness Report.

- **Second** after Japan, according to Economist Intelligence Unit's Innovation Index.
- **Fourth** according to the Global Competitiveness Yearbook of IMD

Top Three Inventions and Innovations

- Swiss ICT company Logitech, a start-up of the Ecole Polytechnique Fédérale de Lausanne founded by Daniel Borel on a farm in 1981, developed the mass-marketed computer mouse, which made the company world-famous
- Nescafe, the coffee most often drunk in the world, was introduced in Switzerland in 1938 after having been developed for seven years by researchers led by Max Morgenthaler of the Swiss company Nestlé.
- In 1970 Swiss physicists Martin Schadt invented (together with his German colleague Wolfgang Helfrich) the so-called twisted nematic field effect (TN-effect) in the Research

Laboratories of Swiss pharmaceutical company F. Hoffmann-La Roche Ltd, in Basel. This invention allowed the construction of the LCD, the liquid crystal display. The resulting patent was licensed world-wide to electronics and watch industries and the pharmaceutical company Roche established itself as a major supplier of liquid crystal materials for the emerging LCD-industry.

- **Cellophane** - Swiss chemist Dr. Jacques Edwin Brandenberger invented cellophane circa 1900.
- **Velcro** (a.k.a 'the hook-and-loop' fastener) was developed by Swiss inventor George de Mestral.
- **The Oil Lamp** - Swiss physicist and chemist Francois Pierre-Ami Argand is credited with adding vast improvements to the oil lamp during the late 18th century. The brightness of the Argand lamp was equivalent to six to ten candles, something almost unheard of during the late 1700s.

Region of Stuttgart

General Outlook

More than any other regional capital-city, Stuttgart region of Baden-Württemberg, stands for R&D and Innovation, both nationally and internationally. It is a strongly knowledge-oriented economic region, whose success depends on the knowledge-based products and services of its companies.

Considering the R&D expenditures as percentage of GDP, Stuttgart is at the top of the list with 7.2% of its GDP (101.3 billion Euros) among 8 leading European Regions, such as: Västsverige (S), Pohjois-Suomi (FI), Essex (UK), Noord-Brabant (NL), Midi-Pyrenees (FR), Stredni Cechy (CZ), and Steiermark (AT).

An important contribution to knowledge econo-

my is provided by linking business and research, through servicing various types of clusters, and 13 competence and innovation centers, such as: BzA-BW (fuel cell technology), Kinet (sustainable energy and renewables), KTMC (telematics, mobile computing and customer care) and so on. These competence and innovation centers are networks of businesses, research institutes and universities in a specific technology field. They act as important catalysts for the cooperation of business and research for example by initiating innovative cooperation projects and helping SMEs in finding suitable research partners.

Motor car, coffee machine, airbag, disc laser and office copy machine are some of important inventions coming from the Stuttgart Region.



Economic Strength

Stuttgart Region's population is 2.7 million from 170 countries and 1.4 million of those people are employed. The productivity (measured in GDP per employee) is 65,698 euros and in purchasing power parity (PPP) per capita it is €55,000; with German average being €30,000, while the highest in Europe is Luxembourg with nearly €60,000.

There are about 150,000 SMEs in the region. And also lots of well-known companies such as Daimler (Mercedes-Benz is one of the brands of Daimler, Porsche, Bosch, IBM, HP, Kärcher, Trumpf, Stihl, (Neoplan was sold to MAN and is now only a MAN brand) and Contact Air.

Percentage of people employed in high-tech industries is 23.5% in Stuttgart while other 7 leading high tech regions' percentages were between 16-22% including Karlsruhe, Braunschweig, Tübingen, Freiburg, Upper Bavaria, Rheinhessen-Pfalz and Alsace(France).

R&D Intensity

Stuttgart has: 2 Universities, 3 Universities of Applied Sciences, 11 public research institutes, and 6 institutes of industrial collaborative research – which altogether makes very strong R&D infrastructure.

More than 11% of all R&D-expenses in Germany are registered in the Stuttgart Region (amounting to 4.3 billion Euro per year).

Stuttgart has more patent applications than any other German region: in 2006 there were 4,775 in comparison to second region, i.e. Munich with 3,849, Duesseldorf with 1,645 and Berlin with 1,100. German national total was 130,400, compared to USA with approximately 370,000, and China with 128,850.

In conclusion, Stuttgart region is a leading European knowledge economy region, with excellent performance in many domains, and offers inspiration with original instruments, like the "Competence Centre Program", and therefore it gives me special pleasure to present the Award to its representative Mrs.Fleischmann.

Republic of Korea

I. Education Capacity and Inputs

Economy and Education Relationship

Korean economy has become world economy no.11, and has an education budget of nearly 33 billion US dollars - making 5.06% of the GNP.

Number of Universities, Students and Teachers

Korea has 376 Universities/Colleges with nearly 3.5 million students and 60 thousand full time teachers. And ¾ of those Universities/Colleges are private.

Majority of Korean Universities (139/200) offer PhD studies).

II. Education Performance

In 2008 almost 73,000 people obtained Master Degrees and 9,346 people got PhD degree.

Education Statistics

The advancement rate from High School to Higher Education in 2008 was 83.8% while it was 27.2% nearly 30 years ago. The percentage of female students has risen from 24.1% in 1980 to 40.9% in 2008. The enrollment rate was 11.4% in 1980, and it is above 70% now.

Statistics by Fields of Study

Korea with 854,333 students has the biggest share with 27.4% percentage of the University graduates in the field of Engineering and Manufacturing (while in US this share was only 6.3%, in Germany



17.6%, Hungary 9.1%). At the same time, Korea has the biggest share in Humanities & Art with 21.4% while USA has only 14.4% (Germany 14.7% and Hungary 8.7%).

Mobility

In 1980 there were no foreign students studying in Korea, while it is nearly 50,000 now. In addition, the number of Korean students studying abroad has increased to nearly 250,000 from 150,000 in the same period.

III. Evaluation and Prospects

14 of the Universities in Korea had their places in top 500 Universities in International Evaluation Ranking of The Times. Seoul National University is 50th and KAIST is 95th among top 100.

Buskerud County

Drammen has been traditionally a poor timber and paper manufacturing area, which has changed dramatically over last 20 years, not because of the Norwegian oil and gas, but thanks to entrepreneurial drive of its people and good regional governance creating the right conditions enabling such.

Manufacturing has evolved in the direction of higher added value, and ITC, engineering design and consulting services have become the most promising business areas, particularly in domains such as health and elderly care demonstrating the promise to become the pillars of economic activity in the county.

The area of Drammen is now enjoying the results of most advanced urban planning and high quality residential development and environmental protection of the naturally beautiful area (covered by forest more than any other part of Norway).

The county has a multicultural population (18% im-

Brain Korea 21 Project

This projects aims at developing world class graduate schools and nurturing R&D manpower, enhancing research capability through supporting future R&D manpower financially, nurturing specialized regional universities and strengthening industry-university ties and reforming university system.

When this project first started in 1999, the number of articles by Korean authors registered in SCI was 3,765 and the country's world ranking was 18th but after the phase I ended in 2005, the number of articles nearly doubled and the world ranking raised to position 12.

Prospects

When the project started, Korea had 79,680 students and 564 project teams in 166 universities, while for 2012 they expect to have 147,000 students and 569 project teams in 74 universities.

migration background – twice the national average) with good integration process results.

Entrepreneurship development has been the key instrument for economic restructuring and transformation. Through the program Value Creation 2010 – organized by the Norwegian Research Council (NFR), with the participation of Norwegian Federation of Trade Unions (LO), and the Federation of Business and Industry (NHO) many new companies have been created, and perhaps even more importantly, sharing and transfer of knowledge, skills and technology took place among companies which led to coalitions of enterprises, and later to regional partnerships. National and local representatives of both project partners (NHO and LO) were important drivers of the process, together with local social partners. A case of excellent synergy achieved through genuine collaboration among various social and economic actors from the public and private arena.

Buskerud also excels in female entrepreneurship: there are very good business schools, and strong



representation of women in company boards.

According to the Report of the Confederation of Norwegian Enterprise (NHO) Buskerud was one of the 3 test regions, in the **Female Future Program** (2003-2005) and the result have been impressive: while at the national level 34% of women participating in the program were offered board positions in Buskerud the share was 60%. During the 2003-2008 program on leadership, networking and board competence and visibility 160 women from the county participated (40% of them ethnic

background women and men – since they need to change their traditional perception of women role in society).

This is part of a bigger picture: namely Norway has achieved by far the highest share of women in publicly listed companies: 43% in only 6 years after the adoption of the Law requiring 40%. Not only has this been a remarkable achievement, it has motivated several other countries to follow in the same direction (Germany, Belgium, Catalonia in Spain).



Introductory remarks by KEN Thematic Tables' Moderators

Following very favorable experience from EREF-2010, the KEN Forum 2011 will stimulate maximal activity of all participants, and dedicate half of the first day to discussions at 10 thematic tables. Below you will find four of the ten introductory remarks from KEN Thematic Tables' Moderators.

Thematic table on Potential and Challenges of Business-Academia Collaboration

Table moderator: Roman Glaser

At the beginning of the 21st century, we face the challenges of fundamental restructuring of the world as we know it today / speciallly in domains of economy and technology. These challenges call for critical reflection on the causes of this situation, and require a change of lifestyle, as well as changes in the way we behave, produce and interact. The processes we are witnessing, give even stronger emphasis on the need for knowledge, which is a value that meets the individual and gives him a proper place in modern society, which enables social inclusion, sustainable lifestyles and sustainable economy, all of which leads to a high quality of life and fairer society.

As soon as possible, responsive research and innovation systems, developed by all stakeholders and open to the world, should be created. Such systems should be firmly entrenched in society, be in its service, they should respond to the needs and ambitions of the citizens and facilitate the resolution of major economic and social challenges of the future. The central piece of this system is the relationship between business and academia, and it has to be developed in active response to the changed circumstances. However, this is not happening. Particularly Europe is too slow /why and how we increase our motivation for change?

Europe is simply not innovative enough, and that seems to be the result of numerous causes: fragmentation of RTD capacities, insufficient public and private RTD funding, research priorities of public institutes are determined with little influence of

business, small proportion of scientists and engineers in the total labour force, expensive and slow patenting procedures, lack of venture capital, tertiary education not following today's labour market needs, etc.

Under such conditions, it is not surprising that companies are not competitive. Among 50 most innovative companies of the world only 8 come from Europe (35 are from US, 4 from Japan, and 2 from the Republic of Korea). From Europe 3 are from Germany, 2 from UK, and 1 from Sweden and Finland each.

Therefore it is not surprising that among the 7 »flagship initiatives« in Europe2020 Strategy, the »Innovation Union« came first. After their adoption Europe is expected to intensify efforts to achieve the targets of the strategy more effectively than during the Lisbon Agenda. One of the key differences between the two strategies is the stronger emphasis on ownership, closer collaboration among relevant stakeholders, systematic monitoring, and improved governance of the process at all levels, particularly at the national and regional levels.

Looking particularly at these aspects, by which Europe2020 Strategy is different from the Lisbon Agenda, it is important to start soon intensive discussions among stakeholders and policy makers on how to implement these commitments, and get inspiration from some good practice cases. This will help in overcoming structural and other bottlenecks, and reduce negative influences of factors preventing Europe's advance in knowledge-based competitiveness.

Involvement of stakeholders will prevent duplication while enabling the achievement of synergy effects. All players will fully enjoy the benefits and re-



ward of the free flow of knowledge and technology between sectors, promotion and dissemination of scientific knowledge and will encourage responsible behaviour and social consciousness of the common good. The gap between research, education and innovation should be overcome, their common denominator being partnership, lifelong learning, new knowledge and sustainable development. Research institutions will have a strategic, financial and managerial autonomy, but also responsibility for the implementation of their socially relevant missions. The governments should place research and innovations at the heart of their policies and assure adequate financial support. Development should be manifested through higher-technology industries and higher added value as a result of technological and non-technological innovation. This would lead to the greater competitiveness of the economy, while fiscal and supportive environment would encourage new and increased corporate investment and development and more and higher quality jobs.

The case of Slovenia could be an interesting one. Being one of the advanced new member-states, Slovenia shares all the problems of European RTDI, but is also facing the consequences of the transition process, as the other new member states. At the same time, the government wishes to intensify the country's efforts to catch-up and perceives RTDI and tertiary education as two strategically important policy areas for achieving knowledge economy.

In spite of the unfavourable economic and financial position, Slovenian government managed to increase public RTDI funding in 2008-2010 from 0.6% to about 0.9% of GDP. It is now proposed that 60% of all public RTDI funding should be channeled through business sector, while business is currently already contributing almost 2/3 of the GERD total. As the research community is traditionally experiencing underfunding (in 2008 GERD was 306 € per inhabitant – while EU average was close to 500 €, and Austria registered even 900 €), and the bulk of the business sector is not investing enough into RTDI (only 2 Slovenian companies are among

top 500 world RTDI investors), the idea of business – academia collaboration concept is sometimes facing doubts and skepticism among members of Academia. There is modest tradition of mutual trust and appreciation between the two domains, which have been used to sit on different benches, and sometimes even opposing corners. How can these differences be resolved through a dialogue and partnership producing benefits for both sides, and enhance the innovative capacity of the country? Though Slovenia has a somewhat better starting position among the new EU members, it still could learn a lot from good practice cases not only from some EU Member States, but also from other countries in the world.

However, at least two 2020 national strategies were recently (May 2011) adopted in Slovenian Parliament; one for tertiary education, and the other one for RTDI. Both documents have attracted vivid public discussion and there is a strong public sentiment, that these are crucially important policy domains, on which our future international competitive position depends

Key questions:

- (1) What can the national and regional authorities do to support the Business/Academia partnership?
- (2) What motivates business and academia for closer and productive partnership?
- (3) Which are the most promising forms of B-A partnership (clusters, competence and excellence centres, science and technology parks, etc.)
- (4) How can tertiary education institutions become more research intensive?
- (5) What should university teachers undertake to encourage more research for the business sector?
- (6) Which are the most successful forms of B-A co-financing of research?



Thematic Table on Knowledge Economy Indicators (KEI), Comparisons and Monitoring

Table moderator: Metka Stare

1. Introduction

Thanks to the development of knowledge economy indicators (KEI) we are today much better equipped to analyse the knowledge economy than we were two decades ago. KEI provide good basis for cross-country comparisons and benchmarking and could be used as a tool for monitoring country's progress and efficiency of their policies towards knowledge economy. Significant improvements have been done in collecting data for new indicators related to knowledge economy and in developing novel methods of integrating large number of diverse indicators into a single synthetic indicator. The advantage of such measures is that they capture multiple dimensions of knowledge and facilitate cross country comparisons. The improvements in KEI could benefit policy makers to adopt better informed decisions concerning the take up of knowledge economy.

A brief reference is given below to a limited number of actions that resulted in sets of KEI and were developed by international institutions and projects. However, there exist much larger number of projects and programmes at the national and also international level.

2. State of the Art

In the last decade quite a few attempts towards better measurement of knowledge and related indicators were made worldwide by international institutions and national agencies. They investigated multi-dimensional knowledge traits and produced different approaches towards measuring knowledge. Institutions propose different sets of indicators to depict the most important elements of knowledge that could be compared between countries and time periods. New efforts are being made to improve the existing indicators and sta-

tistical background for them. Literature survey of knowledge-base economy points to five main elements: human resources and skills, ICT investment and use; knowledge production; entrepreneurship; and innovation and organisational change. Those elements became the focus of analyses and identification of most relevant indicators of knowledge based economy.

2.1. OECD Measuring Innovation

OECD work with knowledge economy indicators dates back to 1996 when systematic approach was launched - »to fully understand the workings of the knowledge based economy, new economic concepts and measures are required which track phenomena beyond conventional market transactions. In general, improved indicators for the knowledge-based economy are needed for measuring knowledge inputs; measuring knowledge stocks and flows; measuring knowledge outputs; measuring knowledge networks; and measuring knowledge and learning« (The Knowledge-based Economy, OECD 1996).

In 2010 OECD presented a major step forward in measuring innovation where traditional "positioning" indicators have been used to show where countries stand on a particular issue, and, also presented a more sophisticated or experimental indicators that go beyond simple "pointers". These either complement the positioning indicators or point to potentially superior substitutes that provide insight into new areas of policy interest, and highlight measurement gaps to propose directions for advancing the measurement agenda. Indicators are aligned in five thematic fields and vary in regard of the numbers¹: Empowering People (20), Unleashing Innovation in Firms (12), Investing in Innovation (20), Reaping returns from Innovation (15), Addressing global challenges (9). Data sets in line with those indicators are presented for OECD economies. The presentation of indicators is very illustrative and goes much beyond data. It consists of the following:

1 They are given in parenthesis.



- A few lines to show why it is relevant to monitor the “positioning” indicator;
- Figure with the indicator;
- A “Did you know?” frame that provides additional information from the source;
- A few paragraphs describing the use of the positioning indicator
- A small “Definitions” box for those who are not familiar with the indicator
- One or two figures that go beyond positioning indicators. While they provide a fresh perspective on a particular facet of innovation and frequently provide a better link to policies, these indicators suffer from less country coverage, and are frequently experimental in nature (first-time indicators) that have not benefited from the experience and refinement associated with the “positioning” indicators; and
- A “Measurability” box that summarises

Source: *Measuring Innovation: A New Perspective*, OECD, 2010.

2.2. World Bank Institute - Knowledge Economy Index (KEI)

The World Bank knowledge economy methodology was introduced in the beginning of new millenium to measure and compare the performance of 146 countries with 109 structural and qualitative variables on the four Knowledge Economy (KE) pillars: Economic Incentive and Institutional Regime, Education, Innovation, and Information and Communications Technologies. It enables six different display modes:

- Basic Scorecard uses 14 key variables as proxies to benchmark countries on the aforementioned four KE pillars and derive their overall KEI and KI indexes. The scorecard allows comparisons for up to three countries for 1995, 2000 and the most recent available year.
- Custom scorecard allows any combination

of the 109 variables and to compare up to three countries or regions for 2000 and the most recent available year.

- KEI and KI indexes presents performance scores of all countries on the KEI and KI indexes, as well as on the 4 KE pillars.
- Over time comprison demonstrates countries’ progress on Knowledge Economy pillars and indexes from 1995, 2000 to the most recent year.
- Cross country comparison allows bar-chart comparison of up to 20 countries on their KEI and KI indexes while demonstrating the relative contribution of different KE pillars to the countries’ overall knowledge readiness.
- World map provides a color-coded map for the global view of the world’s KE readiness for 1995, 2000 and the most recent year.

Source: [World Bank, Knowledge4Development](#)

2.3. European Commission - European Innovation Scoreboard (EIS)/ Innovation Union Scoreboard (IUS)

In 2002 the European Commission introduced the EIS to highlight and monitor determinants and outcomes of innovation activity of EU member states. EIS is a composite indicator that summarizes different indicators. Their number expanded and changed since 2002 in line with new analyses and insights on the determinants of innovation capability. Also, the number of countries monitored has increased. In 2011 EIS was renamed to the Innovation Union Scoreboard (IUS) to help monitor the implementation of the Europe 2020 Innovation Union flagship by providing a comparative assessment of the innovation performance of the EU27 Member States and the relative strengths and weaknesses of their research and innovation systems. The former list of 29 indicators in the EIS 2009 has been replaced with a new list of 25 indicators, which better



capture the performance of national research and innovation systems considered as a whole.

Composite indicator of innovation performance consists of three major knowledge dimensions that track developments in several fields via individual indicators²:

- Enablers: Human resources (3); open, excellent and attractive research systems (3); finance and support (2)
- Firm activities: firm investments (2), linkages&entrepreneurship (3), intellectual assets (4)
- Outputs: innovators (2); economic effects (5)

While some of the indicators of the IUS (such as public R&D expenditure) can be more easily influenced by policy intervention than others (such as SMEs innovating in-house), the overall ambition of the Innovation Union Scoreboard is to inform policy discussions at national and EU level, by tracking progress in innovation performance within and outside the EU over time. The IUS 2010 includes innovation indicators and trend analyses for the EU27 Member States, as well as for Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Norway, Serbia, Switzerland and Turkey. It also includes comparisons based on a more reduced set of indicators between the EU27, the US, Japan and the BRIC (Brazil, Russia, India and China) countries.

Source: [Innovation Union Scoreboard 2010](#)

2.4. FP6 Project - Knowledge Economy Indicators

Project developed under Sixth Framework Programme of the European Commission between 2004-2008. Project suggests seven main dimensions of knowledge based economy that were used in the construction of composite index. These in-

² Number of indicators is given in parentheses.

clude:

- four drivers: production and diffusion of ICT; Human resources, skills and creativity; knowledge production and diffusion; innovation, entrepreneurship and creative destruction
- two outcomes: economic outputs, social performance and
- cross-cutting dimension of internationalisation

After evaluating several hundred indicators across seven dimensions 113 indicators were selected for further analysis. However, due to data availability issues all of them could not be used in the calculation of the composite index (in fact only 23 were used). This highlights the need for further work to expand the quality and national coverage of knowledge based indicators. Even larger gap is found at the sectoral level. Project authors propose three options for improved indicators: linking existing data in order to obtain new insights; creating entirely new indicators, and creating new indicators by imaginative ways of analysing existing data. The project results have already had a notable impact on the collection, analysis and presentation of KBE indicators, with the results taken up in different projects by the European Commission and by the OECD.

Source: <http://www.uni-trier.de/index.php?id=26661>

3. Assessment of experience with KEI and open questions

Notwithstanding the improvements of KEI so far it would be self complacent to claim that further progress is not possible. Knowledge is dominantly intangible, uncodified and many of its dimensions are still hidden and unmapped. This refers most notably to »the servitization process« in economies, where service sector and service activities account for the predominant share of GDP and employment. Yet, most methods for the compilation of national accounts and other statistics were devel-



oped for manufacturing that is based on tangible and visible results. This casts a long shadow on the measurement of innovation beyond R&D expenditures and points to the gaps that need to be addressed by non-traditional approaches and indicators³. As a result better measurement methods and development of intangible knowledge indicators is of utmost relevance not only for policies at the macro level but for businesses as well⁴. Furthermore, knowledge is a very dynamic category that grows in line with the technological progress, new combination of existing knowledge and interrelations among knowledge stakeholders.

How to deal with these complex issues? A set of questions emerges that need to be addressed at the Thematic table H. Some of them are preliminary proposed below, however the list is open to other questions that will be raised during the discussions.

- Evidence on KEI so far suggests different mix of indicators that attempt to capture and approximate »knowledge« component of economies and differ in scope. How broadly should KEI be defined?
- Should KEI also be extended towards indicators that reach beyond traditional knowledge indicators and affect the health of the economy and welfare of citizens. (social, environmental indicators)? Case in place is newly launched OECD well-being indicators.
- Given the variety of existing KEI what is the priority- implementation and collection of data for selected indicators or new indicators development?
- Which dimensions of knowledge face the largest measurement gap and the lack of data?

³ Investment in R&D is much less important for service sector innovation than for innovation in manufacturing.

⁴ Service firms often face difficulties in providing guarantees for bank loans as their assets' portfolio is mostly composed of intangibles rather than tangibles that usually serve as a collateral.

- How to make better use of existing public databases and apply them to identified KEI?
- Reporting of additional data for knowledge indicators imposes burden on firms. Could an approach »introduce new and reduce old indicators« be viable from the perspective of businesses?

Thematic Table on Business Ethics and Corporate Social Responsibility

Table moderator: Matjaž Mulej

1. The general framework: The four phases of development of the basis of competitiveness:
 - Ownership of natural resources; investment; innovation; affluence and bubble-economy phase (as the highest-aspiration and dead-alley phase, present now); and:
 - The fifth phase: social responsibility as a new option and potential non-technological innovation concerning socio-economic, business, organizational, and personal relations and working.
2. The innovative entrepreneurial society
 - A general framework;
 - From the feudal to the market capitalism (without monopolies and with full personal social responsibility of all influential persons and their organizations - from family via enterprises etc., states to the worldwide ones);
 - Specifics in the contemporary affluence and bubble-economy phase.
3. The invention-innovation-diffusion process
 - A general framework;
 - Typology of technological and non-technological innovation;
 - Process from idea making via invention making, suggestion making, potential innovation making, innovation making, and its diffusion, to beneficial daily routine;



- Covering of the said process in the management innovation and process;
 - Specifics in the contemporary affluence and bubble-economy phase.
4. Social responsibility as the innovation of socio-economic model - the contemporary way out of the current dead-alley phase
- Documents of United Nations Organization and European Union about social responsibility: far beyond charity toward honesty and reliability in business and other relations, for clear economic reasons;
 - ISO 26000 on social responsibility: seven topics linked by (1) interdependence and (2) holistic approach; they include: (1) human rights, (2) labor relations, (3) environment, (4) fair business practices, (5) customers, (6) community development and involvement, and (7) organizational management;
 - Social responsibility as a/the path from the extremely dangerous one-sidedness of so far toward the requisite holism on the basis of the practice and ethics of interdependence based on complementary mutual differences of humans as specialists and human beings (and other parts of nature).
5. Business excellence (as defined by EFQM) as a practical tool supportive of development of social responsibility and socio-economic/business/organizational/personal success after the affluence and bubble-economy phase
- Principles of business excellence;
 - Non-technological invention-innovation-diffusion process from the given practice toward business excellence.
6. Holistic, i.e. systemic, systematic, interdependence-based, and realistic behavior, as the background of the innovation, social responsibility, and business excellence
- Systems, cybernetic, and dialectical principles as the basic path from one-sidedness to requisite holism;

- Requisitely holistic personality: specialization without over-specialization and with capability and readiness of interdisciplinary creative cooperation based on ethics of interdependence;
- Methods of creative cooperation.

QUESTION FOR DISCUSSION 1:

1. How crucial are changes over the recent two decades for the current social-economic situation and trends for the near future of humankind, including your-self – in your experience and perspective?
2. How realistic are warnings by e.g. economic data on international depths of practically all countries of the world – in your experience and perspective?
3. How realistic are assessments that the current problems can technologically be solved with the currently given knowledge, once the influential persons and their organizations are ready to change their ways of life and business – in your experience and perspective?
4. If the growth of GDP of the world keeps growing like it used to over the decades after WWII, who will be its consumers and what natural preconditions will exist – in your experience and perspective?
5. How up-to-date is measurement of economic success with GDP, once happiness and well-being (no longer) depend on material standard of living less and less – in your experience and perspective?
6. Do we need social responsibility in the nearest future?

QUESTION FOR DISCUSSION 2:

1. Is the 2008- crisis really just another financial or demand-in-market crisis, or something deeper,



essentially a crisis of habits that fail to be innovated – in your experience and perspective?

2. Which one of the attributes and preconditions of social responsibility briefed above is not important – in your experience and perspective?
3. Which ones of the attributes and preconditions of social responsibility briefed above are the most important – in your experience and perspective?
4. What chances for innovation of habits, not technology only, in general are there – in your experience and perspective?
5. If the modern humankind's economy is controlled by a rather small number of multinational corporations, how can social responsibility and humankind's benefit be attained, if humankind has only national and international, but no supra-national law – in your experience and perspective?
6. Are we living in a 'knowledge' society, or rather in a 'knowledge and ethics' society, or even in a 'knowledge, innovation, and ethics of interdependence' society – in your experience and perspective?

Thematic Table on Progress on accession preparation for candidates in SE Europe

Table moderator: **Albert Maes**

I The Western Balkans : 15 years of peace (or armistice). The region remains divided in a number of small states of which many are unable to be economically viable (competitive) without external assistance, reflecting the cost inherent to the fragmentation of the Western Balkans (the overall EU contribution to the Western Balkans has never been so high and at the same time so economically inefficient, essentially geared as it is on the pacification of the region).

In spite of incremental progress as recently in Ser-

bia and in Croatia, the overall relationship among states remains based on mistrust and the cooperation efforts are extremely limited. Strong nationalism remains a plague in the Western Balkans.

II At the same time Europe as a whole experiments a strong resurgence of nationalism in most of the EU memberstates (the political weight of nationalist parties has dramatically increased in many countries and a number of governments depend on their goodwill). This trend affects at the same time the perspectives of the European integration process as well as its capacity to handle adequately the Western Balkans problems, including its readiness to accept an important number of new members.

In Europe this rise in nationalism seems to be essentially due to an increasing mistrust in the functioning of the existing democratic system. The frustration of the voters expresses itself in a high rate of abstention both in national and European elections, a kind of global rejection of the existing systems, national and even more so European up to a point of bringing into question the integration process itself or at least the integrated policies (e.g. monetary, commercial, competition policy).

It should be noted that on the basis of the existing treaties, the EU is poorly equipped to tackle the latest socio-economic challenges (such as globalisation, aging, socio-economic rigidities, knowledge economy).

III At the same time this situation weakens the capacity of the EU to be an attractive model for the Western Balkans as well as to adopt the necessary steps to facilitate the functioning of the Union with seven new members. Indeed the present mistrust in politics, more clearly so at EU level, prevents an extension of integrated policies in the fields where new economic and social challenges come up (globalisation, aging) aggravating so the popular perception that the EU is unable to deal with them and that measures have to be taken at national or even at regional level.



IV In these circumstances the SE European question has to be given special attention : its solution implies both progress in the Balkans (rule of law, fight against corruption, respect of minorities accompanied by intensified regional cooperation, political, economic and social, so as to enable the states of the region to start formally the accession procedures and negotiations as well as a reconsideration of the european integration structure to enable it to work smoothly and efficiently, first to solve its own challenges, then to allow the integration of a large number of countries.

V In that context, the peripheric regions of the EU memberstates and the Western Balkans states can play an active role because, on the one hand, they have often suffered mostly of exacerbated nationalism and on the other hand, would benefit the most of transborder cooperation helping so to develop mutual understanding and trust and to build poles of excellence.

VI The underlying challenge for Europe as a whole remains the functioning of the european democratic system at all levels, regional, national and european, able to ensure a truly european unification.

1. 15 years after the hostilities in the region can we speak of peace or just armistice?
2. Given the serious problems of the European integration process, is EU able and willing to offer a viable alternative to Western Balkan nationalism?
3. Is EU membership still a valid option to achieve political stability and economic prosperity in Western Balkans?
4. How do you see an enhanced role for the peripheral regions in the EU and in the Balkans to facilitate their own economic recovery, and contribute to the awareness of the importance of economic and political integration.



Draft Workshop Recommendations

Prior to KEN Workshops, policy recommendations are prepared for participants. Below you will find recommendations from the four KEN Workshops, held in April and May, 2011. We kindly invite you to send your comments and suggestions concerning the draft recommendations, which will be submitted to the Forum in Maribor on 6 – 7 June 2011, to sinkovec@knowledge-economy.net

Responsible Entrepreneurship and Business Ethics

Date: 21 April, 2011.

Location: Graz, Austria.

Organised by: Internationalisierungs Center Steiermark

Draft text of Recommendations		International	Country / Region	Stakeholders
1	<p>CSR: Paradigm change and mind-shift</p> <p>Corporate social responsibility (further CSR) has been in the public debate for about 15 years and it emerged as a consequence of several objective, material developments (globalisation with increased interdependence, climate change, pollution and other environmental challenges, etc.) as well as, as a result of higher civic and corporate culture, including the awareness of the importance of ethical standards.</p> <p>CSR is rather complex and it includes: (1) governance, management and organisation; (2) human rights; (3) labour relations; (4) natural environment; (5) fair business practices; (6) consumer issues; (7) community involvement and development.</p> <p>CSR and business ethics have become a fundamental concern of modern, democratic society, but they can be fully respected and thoroughly applied only with combined and sustained efforts of policy makers, and stakeholders at all levels (from organisation, to local, regional, up to international and global). This requires a fundamental shift in the socio-economic model and important changes in mindset of thinkers, opinion makers, politicians, economic actors, and the general public, including their perception of needs and consumption patterns.</p>	X	X	X



<p>2</p>	<p>The scope of CSR</p> <p>The definition of CSR (“a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis” EC Green Paper 2001) needs no adjustment, but in spite of many efforts at national and regional level, still remains insufficiently accepted by companies – particularly by SMEs.</p> <p>Companies should acquaint themselves with relevant documents (ISO26000 standard, adopted on 26 October 2010), studies, and description of good practice cases, which will facilitate their understanding of a broader impact of CSR. “Guidance on social responsibility” (ISO 26000) is a groundbreaking contribution to the development of a common and updated understanding of corporate responsibility. Consumer interests have been included in these core subjects, along with considerations on human rights, labor practice standards, environmental issues, fair operating practices, community involvement and development as well as principles for organizational governance.</p> <p>More systematic awareness building and training effort is recommended, and the concept should be introduced to the business community by demonstrating that its proper understanding and effective implementation should not be regarded as an obligation to society, but as an optimal business strategy securing important economic benefits.</p>	<p>X</p>	<p>X</p>	<p>X</p>
<p>3</p>	<p>CSR as a new background for economic policy</p> <p>Most of present economic theory was based on conditions which have changed fundamentally: we are faced with limited resources and an explosion of population, many technologies which were developed to help humanity are actually threatening our very existence, and extreme social polarisation inside many societies and among countries present a time bomb.</p> <p>Theorists need to approach the burning issues with a fresh mind and develop social and economic models which will be able to resolve these paradoxes and conflicts, and this cannot be achieved without CSR and responsible, sustainable economic development.</p> <p>Policies and instruments to encourage responsible entrepreneurship will achieve best results if and when they will be fully integrated into broader development strategies at all levels, particularly regional and local levels. Policy makers should therefore pay special attention to the impact of new policies and their interaction with other policies and instruments, to achieve desired cumulative impact and avoiding unwarranted conflicting effects.</p>	<p>X</p>	<p>X</p>	



<p>4</p>	<p>Incentives and disincentives</p> <p>Particularly since implementation of CSR principles usually implies costs, companies will act in accordance with the existing regulatory and financial conditions created by local, regional and national authorities. Therefore, it is the responsibility of the later to create normative, fiscal and financial conditions rewarding responsible entrepreneurship and penalising others.</p> <p>Regional and national authorities should develop and maintain a stable and consistent regulatory environment and in order to secure transparent and fair execution of measures in favour of responsible entrepreneurship.</p>		<p>X</p>	
<p>5</p>	<p>International codification</p> <p>Increased convergence and transparency would be desirable in the following fields:</p> <ul style="list-style-type: none"> — Codes of Conduct; — Management standards; — Accounting, auditing and reporting; — Labels; — Socially responsible investment. <p>The Universal Declaration of Human Rights has over time established a global consensus on the applicability of universal moral principles across all types of cultures and nations. These principles are now reflected in today's landmark documents of business ethical behavior: OECD Anti-Bribery Convention; UN Convention against Corruption; World Economic Forum's Partnering Against Corruption Initiative-Principles for Countering Bribery; Transparency International's (TI) Business Principles for Countering Bribery; International Chamber of Commerce Rules of Conduct to Combat Extortion and Bribery; and the UN Global Compact Principle 10 on Anti-Corruption, among others.</p> <p>Many of the principles from these documents are not sufficiently known and should be promoted and popularized in order to increase general awareness of the importance of CSR.</p>	<p>X</p>	<p>X</p>	



6	<p>Rankings and good practice</p> <p>CSR awards and good practice presentations play an important role in CSR awareness building.</p> <p>International rankings of companies in CSR (such as for example The Good Company Ranking by Kirschhoff Consult AG), as well as Awards for good practice cases in CSR assist in awareness building and should be encouraged at national and regional levels.</p> <p>Some suggestions for further promotion activities:</p> <ul style="list-style-type: none"> — International, national and regional CSR awards: Act as an incentive for companies to highlight how they integrate CSR into their business practices and respond to the continually high demands of stakeholders and facilitate competition between companies, to continuously improve CSR practices. — A central contact point for CSR in the European Commission would serve companies, as well as other stakeholders, to provide practical advice on CSR and how to integrate it in companies and organisations. — Rather than starting from the assumption that business has a responsibility and then defining actions to be undertaken, it would be more useful to identify the main areas where there are problems, bring stakeholders together and see where business can play a role in devising solutions to these problems. It is important to reconcile stakeholders' expectations on companies and assess to what extent these expectations are realistic and justified. 	X	X	X
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<p>7</p>	<p>Accountability and reporting</p> <p>There is much authorities could do to reform legal structures and accountability mechanisms, since a comprehensive, long term, sustainable, legal and enforceable system for corporate accountability needs to be built.</p> <p>After three years of legal research which has been reviewed and developed by an array of high profile lawyers, academics and human rights advocates, there are three areas in which the EU could make a significant difference by:</p> <ul style="list-style-type: none"> — Improving the governance in the operations of MNEs concerning foreign subsidiaries and subcontractors. The changes to the EU’s corporate reporting framework, in respect to companies’ duties to report on human rights and environmental impacts of their operations, would significantly improve accountability of EU hosted MNEs. The upcoming consultation on nonfinancial reporting announced by DG Internal Market offers a timely opportunity for the EU introduce reforms to ensure more transparency by MNEs it host. — Improving disclosure of information (mandatory reporting on Environmental, Social and Governance (ESG) information by all listed companies). — Mitigating the practical obstacles facing victims — Changing rules on private international law resulting in improvements for third-country victims of MNEs to access a remedy. <p>It is recommended to identify items pertinent with regard to the company’s vision and specific objectives, the risks and opportunities associated with its environmental and social footprint, the views of relevant stakeholders, the commercial sensitivity of certain data, and other possible competitive concerns.</p>	<p>X</p>	<p>X</p>	
<p>8</p>	<p>Disclosure on essential issues</p> <p>Environmental, social and governance disclosure often failed to adequately address the most essential issues, such as restructuring, environmental impact, freedom of association, promotion of social dialogue, working time, health and safety, integration of disabled people, equal opportunities and gender equality.</p> <p>Also, a review of the market transparency regulation is needed. The authorities should adopt measures:</p> <ul style="list-style-type: none"> — Allowing shareholders to keep control of their rights at all times. — Improving accountability of service providers within the proxy voting chain — Allowing issuers to know who their shareholders are at any moment so that they can communicate to them efficiently. 	<p>X</p>	<p>X</p>	<p>X</p>



9	<p>Large companies and SMEs sharing responsibility</p> <p>Legal and financial provisions should be adopted to facilitate co-operation between large companies and SMEs in managing their social and environmental responsibility (e.g. supply chain management, mentoring schemes etc.) in accordance with national and EU competition rules.</p>	X	X	
10	<p>Training CSR specialist – coordinators</p> <p>Companies should appoint CSR specialist – coordinators being in charge of organizing processes leading to compliance with CSR regulation and norms. Their effectiveness could be enhanced through various instruments and activities, inter alia:</p> <ul style="list-style-type: none"> – people who work on CSR should be adequately trained in order to understand the economic, social and environmental impacts of their companies and how to support its development; – business advisors and support organizations could develop know-how on effective CSR practices, to contribute to capacity building, take-up and assisting businesses in their CSR efforts; <p>Recognizing that not all stakeholders have the resources required to take CSR initiatives forward, public authorities, companies and other stakeholders should support capacity building activities at various levels.</p>		X	X
11	<p>Including CSR in education programmes</p> <p>Business schools, universities and other education institutions have an important role to play in building the necessary knowledge and skills necessary for designing and executing CSR strategies in the beneficiaries’ environments. This should be offered both in the regular curricula as well as in short-term training programmes, as part of Life-long Learning.</p> <p>Not only future managers and employees, but also other stakeholders, should benefit from educational activities (including e-learning programmes) provided by business schools, to improve their knowledge on CSR principles and their practical implementation.</p>		X	X



12	<p>Identifying CSR for market benefit</p> <p>Many companies are involved in activities that benefit the environment or society without necessarily labeling them “corporate responsibility”. It is a good idea to start off by taking stock of existing activities and working from there.</p> <p>Management should identify elements of CSR in their products and services which lead to benefits via market recognition.</p>			X
13	<p>More CSR research for SMEs</p> <p>The recent growth of academic interest in CSR and SMEs is to be welcomed.</p> <p>Further research should be encouraged on action-oriented questions such as:</p> <ul style="list-style-type: none"> — success of different policies and techniques to increase the uptake of CSR amongst SMEs; — economic, social and environmental impact of CSR at regional and local level; — usage and utility of CSR tools for SMEs; — typology of SMEs with regard to their engagement in CSR. 			X
14	<p>Business support services for SMEs</p> <p>Well-established structures already provide business development support that target SMEs, but only few of these integrate social or environmental issues into their activities. There is significant potential to do so, by taking insights from the CSR agenda into the enterprise development field.</p> <p>Business representative organizations (such as chambers of commerce) should be more involved in CSR advocacy and awareness raising, as well as in providing CSR implementation support to their SME members.</p>	X	X	X



Venture Capital for Knowledge Economy

Date: 28 April, 2011.

Location: Istanbul, Turkey.

Organised by: TuR&Bo

Draft text of Recommendations		International	Country / Region	Stakeholders
1	<p>State of Play: VC in Europe and in US</p> <p>Comparison of VC flows between EU and US is very clear: due to fragmented European market there is twice as many companies receiving VC investment, but the average size of investment in US is more than 4 times bigger than in EU. In Europe 40% of all VC investment go into start-ups and early stage, while in US this share is less than 25%. Consequently, in US over 75% of VC investment are realized into expansion and later stage business developments, and in EU this share is 60% - showing that VC is one of the “normal” , mainstream sources of corporate finance.</p> <p>Consequently in US the VC-backed companies provide 11% of all private sector employment, and 21% of total corporate revenue compared to GDP. This is a clear indication of knowledge economy, and Europe has to make VC an equally important instrument of dynamic growth, by identifying cultural, market, regulatory and other barriers, and urgently introduce measure which will address these barriers.</p> <p>Concerted and energetic action is needed to create the conditions in which VC will become a powerful instrument of building European Knowledge Economy and help it regain its international competitiveness.</p>	X	X	



<p>2</p>	<p>Understanding the Nature of VC</p> <p>The nature and importance of VC is not fully understood and appreciated, particularly in Europe. Though it represents only a small share of total business investment in most economies, and in some even marginal share (in terms of % in GDP in 2008 it was 0.05% in US, and only 0.02% in Europe), it usually contributes essentially to dynamic growth of knowledge economy and deserves much higher priority among policy efforts in order to create conditions necessary for stimulating innovation and mobilising private capital to turn new ideas into sound and sustainable business.</p> <p>Venture investment takes place in a very inter-personal context, but depends very much on regulatory and fiscal conditions created by government. VC will give its contribution to economic prosperity of a nation only if and when there is sufficient stock of private capital in the hands of rich and experienced business people, who are ready and entrepreneurial and interested to risk their personal money with prospects of high profit, as well as creative innovators seeking financial backing and guidance in return for partnership (usually stocks) in their normally young company. In US they think of and deal with individuals, while in Europe we automatically turn to institutions (and expecting banks to play a role in VC investment). In Europe we lack ambitious, high growth companies, and there are fewer funds available for venture investment.</p> <p>Authorities, business associations, economists and opinion makers should increase their efforts to put VC into public focus and enhance the appreciation of politicians and government officials of this important instrument of innovation and wealth creation.</p>	<p>X</p>	<p>X</p>	<p>X</p>
<p>3</p>	<p>Fragmentation of European VC Industry</p> <p>Barriers to integration of European VC markets:</p> <p>On the supply side: VC funds face obstacles when investing across borders in Europe, since they are often liable for separate registration or establishment in each Member State, which increases costs and time spent for fund structuring. Some larger VC funds that are nevertheless operating across EU borders have to channel investments through complex and costly parallel vehicles established in other countries. National regulatory frameworks could be more responsive in recognizing the need for VC funds to be able to invest outside their home market without having to establish parallel structures.</p> <p>On the demand side: many innovative and high-growth firms face difficulties in accessing equity finance. Although external equity capital is an important source of financing only for a limited number of innovative firms, understanding its importance for growth financing is essential also for entrepreneurs. Improving entrepreneurs' investment readiness is the necessary counterpart for improving the supply of venture capital and providing basis for a rapid expansion of high-growth firms. EU and member states should act decisively to support gradual integration of European VC markets.</p>	<p>X</p>	<p>X</p>	<p>X</p>



<p>4</p>	<p>Public Private Partnerships</p> <p>There is a great potential for improvement in public policy for the purpose of strengthening public-private partnerships and boosting initiatives in the early stages of commercialisation and the innovativeness of small businesses more generally.</p> <p>There are good reasons to learn from existing good practice. The US Small Business Investment Companies. The varying approaches of the Nordic countries lay the basis for other observations and lessons.</p>		<p>X</p>	<p>X</p>
<p>5</p>	<p>Selecting deals to be supported</p> <p>Project selection process is the key element in the development of venture capital activities, as it includes complex analysis of economic, legal, technological, marketing and logistic aspects of project implementation, as well as the assessment of the person – entrepreneur with his/her drive, experience, abilities and skills, not the least character.</p> <p>An interesting experience is offered by TechColumbus’ Deal Flow Assessment Committee (DFAC) which initially screens all startups in contention for TechGenesis and TechColumbus Pre-Seed Funding and to make recommendations to the TechColumbus Investment Committee as to which of these startups represent the strongest promise for yielding high-growth companies. Even those companies who do not receive funding, benefit from the process of presenting before this diverse group of experts. This is a practice worth studying in detail and to learn from.</p>			<p>X</p>
<p>6</p>	<p>Motivational environment for risk-takers</p> <p>It is imperative that the public sector strives to operate so as to compensate for the lack of private capital provision in areas where there is a strong social motivation for investment, but also so as to catalyse better functioning private markets. In addition, the public sector needs to give high priority to ensuring appropriate conditions for the individual entrepreneur and risktaker – in other words, an operational risk-reward ratio for the human being who ultimately stands behind any potential high-growth venture.</p> <p>There is also a need to push reforms so as to alleviate the distortions that deter risk-taking. The risk-reward ratio confronting the individual needs to be scrutinised and improved in many cases, for example by tax reforms and initiatives to improve societal attitudes towards entrepreneurship. Necessary tax reforms that may be considered include the reduction of capital gains taxes, which could stimulate more risk-taking and entrepreneurship. This must be combined with consistent reforms that raise the ability of institutional investors to diversify sources of venture funding. There is also a need to strengthen business angel networks and their links to technology incubators and complementary support services.</p>		<p>X</p>	<p>X</p>



<p>7</p>	<p>Regulatory System</p> <p>Due to the relatively long-term investment horizons (typically five to seven years and often longer) and the uncertainties inherent in new product development, venture capital is already one of the most risk-intensive asset classes in the world. Additional delays and uncertainties caused by swings in regulatory policy, inconsistent guidelines and processes for state agency approvals and slow-moving bureaucracies can push the risk profile of even the most exciting innovation beyond what a venture capitalist can consider acceptable. A promising company has a greater chance of receiving venture funding if there is transparency around the regulatory approval process through which it will move.</p> <p>National and regional authorities should secure a reasonable, efficient and predictable regulatory environment including full transparency of the approval procedures.</p>		<p>X</p>	<p>X</p>
<p>8</p>	<p>Entrepreneurial Culture</p> <p>Strong investor protection leads to liquid capital markets and deal flow and exit opportunities, which ultimately affects the attractiveness of a country's VC markets. This ultimately affects a country's attractiveness for institutional investment in the VC class. However, this discussion reflects the capital supply side only.</p> <p>In order to increase the demand for venture capital, sufficient entrepreneurial culture and entrepreneurial opportunities, with flexible labor markets, less bribery and corruption are needed to establish a vibrant VC market.</p>		<p>X</p>	<p>X</p>
<p>9</p>	<p>Need for entrepreneurship education</p> <p>Most VC investments in emerging markets go to revenue generating or profitable companies rather than early-stage ventures. One important barrier to developing vibrant early-stage investment in emerging markets is the dearth of entrepreneurship education in their engineering and science schools. Early-stage VC investors also shy away from seed or start-up companies when the founders lack an understanding of how to start, build and grow a substantial company. It is simply too much work for investors to engage first-time teams.</p> <p>Building an entrepreneurial curriculum into science and engineering education should be considered as important as building incubators.</p>		<p>X</p>	<p>X</p>



<p>10</p>	<p>Facilitating forward and backward linkages</p> <p>Governments can facilitate forward and backward local linkages from subsidized firms, and they can also foster spin-off entrepreneurship, appropriately constrained by intellectual property protection. Yet, there is a role as well for global governance, particularly (as in the case of high skill migration) with respect to smaller countries that lack the leverage to impose conditions on foreign investors.</p> <p>Global norms and rules need to be devised that would enhance the odds of domestic or intra-regional spillovers.</p>	<p>X</p>	<p>X</p>	
<p>11</p>	<p>Enhancing cross-border activities</p> <p>In recent years, cross-border venture capital has become an economically important phenomenon. However, while globalisation of VC activity gradually becomes a reality, a number of impediments still exist, hindering the convergence of markets and the development of a full-fledged global industry. This is true not only between developed and developing regions, but also between venture markets throughout the most collaborative regions such as North American and Europe. The ability of venture capital markets to get involved in flows of investments across borders largely depends on the maturity of the industry.</p> <p>Moreover, the lack of sufficient infrastructure prevents crossborder investments from taking place. Legal structures which are nation-specific create border-issues that are not easily trans-passed, and complicate collaboration between actors located in different countries, especially when in regard to support of high-risk ventures. Where governments are directly involved in transactions, additional issues arise. Countries and regions with heavy public venture capital involvement tend to find themselves with certain limitations in their investment strategies.</p> <p>Governments should ensure that investment policies are adapted to the ongoing globalisation process, putting in place structures and playing rules which can enable and support cross-border activities and investments.</p>		<p>X</p>	



<p>12</p>	<p>Quality of public policies</p> <p>These policies establish the playing field - they further or hinder VC activity on many levels:</p> <ul style="list-style-type: none"> — Entrepreneurship-friendly regulation (such as low taxes, little red tape, protection of property rights, a reasonable bankruptcy law) lowers entry barriers. High costs of starting a business, for instance, are a drag on entrepreneurial activity. — A liberal immigration policy designed to attract the best talents from all over the world can spark entrepreneurial activity. Many founders of hightech startups in the US were born abroad. — Research and technology policies: a high level of education and strong technological capabilities are the foundations on which the most interesting startups thrive. Co-operation with academic institutions are important sources of knowledge transfer. — The tax and legal framework governing VC activity itself is a somewhat contentious issue – not least the new AIFM directive (for an industry perspective, see the statements by EVCA). Some rules appear to be geared towards bigger buyout or hedge funds and put disproportionate burdens on smaller VC funds. <p>All of these concerns should be taken into account in determining instruments of public policies affecting VC.</p>		X	X
<p>13</p>	<p>Mutual recognition of venture capital funds from other jurisdictions</p> <p>A fund should be established and registered only in its home jurisdiction and should be recognised in other Member States and not be liable for separate registration or establishment in each jurisdiction. National authorities could recognise that venture capital funds domiciled in another country and operating in their market are already subject to regulatory and taxation regimes in their country of residence.</p> <p>Steps should be taken towards mutual recognition of the existing national frameworks that allow VC investments. This should gradually lead towards a regulatory framework that all Member States could adopt if they wish.</p>		X	X



14	<p>Creation of co-investment funds through public–private partnerships (PPP)</p> <p>Experience has shown that co-investment funds are an efficient way to leverage private sector participation in the market.</p> <ul style="list-style-type: none"> — Governments should create or increase special fiscal incentives for investments in young innovative companies, thereby stimulating the participation of a higher number of business angels in the market. — Obstacles to cross-border investments by venture capital funds through mutual recognition and a stronger and more transparent regulatory framework to conduct cross-border investments should be removed. — Lighter regulation in the early-stage investment market is essential. — Authorities should develop local financial communities and ecosystems as PPP, since they provide an incentive for investors to remain active in follow-on rounds and continue to make their time and network available to their investee companies. 	X	X	X
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15	<p>Pan-European trading platform</p> <p>Creating a pan-European trading platform and quoted market for small cap growth companies is not a trivial exercise. Previous efforts to do so – such as EASDAQ or the emergence of cross-border alliances between fledgling new markets – faltered for a variety of reasons including intense competition from national exchanges, poor timing, and a lack of financial industry support.</p> <p>EVCA has spent time talking to the various members of the ecosystem, including its own members, the stock exchanges growth companies, regional and global investment banks, and institutional investors. There is a broad consensus that it would be highly desirable to establish a pan-European trading platform and a view that aftermarket liquidity would be significantly enhanced provided that several important steps are taken.</p> <p>These include:</p> <ol style="list-style-type: none"> 5. The harmonization of listing criteria across exchanges. Specifically, standardised criteria regarding requirements for minimum total assets, years of trading history, and number of independent Directors. 6. The promotion of the cross-exchange platform through the marketing of sector indices and their inclusion in the financial press throughout Europe. 7. The involvement of additional non-domestic market makers willing to commit capital in the trading of small cap growth company shares. 8. The development of simple connectivity for investment banks in remote locations. 9. The implementation of low-cost settlement systems. 10. A streamlining of regulatory procedures for IPO filings similar to the “light touch” model adopted by AIM and more recently by Alternext. 11. Discrete and confidential listing approvals for secondary offerings. 12. The adoption of fair acquisition and minority squeeze out regulations and provisions. <p>European commission, supported by member states, should create a pan – European trading platform.</p>	X	X	X
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<p>16</p>	<p>Depth of capital markets</p> <p>A well-developed stock market that permits venture capitalists to exit through an initial public offering is crucial for the existence of a vibrant VC market. This key driver captures the size and liquidity of the stock market, level of IPO and M&A and debt and credit market activity. Venture capital firms provide temporary financial support for young businesses, but must divest their exposure and eventually return the proceeds to their investors.</p> <p>For that reason, the divestment conditions must be favorable — that is, the M&A and IPO markets should be liquid. A bank-centered capital market tends to be less effective in supporting an efficient VC infrastructure not only because it lacks a strong stock market, but also because its secondary institutions compromise entrepreneurial activity, given the bankers’ conservative approach to lending and investing and the social and financial factors that reward entrepreneurs less richly and penalize failure more severely.</p>		X	
<p>17</p>	<p>Human and social environment</p> <p>National culture shapes both individual orientation and environmental conditions, which lead to different levels of entrepreneurial activity in particular countries. This key driver incorporates the quality of education and human capital, labor market rigidities, levels of bribery and corruption and costs of crime within a nation. In order to foster a growing risk capital industry, research culture, especially in universities and laboratories, plays an important role.</p> <p>Rigid labor market policies negatively affect the evolution of a VC market. To allow entrepreneurs and VCs to harvest the fruits of their efforts, the costs and efforts needed to recruit, hire and lay off employees must not be so high as to be discouraging. Finally, the highest societal barriers and costs for start-ups in different countries are associated with corruption, crime, a larger unofficial economy and bureaucratic delays.</p> <p>These problems should be addressed more ambitiously at international, national and regional level.</p>	X	X	X



<p>18</p>	<p>Rationalizing national VC support structures</p> <p>Sometimes, founding entrepreneurs are not driven by extreme growth aspirations. In result, also due to historic differences in fiscal and social security policy, there is a shortage of high net worth individuals dedicated to business angel activity.</p> <p>Also, due to the larger role of government in the V2C space, among other reasons, the VC community is not as vibrant as in the United States. Because of the government’s policy to control for the delivery of public resources to the growth ventures, a relatively massive network of various advisory, business development, and incubator organisations – those who live off the growth company process, rather than the success of individual growth companies – has emerged in many EU countries. These institutional arrangements at national level should be rationalized.</p>		<p>X</p>	
<p>19</p>	<p>Reconsidering the role of government</p> <p>Despite significant public involvement in recent years, the role played so far by governments is highly controversial. A well-functioning venture capital industry is not guaranteed through public intervention, nor does it necessarily develop by market forces alone. Undoubtedly, there is an urgent need for governments to rethink their positions (why and how to intervene in venture capital markets).</p> <p>On the one hand, the public sector is responsible for supporting and fostering technological development. At the same time, it should be able to identify and react to market failures in order to justify intervention in venture capital markets.</p>		<p>X</p>	



Building Skills for Knowledge Economy through Implementation of University Reforms

Date: 13 May, 2011.

Location: Gorizia, Italy.

Organised by: Municipality of Gorizia and University of Trieste

	Text of Recommendation	International	Country / Region	Stakeholders
1	<p>Bologna Process and Europe 2020 - two sides of the same coin</p> <p>There is a strong link between Bologna process and the Europe 2020 Strategy. Europe will strengthen its knowledge-based global competitiveness only by successfully implementing the Bologna process, which in turn requires further adjustments of tertiary education systems capable of developing human capital required for the present and future labour market. Better performance and mutual responsiveness of the two processes will contribute - particularly at regional and local level - to overcoming the current crisis and create a solid basis for long-term, sustainable, smart and inclusive growth.</p> <p>University leaders need to make sure that academic staff will fully understand and appreciate this critically important link, and will actively contribute to the implementation of both strategies. National and regional authorities should contribute consistently to the success of this process by paying special attention to the human capital development aspects in all of their policies and regulations.</p>		X	X



<p>2</p>	<p>Understanding the true purpose and objectives of Bologna</p> <p>One of the impediments in implementing the Bologna reforms is resistance partly caused by misunderstanding or misinterpretation of Bologna process (the main claims being that academic quality is being sacrificed, pointing at some initial mistakes and bad experiences, and arguing about insufficiency of funding). The true purpose and objectives of Bologna are not yet fully understood in some academic circles, clinging to traditionalist views and outdated teaching methods, and refusing to accept the new systems which require higher and different engagement by professors, and a qualitatively different involvement of students.</p> <p>The best way to address these problems is for university leaders to approach the issues with vigour, and in open dialogue with future employers and students. The authorities have to actively and carefully monitor the progress achieved, detect delays, deviations and imperfections, and help to resolve problems encountered. It is also important to involve the general public by informing it on the benefits of the process and popularise best practice cases.</p>	<p>X</p>	<p>X</p>	<p>X</p>
<p>3</p>	<p>Higher policy and funding priority for best investment in our future</p> <p>Tertiary education is critical for improving human capital in modern society and the Bologna Process is the right response to the challenges Europe is facing in a globalised world. In this decade about 40% of all new jobs in Europe will require tertiary education. It seems that most governments are slow in fully appreciating the implications of these historical changes and fail to react accordingly.</p> <p>Irrespective of declared policies and adopted documents most governments fail to secure the necessary public funding, which is a reflection of their actual treatment of the domain of education. Furthermore, due to the present global crisis, in several countries public funding of tertiary education is even decreasing. The importance of understanding this by the public and proper prioritising by the authorities is demonstrated by Nordic countries (they spend on education 20 to 40 percent higher share of GDP than EU average). A shift in mindsets is needed here: funding education is not just budgetary spending, but actually a most important, strategic investment and should be treated as such, thus reversing the present negative trend and increasing the GDP percentage devoted to tertiary education.</p> <p>Policy and opinion makers should contribute to the appreciation of investment into education being equal, if not even more important, than conventional investment into bricks, machinery and installations.</p>	<p>X</p>	<p>X</p>	<p>X</p>



4	<p>Alignment between NQS and EQF</p> <p>Alignment between National Qualifications Systems and of Assessment/Quality Assurance Systems, linked to the European instruments such as European Qualification Framework (EQF), should be ensured on priority basis. It is necessary to create, adapt and develop new assessment methods and tools to capture and reflect the complexity of hard and soft skills and competences of students.</p> <p>In order to ensure the involvement of all actors, employers and social partners, an outcome-based qualifications and a common language between education/training and the world of work, should be developed. The use of learning outcomes in planning and delivering educational and training programmes at all levels, including tertiary education institutions, should be encouraged and facilitated.</p>	X	X	
5	<p>The role of quality assurance</p> <p>The existing quality assessments should focus on adequate in-depth level measurements rather than checking whether institutions provide the appropriate sentences on paper about the level of their study programmes. The quality assurance agencies have to focus on contents rather than procedures and have to be genuinely independent and not semi-independent from governments or universities, as too often appears to be the case. The international character of evaluation panels should be the rule rather than the exception in assessments, to guarantee that the same level requirements are valid beyond national borders. On the other hand, external quality assurance agencies also ought to diversify their assessment procedures, so that, based on proven merit, particular institutions can be considered quasi self-accrediting institutions and serve as standards.</p> <p>The inevitable outcome of more thorough master level assessments will probably be that some of the present master degrees have to be transformed into postgraduate certificates for bachelors.</p>		X	X



6	<p>Pedagogical skills for modern tertiary education</p> <p>European tertiary education is still largely relying on traditional methods of teaching which creates a heavy burden on professors and students without adequate results. This is partly the consequence of lack of pedagogical skills. An excellent expert doesn't automatically make a good professor. In Finland, pedagogical skills of professors are regularly assessed for evaluation of their professional performance.</p> <p>Tertiary education institutions should increase their efforts to train teaching staff on modern methods of pedagogy, knowledge transfer and development of skills in order to reach a qualitatively different relationship between professors and students, being true partners in educational process.</p> <p>The learning sector is not only a provider of skills, but also an employer with obligation to develop and update the skills of its personnel. Regional and national authorities should take this into account in determining procedures of accreditation.</p> <p>The need for more practice-oriented teacher education programmes should be recognised and enhanced. A European competence framework for teachers should be developed to monitor its implementation and strengthen the exchange of good practice on teachers' professional development.</p>	X	X
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7	<p>Developing EHEA through closer university collaboration</p> <p>European, national and regional authorities should undertake all necessary measures to harmonise to a higher degree tertiary education activities throughout Europe, and actively encourage all forms and instruments of collaboration among institutions of tertiary education.</p> <p>Further success of European integration does not only depend on advancing the single market and its regulatory harmonisation. It is equally important to accelerate the development of European Higher Education Area which will facilitate mobility of students and professors, contribute to higher quality and stronger international standing of European universities.</p> <p>All responsible actors in particularly university leaders should increase efforts to facilitate and enhance mobility, create greater transparency, and encourage fair competition at the fragmented European tertiary education environment, leading to higher quality and better performance.</p> <p>Encouraging universities to develop further their own specific and increasingly varied research and innovation profiles in line with their own specific missions will support inter-university collaboration and the development of EHEA.</p>	X	X	X
8	<p>Closer collaboration among business, academia and regional/local authorities</p> <p>Closer interaction between tertiary education institutions and regional authorities can contribute to Bologna process through stronger orientation of the institutions on domains and technology areas particularly relevant to the region and thereby creating a strong basis for productive collaboration (curricula development, funding, research priorities, policy inputs, etc) without compromising the autonomy of educational institutions.</p> <p>Companies, universities and regional/local authorities should strengthen their relations and interact effectively, according to the triple helix model, with medium/long-term perspectives. They should recognise this partnership as a shared responsibility and great opportunity for mutual benefit, particularly by developing new innovative methods of cooperation.</p> <p>Closer collaboration and indeed partnership among business and academia is particularly important and sometimes easier to establish at the regional and local levels, involving regional/local authorities and relevant stakeholders.</p>		X	X



9	<p>Private funding of tertiary education should be essentially enhanced</p> <p>European tertiary education cannot compete successfully at the global level relying only on public funding. In Europe private funding to education currently represents only 0.7 percent of GDP (in US this share stands at 2.4 percent). Inadequacy of funding levels is most clearly demonstrated by data on education funding per full-time pupil: EU-27 with €5,650 PPS vis-à-vis US with €10,661.</p> <p>Stronger engagement of the private sector should be encouraged and generated by effective fiscal and tax incentives offered by the government, as well as adequate public awareness activities.</p> <p>Employers should be encouraged to co-invest and participate in the activities of education and training institutions in professional or governance and advisory board roles.</p> <p>Efficiency in using public funds for tertiary education should be promoted and better presented to the funding institutions in order to obtain more funding.</p>	X	X
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10	<p>Curricula development for greater employability of graduates</p> <p>Young generations have legitimate expectations to have access to adequate education and employment. However, one of the key problems of tertiary education remains slow pace of adjustment of curricula to rapid changes in the economy and civil society at large. Too often curricula are not sufficiently linked to practical life and requirements of present labour market.</p> <p>Potential employers are therefore often reluctant to hire fresh graduates since they are aware that they will have to wait considerable periods of time before their new employees will be able to perform independently, without the support of senior advisors and mentors.</p> <p>The right incentives to intensify cooperation between the providers of education, training and businesses should be offered by regional and national authorities. The coherence between instruments and measures (such as the definition of curricular standards, including appropriate formulation of learning outcomes, mechanisms of assessment, evaluation and managing quality, the training and continuous professional development of educators, and institution leaders) should be enhanced.</p> <p>The capacity to anticipate future skill requirements, using a combination of different methods at international and national level in a coordinated way, combining skill supply and demand forecasts with qualitative information on actual skills needed (e.g. EU-wide employer surveys, sectoral studies and scenarios, advisory sectoral bodies and/or groups of experts analysing emerging, evolving and changing occupations and labour market conditions) should be improved. This implies good quality statistical data on jobs and skill/competence requirements, at all levels.</p> <p>Sectoral Councils, bringing together existing national networks for the analysis of the skills needs and the development of proposals for updated qualifications in each sector, and a new and specific body representing all key stakeholders of the learning sector should be created.</p>	X	X	X
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11	<p>Support for excellence, openness, and higher mobility</p> <p>There is an endemic lack of excellence in many universities, leading to brain drain and making them internationally far less attractive than in the past. Another typical weakness of universities is often lack of general openness which works against quality and excellence.</p> <p>Through funding and other instruments authorities and other institutions need to encourage and facilitate more mobility of students and professors. EU programmes and tools (such as: Europass, Marie Curie, Leonardo da Vinci, Erasmus) certainly contribute in overcoming these setbacks and they should expand further. At the same time all the remaining obstacles to mobility (for example lack of interconnection between universities and unsatisfactory mutual recognition of titles and curricula) should be removed. Without enhanced and geographically more balanced mobility the process of developing the European Higher Education Area is going to take too much time. The possibility of developing a European Mobility Treaty in order to place international students on an equal basis with national students should be examined.</p> <p>With the support of authorities and in closer collaboration with interested stakeholders, universities should make bigger efforts to overcome this state of affairs by addressing the issues more effectively in order to achieve higher levels of excellence and better international standing.</p> <p>Attention should be given to developing the dormant mobility potentials at doctoral and master level. According to Coimbra Group's Position Paper on Doctoral Programmes, mobility at doctoral level should become a compulsory ingredient in research training. Co-operation among departments on thesis work carried out by exchange master students may foster reciprocal exchanges of knowledge among research groups and open new co-operation paths. University networks such as the Coimbra Group can clearly be instrumental in promoting increased mobility.</p>	X	X	X
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12	<p>Universities and Life Long Learning</p> <p>People of all ages should be stimulated to participate in education and training process, according to the principles of Life Long Learning (LLL), either to achieve the highest level of competencies and skills for their future jobs, and/or to engage in continued training in order to develop and update their competencies, skills and qualifications for the current needs of the labour market.</p> <p>Though this is primarily in the interest of each individual, modern circumstances require systematic and sustainable activity of the community, as well as the employer in stimulating people for lifelong learning, and developing specific competitive skills and competencies. Among concrete instruments, learning vouchers and learning accounts are promising new experiences successfully tested in several countries.</p> <p>Recognising the university contribution to lifelong learning as a major benefit to individuals and society is needed. Governments have a responsibility to ensure that universities are valued for their contribution to lifelong learning, and that this is not perceived as a minor addition to the conventional roles of universities. It is a major cultural shift to respond to the demands of a fast evolving lifelong learning society and of long-term labour market needs, and requires significant financial investment.</p> <p>Like universities, governments can set standards in society by acting as role models for the policies which they adopt and promote. Governments should ensure that public sector employees therefore are encouraged to benefit from the range of lifelong learning opportunities offered by the universities and other providers.</p>	X	X	X
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<p>13</p>	<p>Preparing an innovative, critical student mindset before university</p> <p>Bologna-inspired changes in tertiary education require an inquisitive, innovative, open, and critical mindset of the student, but this cannot be encouraged and developed successfully at the university level, unless students have been guided and coached in this direction already by their secondary school teachers.</p> <p>Education authorities and secondary school principals should pay particular attention to the approach applied by secondary school teachers in achieving this primary pedagogical objective in a systematic and consistent way.</p> <p>Irrespective of whether services are delivered within or outside tertiary education institutions, governments have a responsibility to ensure high professional standards. Governments also need to ensure that guidance, careers and counselling services are linked up in a lifelong learning perspective to provide continuous support to citizens at all levels of education. This support should be relevant to students of all ages, and from all social and cultural backgrounds.</p>	<p>X</p>	<p>X</p>
<p>14</p>	<p>Public Employment Services Profiling Systems</p> <p>Education opportunities and offers including prices should be published on the web, in a user-friendly and comparable format, enabling interested individuals to make informed choices. The Public Employment Services profiling systems should be further developed and made accessible on the internet, including skill-based matching tools such as EU's 'Match and Map'.</p> <p>Further development of employer collaboration networks (such as CareerCon of EUNet) to share information and good practices in skills development and skill use should be encouraged.</p>	<p></p>	<p>X</p>



15	<p>Threats of monopolistic tendencies</p> <p>In response to scarcer public budgets, a rationalization of the supply side of the higher education market has taken place. The resulting increase in the scale of universities has however generated the danger of creating monopolies.</p> <p>The enormous increases in scale and monopolistic practices have gone hand in hand with huge increases in overhead and capital expenditures leading to substantial falls in resources for teaching. Such monopolies tend to reduce quality ('grade inflation'), ignore demand of students and employers, and increase overhead costs. Monopolistic price setting drives up tuition fees and lowers quantity and quality of classes, especially if the price elasticity of demand is low.</p>		X	X
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Regional Innovation Policy

Date: 20 May, 2011.

Location: Drammen, Norway.

Organised by: County of Buskerud

Text of Recommendation	International	Country / Region	Stakeholders
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1	<p>Regional Development Strategy based on Innovation</p> <p>Innovation has been recently recognized as the heart of a proactive regional development agenda, most directly linked to improving productivity and strengthening knowledge-based competitiveness. In OECD countries, on average, 2/3 of public investment is performed by regional and other sub-national entities which should be focused more on supporting innovation.</p> <p>Regional authorities and stakeholders should take more initiative and responsibility for designing innovation policies, creating necessary support environment and improve implementation mechanisms of regional development strategies.</p>		X	X
2	<p>Options and Key Instruments of Innovation Policy</p> <p>While building efficient and smart policy mixes, besides science and technology, also entrepreneurship, job training and adequate education policies should be their integral part. Policy instruments should target knowledge generation, diffusion and exploitation, or multiple objectives, simultaneously using more systemic approach with policy packages offering complex services intended to encourage knowledge economy.</p> <p>There are three possible general strategic approaches for regions:</p> <ol style="list-style-type: none"> Building on current advantages with an emphasis on scientific research, and RTD, or a mix of the two, while leaving room for experimentation and diversification into future models; Supporting socio-economic transformation by recognizing its relevance and then by reconversion or identification of a new frontier in order to readjust to global trends, with a special emphasis on the use of the human capital and productive use of regional traditions and accumulated knowledge; Catching up on the basis of the creation of knowledge-based capabilities is relevant for regions lagging behind in income per capita, productivity growth and employment generation, and suffer from the absence of high value-added economic activities and general lack of infrastructure and relevant services. 			X



3	<p>'One-size-fits-all' policy to be avoided</p> <p>Each region has some innovation potential but existing differences in location, knowledge base and institutional structure have to be fully appreciated and taken into account. Because of regional diversities, it would be wrong to apply a 'one-size-fits-all' policy and simply copy the models of best practices (like Silicon Valley).</p> <p>Accordingly, there is a need for tailor-made policy strategies, geared towards specific potentials, and focused on tackling specific bottlenecks in each region. As a result, regional policy needs to evolve, capitalising on region-specific assets, rather than selecting from a portfolio of specific policy models.</p>		X	
4	<p>Embedded Innovation</p> <p>A territorially embedded regional innovation network has to sustain the competitiveness of economic operators in the system/region. This is especially true for SMEs. Thus, it is not possible to fully rely on localized learning and tacit knowledge (as well as localized, codified knowledge), which must in many cases be complemented with formal R&D-competence. For this type of RIS, it is important that the regional actors develop external linkages and not only cooperate within the region.</p>		X	



<p>5</p>	<p>Regionalization vs. Regionalism: Policies for smaller regions</p> <ul style="list-style-type: none"> □ For regional innovation policies to be meaningful the regions already have either one or several clusters of SMEs or one or several larger leading companies surrounded by clusters of suppliers and/or customers. □ Since most small and medium-sized regions usually do not have public research institutions, developing strong links to research universities in other regions are of paramount importance. □ For those small and medium-sized regions that have one or several institutions of higher education, it is important to take special measures to adapt the educational profile to fit the needs of the region and of its innovation networks. □ Problems to recruit qualified personnel are impeding regional innovation systems in many small and medium-sized regions. Special measures are necessary to facilitate the recruitment of qualified personnel needed. □ Since many innovations are best realized within new firms, broad support to new entrepreneurial ventures is essential for maintain viability of entrepreneurial environment. □ As conditions in each region differ, it is necessary to decide on changes in regional innovation policies after thorough independent studies of the existing regional innovation system, ways of its functioning, including weaknesses and strong points. □ Administrative and functional regions normally do not coincide. Since the functional regions are actually the relevant ones, it is necessary to approach regional innovation policies in the context of functional regions. 		<p>X</p>	
<p>6</p>	<p>Functional Linkages</p> <p>The relevant linkages in the innovative process are not necessarily geographically determined. Therefore, a cluster-oriented business development policy should be wider in scope than its geographical base. In particular business service agencies or innovation mediators should serve as local knowledge anchors transmitting new technology into the local business environment.</p>		<p>X</p>	<p>X</p>
<p>7</p>	<p>Role of Universities</p> <p>The role of universities in regional development is attributable to two key effects:</p> <p>First, universities develop basic science as well as deliver RTD products, often in cooperation with private businesses.</p> <p>Second, they – unlike research institutes – bring in talented students, building up local competent workforce and thereby increase region's attractiveness for economic operators and investors.</p> <p>Innovation policies and instruments should invite and engage firms and knowledge organisations in helping to develop a regional innovation strategy, to create other nodes for local cooperation between business and academia, as well as to provide bridges between firms and technological and knowledge resources.</p>			<p>X</p>



<p>8</p>	<p>Innovative Regions and TNCs</p> <p>Regions ought to bind the units of Transnational Corporations (TNCs) more strongly to their local economic environment, thereby upgrading local suppliers. It is their interest to upgrade local knowledge organisations and develop regional ‘club goods’ which will intensify the motivation of TNCs for operations in the region. TNCs may then find it profitable to maintain and further develop some activities, including innovative activities, in what may become a dynamic regional innovation system.</p> <p>In such circumstances the local TNC unit will gain bargaining power within the corporation for additional activities and investment, benefiting from local innovation potential.</p> <p>Corporations may even tap the knowledge base of such a region, i.e. the knowledge intensive region becoming a ‘listening post’ for relaying back product development and marketing information to the TNC.</p> <p>Regional and national authorities should support such collaborative patterns in innovative activities between local companies and TNCs, and offer them advice on strategic negotiations.</p>			
<p>9</p>	<p>Smart specialisation strategies</p> <p>Regions ought to concentrate resources on few key priorities rather than spreading investment thinly across areas and business sectors. Such strategies should become a key element in developing multi-level governance for integrated innovation policies. Moreover, they have to be closely linked with other policy domains and require an understanding of regional strengths relative to other regions and of the possible gain for interregional and transnational cooperation.</p> <p>Smart specialisation strategies should contribute to more effective use of public funds and should stimulate private investment.</p>		<p>X</p>	<p>X</p>



<p>10</p>	<p>Innovation-friendly business environments for SMEs</p> <p>A thriving SME sector is essential for growth, jobs and innovation and finally for cohesion. SMEs are central to the EU economy: some 20 million of them account for almost 60% of value added and two-thirds of employment in the private sector. Over 92% are micro firms employing fewer than 10 people.</p> <p>The ERDF funding in 2000-2006 allowed the creation of at least one million jobs and increasing investment in research and innovation. There should be more extensive use of loans, equity finance and other forms of financial engineering in favour of SME. Regional and national authorities should thus support innovation-friendly business environments to assist SMEs, R&D intensive ones especially, and the creation of new firms.</p>		<p>X</p>	
<p>11</p>	<p>Encouraging labour mobility and lifelong learning</p> <p>Since most labour mobility takes place at the regional level, policy promoting labour mobility may enhance knowledge transfer and innovation at the regional level. Since labour mobility may take away the incentive of firms to invest in their personnel, public policy should invest heavily in education and lifelong learning. If not, individuals do not have the capability to confront new changes and to move from one job to the other.</p> <p>Many universities in the EU are helping to commercialise research by increasing the entrepreneurial mindset of students and by collaborating with regional firms in innovation, so becoming more strongly involved in regional economic development. More cases of this kind are needed.</p> <p>University leaders should encourage more collaboration in various forms with regional business environment and more professor and student mobility in line with the objectives of the Bologna Process.</p>		<p>X</p>	<p>X</p>



12	<p>Spill-over effects</p> <p>Knowledge will spill-over more intensively when regions are endowed with related industries that share a knowledge base – leading to economic branching in regions through spinoff dynamics, labour mobility and networks.</p> <p>Due to the systemic nature of innovation processes, regions also require a critical mass of organizations that meet the following conditions: (1) being well connected, which enables flows of knowledge, capital and labour; (2) ties, not too strong, and not too focused on the region, avoiding problems of lock-in; and (3) local organizations and institutions to be flexible and responsive to new circumstances, overcoming inertial tendencies due to habits, routines and path dependency.</p>		X	X
13	<p>The ‘Open Innovation’ concept</p> <p>Innovation concept must be embraced by businesses in the region to increase productivity and also for competitiveness in global markets. The requirements for successful networking should not be underestimated and business to business cooperation needs to be fostered.</p> <p>Businesses need to extend their sources of new knowledge and this should be broad ‘Knowledge Exchange’ rather than just ‘Knowledge Transfer’. Access to finance is a fundamental requirement for entrepreneurs and businesses to develop and market innovative concepts. There are many stages required in this development but ‘Proof of Concept’ funding is an essential early component.</p>			X
14	<p>The importance of EU Initiatives</p> <p>The EIT has an important contribution to play in the European innovation landscape. Education, training and lifelong learning, as referred to in the Europe 2020 flagship ‘Youth on the Move’ and in the “New skills for new jobs” initiative, are vital to developing regional capacity to innovate. Focusing school, vocational and higher education curricula on transversal competences like creativity, entrepreneurship and initiative will help young people to develop their full potential for innovation. More projects to support effective cooperation between all types of education, training institutions and businesses should be promoted by the ERDF.</p>	X		X



15	<p>Key Innovation Policy Objectives</p> <p>The experience of European innovation policies has demonstrated that successful innovation performance should follow these broad objectives:</p> <ul style="list-style-type: none"> • Improve innovation governance and strategic intelligence for policy making; • Foster an innovation friendly environment; • Higher quality of demand-driven education, human capital development including respect for gender issues; • Public and private support for the development of research infrastructure; • Protection and commercialization of intellectual property; • Encouragement of technology development and knowledge exchange among business and academia through clusters, centers of excellence, science and technology parks, competence centers, and other innovation poles; • Promotion and support in the creation and high-growth of innovative enterprises; • Intensify entrepreneurial education, particularly within secondary and tertiary curricula; • Provision of sufficient levels of venture capital. 		X	
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16	<p>Promoting Gender Equality in Research and Innovation</p> <p>High-quality research and innovation requires diversity of ideas and perspectives. This can be facilitated and strengthened by full use of talent and skills of both genders. Besides full respect of adopted democratic principles, gender balance is of key importance to strengthen the quality of research and innovation.</p> <p>Research institutions need to become attractive places to work, and develop effective systems for career development for both women and men. Corporate leadership must ensure that each individual employee is acknowledged and receives support in achieving their legitimate professional aspirations.</p> <p>Preferential treatment of women is necessary and fully justified to overcome historical inequalities and secure really equal opportunities. One of clearly effective instruments to achieve this goal is the gender quota for company boards and other decision-making bodies. The Norwegian success with quotas is a very encouraging development, having inspired several European countries and regions (e.g.: Germany, Belgium, Catalonia).</p> <p>In order to achieve gender balance in research and innovation, all actors (including NGOs) should support the needed legislative, political and corporate efforts in this direction.</p>	X	X	X
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