



REINVENT EUROPE

FROM A KNOWLEDGE SOCIETY TO AN INNOVATION SOCIETY

THROUGH INNOVATION

*“We propose to base EU action around **compelling social challenges**, to finance venture and social **innovation funds**, to incentivise large scale **community level** innovations, to **transform the public sector** and to unlock the potential of new **infrastructure** and new types of **partnerships**”*



The Business Panel on future EU innovation policy was established by DG Enterprise and Industry of the European Commission with a mandate to recommend priorities and actions for future EU innovation policy.

The members of the Panel are:

Diogo Vasconcelos (Chair), Distinguished Fellow, Cisco Systems International

Dr Anne Stenros, Design Director (Vice President, Design), KONE Corporation

Gianfranco Corini, President, NEXT-Ingegneria dei Sistemi S.p.A

Professor Rüdiger Iden, Senior Vice President, BASF SE

Jan Lamser, Member of Board of Directors and Senior Executive Officer, CSOB Bank
(member of KBC Group)

The panel was supported by a rapporteur: Professor Maureen McKelvey, Professor of Industrial Management, School of Business, Economics and Law, University of Gothenburg.

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The ideas presented in this report are those of the panel and do not reflect the official position of the European Commission Directorate General for Enterprise and Industry.

To find out more visit:

The Innovation Policy homepage:

<http://ec.europa.eu/enterprise/policies/innovation/>

The Innovation Unlimited online debate:

<http://blogs.ec.europa.eu/innovationunlimited/>





REINVENT EUROPE THROUGH INNOVATION

From a knowledge society to an innovation society

Innovation has been a central EU priority over the last decade. But the **priority has been investing in knowledge rather than utilizing it rapidly and powerfully for societal benefit** and development. Innovation is global, with increasing competition for best ideas and applications, and Europe must stand out. More technology is not the solution. Current European innovation policy fails to:

- Leverage the power of networks and social innovation
- Implement Community level actions orchestrated around major societal challenges
- Invest ambitiously and strategically in the future
- Open up innovation to the creativity of a broad range of people and ideas
- Anticipate the new institutions and processes that will drive future innovation

The ideas presented here were co-created through many discussions, both in person and virtual, that we held over the last months. **We hope that it is only the beginning of a wider movement to reinvent Europe through innovation.** Our dream is a new star to the European flag – ‘The Sea star’ – which demonstrates a decentralised, self renewing, and connected innovation policy building on the unique diversity of an enlarged Union.

We urge the incoming European Commission to base its new innovation policy on five propositions:

1. Broaden the concept of innovation: Business innovate mainly for return on investment,

society must innovate for social return and transformation. **Europe faces unprecedented challenges.** This calls for collaborative, cross-cutting responses reaching out to business, public policy communities, researchers, educators, public service providers, financiers and NGOs.

We propose to base EU action around compelling social challenges, to finance social innovation funds, to incentivise large scale community level innovations, to transform the public sector with a budgetary innovation target and to engage the young and the old in new types of partnerships.

2. Speed and synchronisation: Speed and scale are everything in innovation. More is needed to speed up the uptake of innovative solutions and technologies, especially in the public sector. Funding programmes and innovation support must be synchronised with development of standards, public procurement and regulations.

We propose that the EU sets clear innovation targets; launches ambitious European initiatives with synchronised actions around major challenges; ensures EU directives and regulations support innovation; changes public procurement to support innovation; and opens up government owned data to facilitate a knowledge infrastructure, where European citizens can help transform public services.

3. Invest in future infrastructure and unlock its potential: Europe needs to create and unlock the potential of new digital

and energy infrastructure. Every household, business and public building should have ultrafast broadband and smart energy grid connections.

We propose that the EU commits to universal access to ultrafast broadband and smart grids; implements an integrated, cross-border investment strategy; and combines infrastructure projects with support for innovative services and open access.

4. Innovative financing models:

Europe needs a radical new approach to financing innovation with new partnerships to share risk and more intelligent ways to combine funding between instruments. **Innovation should be core to financial institutions**, with the European Investment Bank (EIB) becoming a European Innovation Bank.

We propose a major development of the European Investment Fund (EIF) to create a pan-European Innovation Fund; develop an EU wide market for trading and sharing Intellectual Property; and broker bolder investment readiness initiatives.

5. New places for new types of collaborations.

Innovation feeds on collaboration, **the spark and confrontation of different ideas, perspectives and experiences.** Information technologies and web 2.0 tools are transforming how people interact. Open innovation is based on the power of networks and access to knowledge across Europe and globally.

We propose to create and network innovation labs; invest in cultural and creative institutions, organisations and networks; reinforce the role of brokers and intermediaries; develop a major prize for innovative localities; and stimulate universities and public research centres to be more open and international.

The ideas in this report were co-created through a series of meetings by the panel and involved external thought leaders, as well as an online consultation: "Innovation unlimited" at <http://blogs.ec.europa.eu/innovationunlimited/>. These discussions were an inspiration for us, and we encourage the Commission and the community of all those who contributed to continue this debate.

Our proposals require urgent action and **we call on European leaders to start this process with rapid agreement on ambitious, concrete and timely measures** within the proposed new European Innovation Act and in the Spring 2010 European Summit.

Brussels, October 2009

Diogo Vasconcelos, Gianfranco Corini, Rüdiger Iden, Jan Lamser, Anne Stenros

Comments received on this report

Innovation comes from people being able to combine their different ideas, skills and assets to create new recipes for how we make products and provide services, in both the private and the public sector. Increasingly this process of combination involves consumers as participants or even instigators of this process. Innovation is driven by creative collaboration as much as by competition, it is something you do with people rather than to them. This report - incisive, imaginative and inspiring - captures the essence of this approach and so is essential reading for anyone who cares about Europe's future.

Charles Leadbeater, Leading author on innovation and creativity

Innovation has a new geography. Many nations and regions are now racing for a new high ground in which the capabilities for innovation – defined in such terms as human capital, investment, quality of ideas and stance to the future – matter more than ever. This excellent report represents a landmark shift towards an integrated strategy and narrative that will enable a truly European approach to innovation. It will be required reading as innovation continues to rise to the top of the public, private and societal agendas.

John Kao, Chairman, Institute for Large Scale Innovation

This report will undoubtedly be remembered as a turning point in EU innovation policy. Never before has a group of eclectic thought leaders and successful practitioners been so frank in their diagnosis, so forward-looking in their prescription and so caring for Europe's collective future – a future that is ours to shape, and that must be built on a holistic endeavour of societal renewal. Indeed, this clarion call for change could not come at a more suitable time, with the world mired in recession and Europe running the danger of becoming more risk-averse at exactly the moment when we need to be more innovative, more experimental, more daring. This blueprint is the first of its kind that not only provides a strategic vision but also a concise plan, as well as an intricate understanding that 21st century innovations can only thrive in a collaborative, open and interdisciplinary space where new ideas are celebrated and bold entrepreneurial activities rewarded.

Ann Mettler, Executive Director and Co-founder, The Lisbon Council

The Business Panel's recommendations speak to all European citizens, not just to policy makers or entrepreneurs. It invites all of us to seek positive change and innovation across our societies and communities, through new and open partnerships, not just in the business or technology sector. It addresses our major societal challenges such as aging, globalisation or climate change as new opportunities for sustainable growth and enhanced well-being. In summary, it provides a fresh and new vision for Europe's future through wider and more ambitious innovation.

William Stevens, CEO & Founder, Europe Unlimited

Over the last two decades Europe has struggled to align the best of its social models with the needs of a rapidly transforming economy. This report provides an inspiring, ambitious and very necessary part of the answer. It shows how Europe can orchestrate and accelerate innovation not just in the more familiar space of high technology but also throughout society. And it shows how Europe's unparalleled success in providing its citizens with opportunities, security and justice, can be sustained in an era of ageing populations, global warming and much greater diversity. Over the last year, other parts of the world have shown how even the most profound crisis can be turned into an opportunity. Here the Business Panel is providing exactly the kind of fresh and strategic thinking which Europe needs if it is to do the same.

Geoff Mulgan, Director, The Young Foundation

By its very nature a strategy for innovation is never accomplished and can be put in a drawer. Innovation strategies ask for permanent adaptations, continuous future-oriented revisions as well as a pluralistic discussion of its missions. This holds for companies, for regions, for national economies and even more so for the European Union as a supranational entity with an outstanding responsibility for the creation of a prolific vision targeted by its institutions, member countries and citizens. This report has to be considered as a milestone for the development of a future-oriented innovation strategy in the European Union with major and qualitative thought-provoking impulses. By considering innovation as a comprehensive process encompassing the whole European society – focussing on the entrepreneurial spirit of citizens, companies, the public sector, policy makers and NGOs – and asking for innovative collaborative means of coordination, this report creates essential prerequisites for the design of promising conditions concerning the transformation of Europe towards a knowledge-based and future-oriented economy.

Andreas Pyka, Professor in Innovation Economics, University of Stuttgart-Hohenheim; President of the
Lisbon Civic Forum

We, as a network of European third sector leaders, welcome the recommendations of the Business Panel on the future EU innovation policy. For the first time the social dimension of Europe is recognized as a source of innovation, and no longer a synonym for extra cost. The third sector is acknowledged as a stakeholder in the European economy, on an equal footing with business and public administration. Therefore the EU is called on to give a concrete commitment, through further social investments and cooperation with civil society networks. This is a unique opportunity to reconnect the European project to those citizens who have felt left behind. We hope the recommendations will be adopted to guide the EU through 21st century challenges, putting citizens in the driving seat.

Filippo Addari, Executive Director of Euclid Network

The report by the Business Panel on future EU innovation policy outlines in clear and certain terms the social innovation imperative. In Europe, we have a longstanding culture of innovation and a commitment to creativity as a core tool for prosperity and social cohesion. The opportunity now is to build on these assets and develop new tools, collaborations and approaches, so we become global leaders in social innovation and thus pioneers in addressing the issues of our time and the issues of tomorrow. The report's emphasis on enabling and cherishing creativity as an imperative for innovation, and its assertion of the need to collaborate to create, mark a new stage in EU innovation thinking. The opportunity now is to translate this to EU innovation policy.

Tom Fleming, Consultant on creativity and economic development

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1) Why Reinvent Europe through innovation?

Reinventing Europe means moving from a knowledge society to an innovation society. For EU policy, this means going beyond the focus on more R&D and technology to how an innovative mind-set can trigger broader systemic changes in society and the economy. For citizens, this means unleashing the potential of a broad range of ideas to solve real problems, to find real solutions.

People centered innovation is crucial in our way of thinking about policy, actions and instruments. It means that public policy can link people to opportunities, infrastructures, competencies and incentives. Innovation policy to reinvent a new Europe in the future will involve many actors. It is not about the government running or doing things alone.

Many countries and regions are developing innovation policies, with fast developments in emerging economies such as China and Brazil. This presents new opportunities for Europe, but also the need to clearly position Europe in a global innovation system.

The European flag needs a new star – ‘The Sea star’ – which symbolises an innovation policy that is decentralised, self renewing, and connected; and which builds on the unique diversity of an enlarged Union in an increasingly competitive and globalised world.

Innovation has been a central EU priority over the last decade, repeatedly supported by European leaders and backed by numerous strategies, funding programmes and assessments.

But Europe has not achieved its full goal of being the most competitive global knowledge economy and is not investing effectively or appropriately in the infrastructure, competences, creative environments and businesses needed for 21st century innovation.



What is innovation?

Traditional concepts of innovation, for example from the OECD Oslo manual, define innovation as new or improved products, services, processes, or improved organisational or marketing strategies.

We use John Kao's definition of innovation as "the ability of individuals, companies and entire nations to continuously create their desired future." Innovation Nation (2007).

Public support for innovation is primarily provided through complex, slow and uncoordinated programmes. Private finance mainly backs the same low risk investments. Thus people, entrepreneurs and companies with ambitious and creative ideas find limited support and numerous barriers.

Broader public policy and public services in particular take little advantage of the power of innovation to transform society. Many parts of the enlarged Union are left under-utilising their innovation potential.

The current economic situation and looming new realities - like Europe's rapidly ageing, increasingly intercultural society and fast developments in other regions of the world - only amplify these weaknesses and make the need for radical change more urgent.

Europe must create an innovation society where knowledge is utilised rapidly and powerfully for societal benefit and development. This requires a systematic transformation from fragmented, single issue, closed approaches favouring large incumbents to networked, flexible and open approaches favouring new entrants and ideas. We call on European policy makers – the European Institutions, national and regional governments – to support this transformation.

Therefore, we propose to base EU actions around compelling societal challenges. As John Kao puts it, these are wicked problems with no simple definitions, solutions, or metrics. They require large scale community level actions involving many actors. To mention a few of these grand societal challenges:

► Climate

Europe has set a target to reduce carbon emissions by 20% by 2020, but this is only a first step. Major transformations are needed in our infrastructures, mobility and working patterns, interactions, behaviours and beliefs.



From innovation unlimited:

"I have had the opportunity to work at a large number of companies as an operational manager or a consultant. It is striking to see that in certain companies, there are more people in charge of stopping innovations (for example in the legal, purchasing, finance, HR departments...) than people pushing it..."

"In order to ensure that innovation targets are identified and respected, we think that a clear institutional leadership is essential. EU innovation strategy should be an overarching task for the European Commission President - a high level champion that could energetically and synergetically drive the innovation needs..."
Cefic Research & Innovation.
<http://www.cefic.org>



**India, Brazil,
South Africa**

**Nanotechnology Initiative
(IBSA)**

IBSA, a joint project of the departments of science and technology in Brazil, India and South Africa, promotes research collaborations between scientists working on applications of nanotechnology. Its priority fields of research include health, water treatment and agriculture. India leads its flagship project on water purification.

▶ Ageing population

An increasing share of Europe's population is over 65. Fundamental changes are needed, in social security and pension systems, in health and social care, in housing, urban planning and transport, in how to value and engage older people in our societies and economies.

▶ Future of the young

Countries as diverse as Spain, Sweden and Ireland all face youth unemployment above 20%. Youth need access to education, resources and structures to turn ideas into value through the provision of relevant opportunities. Without the right kind of support, the most talented will turn elsewhere.

▶ Social exclusion

Social exclusion is a broader issue occurring for different reasons – ageing, youth, cultural diversity – and can block other trends such as interculturalism, hyper-diversity that are needed in a modern society. New pathways must be developed to give people access to opportunities, infrastructures, competencies and incentives.

▶ Safety of Future Technologies

Safety for citizens is a huge area of concern linked to technological advances. For example, the increasing digitization of personal information combined with international movement of people creates real risks of cybersecurity. Other new technologies – from biotech to nanotech – create real and perceived risks and ethical concerns. Without socially acceptable solutions and safeguards, the innovative possibilities and societal benefits of these technologies will not be realised.

We are not calling upon government to solve all of these grand challenges. Many valuable initiatives will originate in the existing business sector. People are creative and can link their ideas to new solutions. But we believe that future European public policy can impact and help solve grand societal challenges. This requires shaking up current ways of how policy is conceptualised, developed and implemented.

Innovation policy is key to using European resources, ideas, and people more adventurously and more broadly.

A key issue lies in the relationship between regional and national policy on the one hand, and European policy on the other. We agree that the EU can take the lead in experimental policy, in creating learning loops about policy at all levels, but above all, in driving forward new focus areas for policy. Therefore, we propose both specific policy actions at the EU level as well as broader reforms by which the EU can stimulate change at national, regional and local levels.

Throughout the Panels' discussions we have returned and been inspired by the image of a sea star. This started with the book by Braffman and Beckstrom called *"The Starfish and the Spider: The unstoppable power of decentralized organizations"*. But it went further as a visual concept to test and stimulate our thinking.

We use the sea star concept to mean an outstanding ability in bringing together independent but coordinating components into a functioning organism, within an eco-system. This is thus a good symbol for open innovation and innovation labs, where differential actors co-exist in ways which stimulate creativity and problem-solving.

Adaptability also matters, which involves learning and feedback loops. The sea star can even re-generate lost legs, which in our world could represent 'creative destruction' to borrow a phrase from the economist Schumpeter. We need creative destruction, which means stimulating renewal through industrial dynamics of company failures and start-ups and of moving resources from older to newer activities. To get there, we need people - innovators and entrepreneurs - focused upon identifying and realising innovative opportunities by mobilising resources and networks that stretch across boundaries and countries.



From Innovation unlimited

"Change peoples mentality. NOT innovating is dangerous. This could include making the teaching of innovation compulsory..."

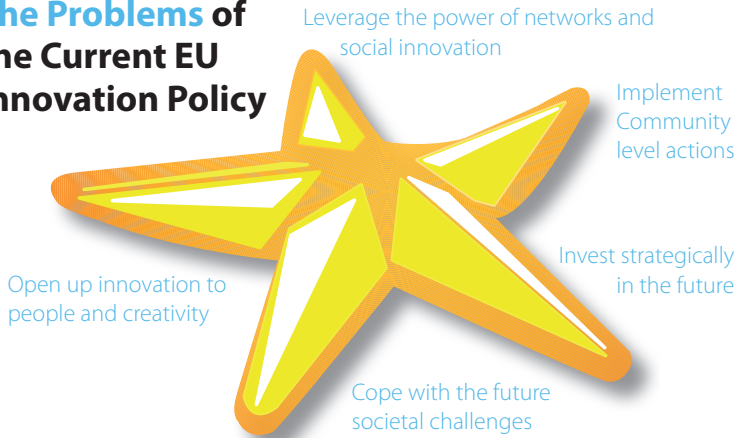
"Ingredients for innovation are knowledge, money and trust. These are things in which a government can play a substantial role..."

"Whether people dare to participate in innovation or not has a lot to do with culture and the way the social environment reacts. Will innovative behaviour be ridiculed or admired?"

"what is typical for our last decades is that we have ... lost the ability to play... I recommend spending a morning in a kindergarten to re-learn constructive, explorative and role play".

Here we represent some of the key conclusions of our work in the form of sea stars:

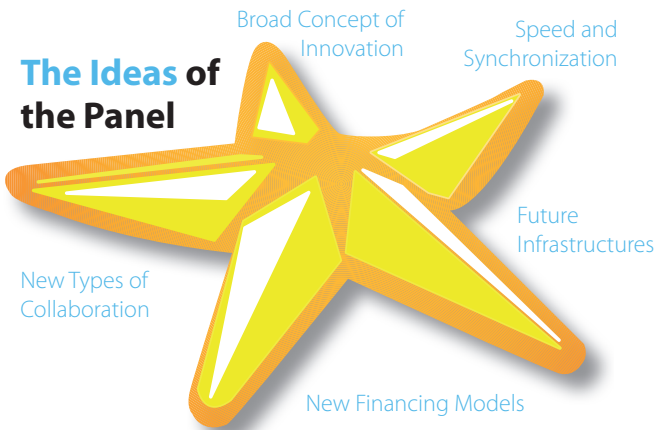
The Problems of the Current EU Innovation Policy



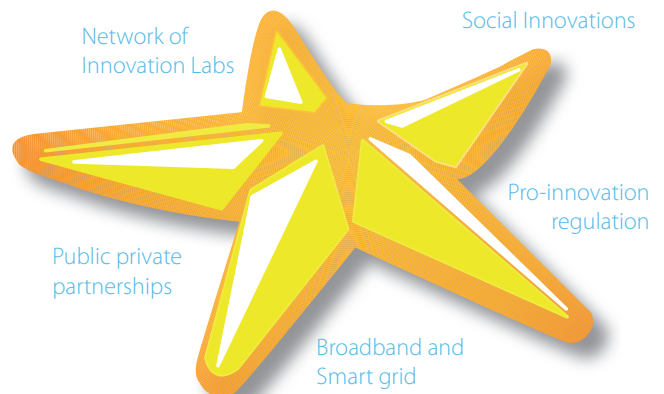
The Challenges for EU Innovation Policy



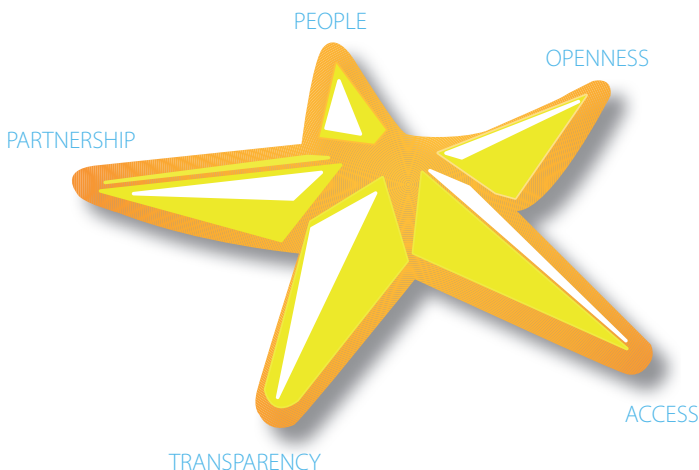
The Ideas of the Panel



The Impacts of the Panel's ideas



The Value Proposition of the Panel's ideas



2) Five Policy Propositions

2.1) Broadening innovation: from business innovation to business and social innovation

Businesses innovate mainly for return on investment, whereas society must innovate for social return. Europe needs both.

Europe faces unprecedented challenges – ageing and diversifying population, youth unemployment, sustainable cities and global challenges – climate change, environmental degradation and poverty. Incremental change and business innovation alone are not enough. Social innovation explains 75% of innovation success.¹ Breaking the mould requires collaborative, cross cutting responses reaching out to business, public policies, research, education and training, public services, finance and NGOs.

Public policy should not only stimulate business innovation, but also social innovation. Social innovation brings together individuals and communities, including civic society (or third sector) to address specific challenges. This is a major activity with the third sector estimated to account for between 4 and 10% of GDP.² Civil society has been traditionally an engine of social cohesion promoting volunteering and active citizenship, providing services for underprivileged and marginalised groups, with a strong focus on health and education. Social innovation will require experimentation, engaging citizens as co-creators, and the ability to turn promising ideas and new service models to scale at the level of cities, regions, EU Member States, the EU and global markets.



From Innovation unlimited

"I agree with the context presented in the text but I think it misses one central point, which is that social innovation can radically contribute to a better overall governance and confidence in our democracy/politicians"

¹ Prof Henk Volberda, University of Rotterdam, presentation to Netherlands Centre for Social Innovation.

² The Social Economy in the European Union: Summary of the Report drawn up for the European Economic and Social Committee by the International Centre of Research and Information on the Public, Social and Cooperative Economy (CIRIEC). http://eesc.europa.eu/groups/3/categories/soceco/booklets/EN_Web.pdf

Europe has strong traditions in social innovation, for example in cooperative and consumer movements. But now lags behind as its ability to effect change in society is slower. The next 10 years requires as much attention to developing a social innovation system as in the last 20 years on developing the R&D based innovation system.

We believe that social innovation can in particular be harnessed to radically change public services, to meet the needs of citizens. A new agenda is needed for public services: moving away from the command and control paradigm towards one capable of delivering public value through collaboration, innovation and participation. Such transformation must also recognise the growing importance of the civic society, including the preferences and ideas of people in demanding new service design and redesign.

We propose:

- **Base EU action around compelling social challenges**, such as chronic disease and other implications of our ageing society; interculturalism and hyper-diversity; climate change; environmental protection and unemployment.
- **Finance social innovation funds**, like the new US fund (see opposite)³ through a new partnership between the European Commission and European Investment Bank (EIB) and through the EU structural funds and EU level recognition. To increase reach and impact, European social innovation funds should be combined with existing national social investment funds (already operating in countries like France, UK, Italy and Germany).⁴

³ http://www.whitehouse.gov/the_press_office/President-Obama-to-Request-50-Million-to-Identify-and-Expand-Effective-Innovative-Non-Profits/

⁴ This proposal was submitted by the Euclid Network.



What is social innovation?

Social innovation seeks new answers to social problems by identifying and delivering new services that improve the quality of life of individuals and communities. It tends to be:

- **Experimental** (testing out a range of alternatives and assessing which ones work);
- **Cross-cutting** (for example responding to ageing requires changes to everything from employment law and pensions to new models of self managed care);
- **Collaborative** (making use of the full potential of network technologies, both to boost productivity in the social fields but also to speed up learning)
- Able to engage citizens as **co-creators**



White House Office of Social Innovation and Civic Participation

Initiated by President Obama in Spring 2009 and requesting a \$50 million fund for Social innovation. The aims include:

- Catalyze partnerships between the government and nonprofits, businesses and philanthropists
- Identify and support the rigorous evaluation and scaling of innovative, promising ideas that are transforming communities
- Support greater civic participation through new media tools.

- **Transform the public sector**, by dedicating at least one percent of public budgets to innovation – such as the UK NHS (see opposite), and to create specific EU support for platforms⁵ and mechanisms for trans-national transfer and scale up of innovative public services.
- **Engage the old:** in education, training and projects and networks to support innovation, creative entrepreneurship and research, and provide role models for elderpreneurship, establishing new systems to draw on the expertise and experience of senior citizens. The young and old should be included in value chains, both by addressing their demands and by unlocking their potential.
- **Teach the young to manage creativity and innovation:** youth unemployment is a major issue of concern in Europe, up to 25% in many countries. Youth must become engaged in society, and Europe can contribute through entrepreneurial policy models and training to test new ideas. University training must also shift from management of existing organizations to the new styles and structures required for innovation.



The NHS innovation fund

The UK National Health Service (NHS) launched a £220 million fund to nurture and reward innovation across its 1.3 million staff and their colleagues. The fund is investing into a combination of projects on the ground and at regional level, speeding up the time it takes for innovative solutions to get from design to practice.

⁵ An inspiration could be the Danish Mindlab, bringing together the ministry of Economic and Business Affairs, the Ministry of Taxation and the Ministry of Employment, see <http://www.mind-lab.dk/en/>.

2.2) Speed and synchronization: from fragmented bureaucracies to flexible partnerships, from better regulation to pro-innovation regulation

Speed and scale are everything in innovation. Europe's current structures and institutions respond too slowly and in a fragmented way, meaning that ideas generated here are developed more successfully by others elsewhere.

Europe is slow due to institutional inertia, silos between different policies, and lack of responsiveness to external stimuli. There is an urgent need to address these issues, due to increased global competition and the pressing need to address climate change, ageing and the other societal challenges. These require coherent policy and actions across countries and actors in different generations and sectors, including small and medium enterprises as well as large ones. The European Union can take a leading role in promoting flexible partnerships across boundaries and in developing pro-innovation regulation.

The creation of a single market was a driving force for European integration over the last 20 years. This must be extended to innovation, with EU regulations – for products, services, public procurement and intellectual property – that both drive innovation and are synchronised with the innovation cycle. This also means synchronising funding programmes and innovation support, with development of standards, public procurement and regulations.

The European Commission can stimulate new public policy interactions for the innovation value chain, starting with a major challenge. The goal is to find ways to create robust visions of what is possible, stimulate new ideas, and select the best ideas that are generated. To achieve this goal, the Commission should work with a diverse range of partners to create roadmaps, bringing together and synchronising the major public policies needed across the innovation value chain – from R&D to demonstration to standards and regulations to purchasing and consumer confidence.



From innovation unlimited

"we need first to define our common dreams. Some of them are already there (CO2 reductions, energy independence, etc.) But, some of the dreams are lacking".

"...Speed and scale are everything indeed. Now being the first to have developed a revolutionary product is great, but being the first to have enrolled the product on your home- business market - thus improving competitiveness - is better".

A future innovation value chain consists of many actors, where public policy plays a role in forming the governance system. Developing innovation in this way thus means a flexible approach to design new, open interactions across value chains.

More is needed to speed up the uptake of innovative solutions and technologies, especially in the public sector. Information technologies and the future internet provide new tools to achieve this. Open source ways of working and IT solutions are part of the answer.

We propose:

- **Ambitious European initiatives with synchronised actions around the major challenges**, engaging actors across the innovation chain, coordinating supply and demand of innovations, and involving public sector reform.
- Synchronised action requires that **EU directives and regulations are supporting innovation** and not creating new barriers to change, through specific assessments of key legislation.
- **Change public procurement to support innovation**, including the processes and practice, full roll out of e-procurement, and setting aside a part of public tenders specifically for innovation.
- **Open up government owned data**, following the example of data.gov⁶ and require data to be published in web-enabled formats, to allow new combinations and empower citizens to co-create new services. This would support the transformation of the public sector by allowing greater public accountability and citizen engagement and encouraging new ways for people to use the web to support one another. Incentives and platforms should be supported for data-generators to enable open access.



Why reform public procurement?

Public services are conservative and lack in-house knowledge to procuring technologies or innovative solutions. The type of changes needed include:

- *Procure solutions and services, not technologies;*
- *Open up procurement markets for new entrants, e.g. by removing the requirements for track record;*
- *Mandatory use of electronic tendering and payments;*
- *EU level incentives and support for public bodes to buy innovative;*
- *Approaches like the US and UK Small Business Innovation & Research (SBIR) schemes*

⁶ Data.gov has the aim to increase public access to high value, machine readable datasets generated by the Executive Branch of the US Federal Government. It encourages users to propose new data sets that should be added. See also the UK Power of Information Taskforce, <http://powerofinformation.wordpress.com/>.

2.3) Invest in future infrastructure: from bridges to broadband, from control to open access

Investing in future infrastructures is part of using scarce resources to grow the new industries and services that will be decisive to the upturn – not if, but when it comes.⁷ Infrastructures help facilitate the transformation. Building the knowledge and digital infrastructures will support business as well as social innovation, in particular for service innovations.

Europe is still putting its infrastructure investments as it did in the 19th and 20th centuries, like bridges, roads and buildings. Current economic stimulus packages are still too focused on buildings rather than other types of infrastructure, on concrete rather than broadband networks, and on old industries not new ones. Moreover, such infrastructure investments fail to realise the disruptive nature of new technologies or to capitalise on how emerging technologies interact with and enable wider economic and social change.

Every major recession of the past has been followed by radical changes to the industrial structure, with the surging growth of new industries often supported by new infrastructures. Keynes' contemporary Schumpeter recognised that the destruction of old industries is both unavoidable and often necessary to the dynamics of growth.

The risk is that the EU falls behind the USA and Asia in critical next generation digital infrastructure. Fragmented, quasi-monopolistic markets block change and EU level solutions. Future infrastructures need new interoperability standards, to open them up to SMEs as well as public services and large companies.



From innovation unlimited

"An efficient infrastructure is a condition for growth, but has never driven innovation or growth"

"Investment in infrastructure can be a real enabler of innovation but important to recognise that the value comes from the services that come from it and not the infrastructure itself"

"There is hardly any European vision for all European infrastructure. Is there a vision for European Rail Infrastructure? Is there a European vision for road pricing?...I think there are enough ideas but there is a lack of European leadership"

⁷ OECD 2009a. Summary of OECD Roundtable on responding to the economic crisis: Fostering industry restructuring and renewal, Paris 1 April.

Europe needs to do more to unlock the potential of the new digital infrastructure, encouraging the creativity and innovation of consumers and entrepreneurs to create new social and business models and new consumption patterns. Broadband is not simply a new communication line but a new social infrastructure.

The 20th century electricity grid needs to be transformed for the green economy, for large-scale renewable energy generation, for mass electric transport, for zero emission homes, and for intelligent energy management.

But simply investing in hardware (lines, cables, transformers etc.) is not enough. The potential of smart grids must be unlocked with new applications, solutions, markets and activities through a comprehensive redesign of electricity systems.

This matters to citizens and to the governance of democracy. Individuals who have more access to information can express their opinions to engage in democracy. Infrastructures of the future should allow more decentralised organisation, including social networks across boundaries.

European society is developing rapidly as new countries join the Union and as an effect of immigration. This is placing new challenges on communication and participation. This can be a strength, as Europe has a strong cultural identity and heritage that will be valuable in the future.

But Europe must also learn to benefit from multiple cultural identities and heritages, both across and within countries. This could provide positive impetus for innovation in new types of growing markets related to creative industries – like cultural foods, design and adapted experiences for tourists.



Why broadband?

High speed broadband is not just for faster content transmission, it will enable next generation internet, radical new services and business models. It will transform how people work and live by increasing both location independence (allowing people to see work as an activity rather than a place) and the importance of specific places for face to face interaction. It will unlock the growth potential of SMEs, provide a platform for improved school systems, the diffusion of care to elderly people, and enable a huge range of environmentally sustainable ways of work, play, learning activity.

We propose:

- **Every household, business and public building to have access to ultra fast broad-band and the smart grid**, with ambitious EU targets for speed of at least 1Gb/second and specific completion dates.
- **The EU to be the first region to implement an integrated, cross-border smart grid** with every household connected with bi-directional smart meters, and employing common standards and interoperability so that every household, business and public building can communicate with their energy suppliers.
- **Stimulate infrastructure for emerging technologies and services**, with more world class hubs in Europe that are based on multi-disciplinarity, diverse partners and open access. Thus, Europe should combine infrastructure projects with innovation initiatives which exploit that infrastructure, including those in the Structural Funds and recovery packages.
- **Develop a modern digital infrastructure for life-long and advanced learning**. Assuring access and providing significant investment in digital infrastructures are necessary to realise the vision of life-long learning as well as to increase the competitive environment necessary for advanced learning in universities and colleges.



Why smart grids?

Smart grid delivers electricity from suppliers to consumers using digital technology to save energy, reduce cost and increase reliability and transparency. Smart electricity grids are not simply more efficient networks. They can be part of how to adapt cities and lifestyles to a low carbon economy.

The EU has a Technology Platform and R&D on smart grids, but no clear policy roadmap to implement smart grids and on key areas such as demand response, cross-border retail competition or smart metering standardisation

2.4) Innovative financing models: From incumbents to new entrants; from public vs private to public private partnerships

Risk and uncertainty are inherent in innovation. We argue that the current finance system is not fit for the new types of innovation required to address grand societal challenges. The European Union can stimulate the financing system, benefit from the scale and scope of the Single Market and introduce greater openness and transparency in the system. Better finance for innovation covers many aspects, from banking and finance regulations to the culture, knowledge and attitudes of financial institutions and entrepreneurs. We believe that an aspect of critical importance at European level is the availability and markets for risk capital.

This is particularly important for SMEs. Europe should be able to provide the financing for high-growth innovative international businesses home-grown from Europe; i.e. ambitious companies that can create 500 jobs in 5 years in the most promising new markets such as energy, environment, smarter logistics, the internet of things, new materials, medical applications and aging.

We are currently a long way from these goals. Both public and private financing is largely directed to incumbents in mature industries. Yet these are precisely the companies that block radical innovations that could undermine their current business in the process of creating new ones.

The existing support for smaller or innovative companies (grants, seed, venture capital, loan guarantees) is fragmented and fails to mobilise private sector investment efficiently or consistently. There is no pan-European risk capital market, meaning European funds lack size and expertise, and companies lack growth financing. Ideas, knowledge and intellectual property developed by small companies and universities typically remain undervalued and underutilised.



From innovation unlimited

“There is no evidence to suggest that a public body would be better at allocating capital to innovation than a properly regulated and incentivised private sector.” European Venture Capital Association

“Improving the access to public financing for innovation by business should be a high-priority for the EU. The acceleration of pan-European venture capital funds is a positive development, however it is important that SMEs have equal access as is the case for large firms”.

“for ecommerce, it is very important that a truly European Online Payment System would be developed (like iDeal in the Netherlands)”



Current venture capital and stock market models have shown their limitations, and investments made using these models in Europe risk being lost unless these models can be rapidly reinvented. Without this, the pipeline of innovative companies and talent will be dry for the coming economic upturn.

Europe needs a radical new approach to financing innovation, which transforms the fragmented short-term approach of governments, private finance and long-established companies. European policy must address the current weaknesses of financing innovation through new partnerships to share risk, better harnessing the knowledge and skills of entrepreneurs and companies, and deploy more intelligent ways to combine funding instruments (e.g. grants, equity, loans, fiscal incentives) and where needed on a transnational basis. Current risk capital markets are opaque, leading to limited access and sub-optimal decision making.

Innovation should be core to financial institutions, with the European Investment Bank (EIB) becoming a European Innovation Bank.

Failures are a necessary aspect of innovation processes. Therefore, a final aspect is related to bankruptcy, as related to earlier advice and regulation. A comprehensive review of legal, tax, and economic policy is necessary to move further to develop European regulation in such a way as to stimulate innovation and entrepreneurship.

We propose:

- **A major development of the European Investment Fund (EIF)**, in partnership with the European Investment Bank (EIB) and European Commission with a mandate to create new models to fund trans-national partnerships, corporate venturing and societal innovation funds.

In March 2009, BASF and Grameen Trust established a joint venture as a new business model to improve the health and opportunities of the poor of Bangladesh. BASF's initial investment was €200 thousand together with in kind contributions

<http://www.basf.com/group/pressrelease/P-09-155>



Creating a pan European VC fund

- **Accelerate pan-European venture capital funds,** as a new role for the expanded EIF to create and facilitate funds with the critical mass of resources and expertise to operate on a trans-national basis funds and specialise in future growth markets. Such funds must attract sustainable co-investment from the private sector across Europe, including corporate venture funds, and must be professionally managed avoiding political interference or micromanagement from governments or the European Commission. They must lead the way to greater transparency in risk capital markets.
- **Incentivise an EU market for Intellectual Property.** A proper market for IPR will allow universities, public research organisations and small companies to find better partners, investors and fairer prices for their IPR, skills and knowledge and to access to unused IPR of large players. We therefore fully support the proposal for the Caisse des dépôts (see next page). This should be accompanied by bolder investor readiness initiatives that enable creative businesses to reduce their risk profiles to investors and accelerate deal flow.

In 1945 the UK government inspired the creation of 3i, financed by the Bank of England and major British banks, which went on to catalyse the creation of the UK venture capital market. We believe similar leadership from the European Commission and EIB Group is now needed to catalyse the development of pan-European market. A new Fund should:

- *Have the critical mass to be a major player, i.e. around 1 billion euro under management;*
- *Co-invest alongside other funds to provide specialist expertise on European markets and technologies;*
- *Be able to make larger follow on funding, with longer time horizons, than most existing VC funds.*

The aim is not to displace existing funds, but to improve the professionalism, transparency and deal flow of the European market as a whole.

From Innovation Unlimited: An EU market for Intellectual Property

Caisse des dépôts (CDC) is a state-owned holding company that makes long-term investments in pursuit of public policy objectives and in order to foster economic development. ..Indeed the current situation is a paradox. Europe (and the World) faces a deep transformation of invention/research processes and related exchanges, yet the intellectual property economy still is stifled by an opaque and asymmetric functioning – with correspondingly very significant lost opportunities and value for Europe in the increasingly critical knowledge economy - : dominance of large actors, unequal access to information, secrecy of price formation... all of which result in a severe loss of potential innovations and valorisation of inventions...

CDC believes it is necessary to spearhead the establishment of the infrastructure needed for a large, accessible and transparent market for intellectual property exchange to operate efficiently for the benefit of European research. This initiative has been building for over one year and CDC has taken the necessary internal steps needed to commit several millions euros to establish in the coming months:

A financial market place for intellectual property investment and coverage, in line with a similar initiative forecast in Chicago next year being spearheaded by Ocean Tomo, a US merchant bank specialised in intellectual property. It is the objective that this marketplace will offer access for invention producers and users of all sizes as well as investors, and will offer unit license rights and financial coverage products to hedge risks or investments. This project is under construction and it is currently envisaged that it will begin operations in mid-2010, possibly with a European scope from the outset.

An investment Fund for intellectual property rights, dedicated mainly towards public research patents in the first instance. The design of this Fund is predicated on the assumption that by gathering a large number of patents, it will be possible to establish clusters of patents which are increasingly necessary for large companies as well as SMEs to develop innovative products and services. It is expected that this model must demonstrate after a few years in operation that it is economically viable and consequently allow the largest transfer of research and inventions in a sustainable manner. It is intended that the Fund will buy patent licences from public universities and research centres, organize patent clusters, and license on a non-exclusive basis these patent clusters to the maximum possible number of industrial users. Royalties/revenues coming from these licences would then be shared between public research and the Fund, with the intention of using proceeds to broaden the Fund's scope in order to expand the necessary critical mass. CDC decided in June 2009 to launch the first phase of this project with the creation of a pilot company which will begin testing the operation with volunteer universities and research centres.

The necessary tools to develop exchanges and uses of patent rights and especially for objective measurement of the quality of the patents. A sophisticated system of patent rating is under development in cooperation with leading international private sector participants.

In the new knowledge-dominated economy, research and its commercialisation are global by nature – so is the scale of resources needed to successfully deploy the vision outlined here. Consequently the above developments are initiated with a European objective from the outset and CDC maintains regular contacts with European actors – in particular the European investment Fund of which CDC is a founding shareholder.

2.5) New places for new types of collaborations: from closed processes to the power of networks

Innovation feeds on collaboration, the combination and confrontation of different ideas, perspectives and experiences. The EU can support the shift from closed processes to the power of networks.

This is about learning from each other, but also about identifying new problems and new solutions where future products, services and ways of working create value. Stimulating productivity and long-term economic growth is thus as much about experimentation and new ideas as it is about optimising efficiency. We expect to see an open environment that stimulates and supports innovators from SMEs, public sector, universities, as well as large companies.

Such openness and collaboration is required in an early stage of ideas, to identify problems and solutions. We are aware, however, that SMEs in particular are often dependent upon unique service design and IPR, at a later stage of product development. The key message is that collaboration is crucial for service and product innovation. This requires a platform, often including government actors, to specify the rules of engagement, to help incentivise an open exchange.

Information technologies and web 2.0 tools are transforming how people interact, notwithstanding the necessity of physical space and meetings for the exchange of ideas and collaboration.

Europe has made great strides in building science parks, incubators, research networks and educational exchanges in specific research areas. Closed innovation systems of laboratories, universities, research institutes, art schools, corporations, public administrations, professions are no longer a viable approach for future innovation.



From Innovation unlimited

"...Future innovation policy should consider how to facilitate access to completely new groups of users and innovators, and not only provide new tools for incumbent innovation communities..."

"...Yes, Innovation intermediaries are going to play a major role on the success of Open Innovation. Information technologies and web 2.0 tools give new opportunities to increase cross innovation between companies and research centers..."

"...One central issue to bear in mind when preparing for the future innovation collaboration is that the context of innovation will shift in the coming decade or so, mostly due the rise of the next 4 billion. As much as innovation has been closed in the past, it has also been the business of well-to-do-middle class, and this has framed many of the actions, organizational choices and policies..."



New roles and skills are needed to sensor and bring together the right actors globally and broker collaboration. Open innovation is based on the power of networks and access to knowledge across Europe and globally. Clusters can support these objectives.

“As innovation capability continues to globalise, networks are becoming increasingly important... Networks accord an important role to so-called brokers: individuals and companies [organisations] that are able to link talents and assets separated by geographic location, time zone, language, culture, and business practices in ways that generate value”. (*Tapping the World’s Innovation Hot Spots* by John Kao Harvard Business Review, March 2009).

Open spaces may be virtual, through networks and interaction, but we also place value upon developing real, physical spaces dedicated to innovation and which stimulate interaction, based on experimentation, design, demonstration, visualisation, and user participation.

Some places are showing the way forward. A Helsinki Design Lab is being established between the city, the innovation agency, companies and citizen groups to bring together design, technology and users in innovation projects. Amsterdam, Barcelona, Bristol, London, Rotterdam and others are developing similar innovation labs and networks for new types of collaboration.

To accelerate this process we propose to:

- **Create, fund and network innovation labs**, with localities creating spaces to enable interaction between large and small, low tech and high tech, arts and technology, public and private and not-for profit, supported by recognition and networking at European level. Innovation labs should help to develop, test and scale up solutions to implement the new orientations of EU innovation policy.

The purpose of Helsinki Design Lab is to explore the challenges and opportunities of the new human-centric design approach, to promote design as a relevant approach to systemic changes, to strengthen the image of Finland as a development laboratory for new ideas and innovations and to build a base for continuous creative and innovative dialogue concerning the dimensions of new design paradigm.

- **Invest in cultural and creative institutions, organisations and networks** as the interdisciplinary brokers for innovation, creative content and new knowledge, including through creative exchange initiatives such as innovation commissions, exhibitions, and digital channels with a strong public service element. This includes policy and governance initiatives that reinforce the role of intermediaries, to act as change agents, facilitators and brokers between disciplines, sectors, regions and countries.
- **Develop a major prize for innovative localities**, to showcase social and open innovation and provide an incentive for regions to go further in their renewal.
- **Stimulate universities and public research centres to be more open and international**, reforming incentive and performance systems, and supporting (including through EU programmes and the new European Institute of Innovation and Technology) the development of strategic competences and collaborations between business, research, education and training.

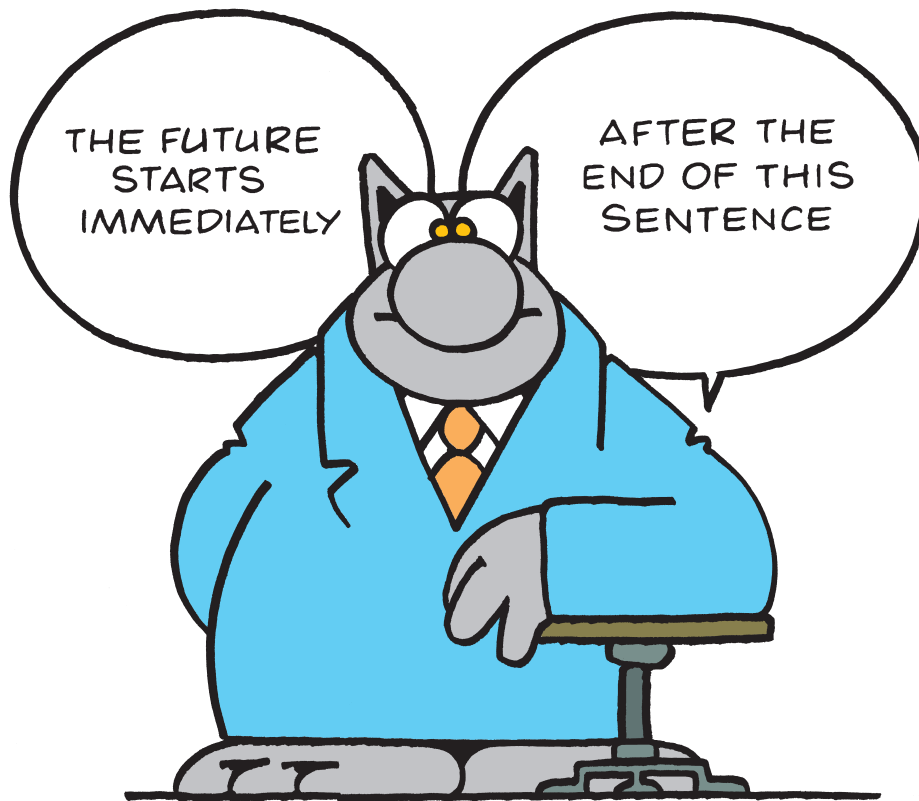


The
**Nanosystems
Initiative**

Munich is one of the Clusters of Excellence which have been selected by the German government. It brings together scientists from various research facilities in the fields of physics, biophysics, physical chemistry, biochemistry, pharmaceuticals, biology, electronics and medicine to work towards an overarching vision to design, fabricate and achieve control of nanoscale systems, and to unlock their potential for possible applications in fields as diverse as future information technologies, the life sciences.

<http://www.nano-initiative-munich.de/>

3) The future starts after the end of this sentence



The arrival of a new European Commission, the development of the post 2010 Lisbon strategy and the forthcoming discussions on the EU budget provide a unique opportunity to change course on innovation. We passionately believe that innovation is not a minor policy area for a small group of experts. It is fundamental to the future of Europe.

This is the start of a journey. We urge the European Commission to take forward rapidly our propositions and actions within a renewed innovation policy. We as panel members, and individuals, will support this process. A sense of urgency and focus must be conveyed, so that Europe does take bold steps in setting priorities and designing policy that transform ideas into concrete actions.

But this is clearly not a task for the Commission alone. The radical transformations we believe are needed require involvement across all parts of society. This means a new openness how policies are developed and a stronger consensus on the changes needed. Open innovation applies to innovation policy too. We recommend that the Commission builds on the open approach that we have taken through the Innovation Unlimited forum, <http://blogs.ec.europa.eu/innovationunlimited/>, where citizens can co-create policy ideas and exploiting the potential of Web 2.0.

We as individuals and collectively must move to come up with creative solutions to the major challenges facing us. We urge businesses, researchers, public servants, NGOs, students, retirees, to participate in this process and together to create the future we want.

About the panel

The Business Panel on Innovation was established by DG Enterprise and Industry to provide inputs from a business perspective on priorities for future EU innovation policy.

We exist because our colleagues at DG Enterprise and Industry had the courage to think in a new way. They initiated, supported, and stimulated us as an independent panel. They wanted a fresh look at innovation, bringing in competencies and people from outside the 'usual' Brussels circles. We will always thank them for taking this step, as this has led to a most unusual experience for us all.

The Panel has functioned well because our diversity led to debate and creativity. We work as industrial leaders and entrepreneurs, and bring experience of design, banking, manufacturing, services, high tech and low tech with experience from many countries. We benefitted from the university and teaching perspective from our rapporteur, and a wealth of policy knowledge from the Commission and various thought leaders who joined our meetings.

The members are



Diogo Vasconcelos

(Chair), Distinguished Fellow, Cisco Systems International



Gianfranco Corini,

President, NEXT-Ingegneria dei Sistemi S.p.A



Jan Lamser,

Member of Board of Directors and Senior Executive Officer, CSOB Bank (member of KBC Group)



Professor Rüdiger Iden,

Senior Vice President, BASF SE



Dr Anne Stenros,

Design Director (Vice President, Design), KONE Corporation



Rapporteur: **Professor Maureen McKelvey**, Professor of Industrial Management, School of Business, Economics and Law, University of Gothenburg.

Mandate of the panel

Context:

DG Enterprise and Industry of the European Commission is currently developing ideas for the future orientations of EU innovation policy and potential new measures to support innovation.

The current EU innovation policy framework follows the Broad Based Innovation Strategy from 2006 and will need to be updated and refreshed for the next Commission and the post 2010 Lisbon strategy. As part of this exercise, it is important to get a business perspective on future innovation priorities, to complement inputs from the academic and policy community. It is proposed to establish a short term (8 month), small (5 person) group to provide such an input.

Aim:

Provide input (in the form of a report and possibly presentations at key events) to the Commission on innovation policy in Europe post 2010 in the context of the Lisbon reflection process by defining priorities for boosting innovation performance and identifying potential key initiatives for EU action.

Composition:

The group will have a maximum of five members who will act in a personal capacity. The profile of group's members should:

- be business orientated but also include expertise coming from academic institutions and/or business schools and from the public sector and/or politics;
- not include serving members of parliament or government ministers;
- include expertise from a range of sectors, e.g. services, manufacturing, technology based, finance and be able to bring an international perspective.
- gender balance and diversity are important.

The members of the group and its chair will be selected and appointed by DG Enterprise and Industry. The panel will be supported by a rapporteur who will be selected by DG Enterprise and Industry.

Timeline, operation and reimbursements:

It is envisaged that the group will have a maximum of 5 meetings between February and September 2009. Consideration will be given to holding one or two meetings as «hearings» where a wider range of stakeholders can present views to the panel.

The secretariat will be provided by DG Enterprise and Industry and meetings will be held in Brussels, although consideration will be given to holding one of the meetings in a different location.

Information obtained through participation in the panel will be confidential. DG Enterprise and Industry will be responsible for publishing the report of the panel.

Members will not be reimbursed other than for travel and subsistence expenses.

Appendix: relevant studies and analysis of innovation.

This appendix is written by the rapporteur, Professor Maureen McKelvey. It places the concepts and ideas developed by the Panel for Innovation, in relation to some literature and debates on innovation and innovation policies.

In essence, the Panel starts with a simple but powerful concept, namely that innovation, technology and entrepreneurship will stimulate long-term growth and thereby change our economy and society. The Panel has worked with the notion that innovation will create a new future, as also reflected by the fact that we choose John Kao's definition that innovation is about capabilities for creating the future.

This is closest to the approach in the tradition of the economist Schumpeter, which views innovation as essential to economic and societal transformations over periods of historical time. Bruland and Mowery (2005) provide one perspective, namely the diversity and heterogeneity of innovation processes across time, across sectors and across countries. Freeman and Perez (1988) and Perez (2009) take another approach, namely the common patterns of historical periods. In their analysis, major techno-economic paradigm shifts are driven by interlocking changes in technology, institutions and politics. In consequence, decision-makers act in a complex and turbulent world, under high degrees of uncertainty, in an economic system which continues to generate novelty and select amongst alternatives (Verspagen 2005:496).

The Schumpeterian approach is in contrast to other theories, such as growth theory (including growth accounting and endogenous growth models) where technology is a key explanatory

factor but not seen as leading to fundamental changes in economies. Indeed, economics generally tackles issues of technology, labour and growth in relation to an explanation of individual behavior and price mechanisms, which together lead to an efficient allocation of resources within a set of constraints (Hanusch and Pyka 2007:1160).

The Economist started a new 'Schumpeter' column in Fall 2009, in recognition that business is also about innovation, entrepreneurship and creative destruction – and not just about competitive regulation and investor behaviour.

"[Schumpeter] argued that innovation is at the heart of economic progress. It gives new businesses a chance to replace old ones, but it also dooms those new businesses to fail unless they can keep on innovating (or find a powerful government patron). In his most famous phrase he likened capitalism to a "perennial gale of creative destruction" (The Economist 2009).

In *Capitalism, Socialism and Democracy*, Schumpeter states:

"The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates." (Schumpeter 1947: 82–3))

The main points from this quote are thus that the economy keeps changing, and thereby creating new futures. Nelson (1996: 87) argues that this is “Schumpeter’s most consistent and elaborated argument about innovation and economic transformation, that it fundamentally involves disequilibrium”⁸.

In the recent Elgar Companion to Neo-Schumpeterian Economics, Hanusch and Pyka (2007:1161) stress that modern neo-Schumpeterian scholars have developed these ideas into a framework, theories and explanations for the role of technology and industrial dynamics. They urge for further academic work to analyze how and why development is the result of co-evolutionary processes involving industry, finance and public sector. These three processes together influence development, and economies can take a narrow corridor for growth between bubble and stagnation, seen over historical time.

The new direction for research must be to include neglected topics, especially finance and the public sector. These issues are of primary importance to how the economy changes – especially after the financial and industrial crises starting in 2008.

The recommendations of the Panel are very much focused upon how public policy can stimulate the relationships between industry, finance, the public sector and broader society.

What is the role of public policy for innovation?
A future theoretical perspective on development and growth should stress that industry, finance and the public sector are linked together, in a complex system. Moreover, change is often

induced endogenously (e.g. internally within the economic system) through innovations, new knowledge, new organizations, competences and market creation. If change is endogeneous to the system, then this implies that development can take different paths. The future is created through decisions and actions, not deterministic from ‘laws’ and initial conditions. Innovation and entrepreneurship continue to disrupt the economy, thereby sometimes fundamentally changing activities and moving the economy in new directions.

One implication is that public policy must support the ‘change’ processes. Fundamental transformation may lead to reactions, such that attempts to create change will also lead to resistance and inertia. This can lead to ‘tensions’ across the system, where tensions can arise from those that exhibit flexibility and those that tend to exhibit stability, in different parts of the economic system (McKelvey and Holmén 2006). Such tensions spring, for example, from differential rates of change, from the variable abilities of actors to respond to systemic changes, and from the existence of both turbulence and inertia at different levels within the same system.

Some decision-makers in public policy, in firms, in public organizations, in communities and so forth will be innovative. They will change, experiment, and try new things. Other actors and parts of the system will resist.

This implies that public policy has a key role in stimulating innovation and entrepreneurship – through the direction or governance of the overall system. Policy should be designed to help individuals and organizations develop new

⁸ Nelson goes on to argue that ‘standard equilibrium theory in economics cannot cope with it and its economic consequences’.

competencies, new knowledge, and channel demand. Thus, public policy matters because it can play an important role in financing and stimulating long-term and more uncertain projects, with possible/probable societal benefits.⁹ Policy responses to the current crisis highlight the urgency of reforming policy in these directions (OECD 2009b), including policies for infrastructure, R&D and innovation support, investments in human capital and training, promoting the update of green and energy efficient technologies, and support innovation investments.

Similarly, OECD countries are working to stimulate entrepreneurship. "Measures include tax breaks for companies, initiatives intended to bridge liquidity gaps (e.g. ensure banks keep lending to business, government-backed loan guarantees or loans for small firms, export credit guarantees), the simplification and speeding up of administrative procedures, the promotion of startups and entrepreneurship, and directing government procurement to young or smaller firms while also ensuring the rapid payment of invoices to small and medium enterprises (SMEs)."¹⁰

The discussion in the Panel covered a similar broad range of policies and stressed the need for creative thinking about public policy. Our sense of urgency of the need to address immediate grand societal challenges through innovation led us to focus upon the more radical changes.

The ideas developed require wide governance and coordination to stimulate novelty and to diffuse innovations. Per definition, the grand challenges facing us today require synchronization over countries and over user demands and frameworks of regulation. The precise roles of policies and governance at European, national, regional and local levels in order to realize the recommendations was not part of the Panel's mandate, although these are clearly important issues.

What types of innovation should public policy try to stimulate?

Public policy may be focused upon the innovation per se. Innovations can be defined as novelty across a number of dimensions of relevance to the economy. These can be new goods, a new quality of a good, new method of production, the opening of a new market, new sources of supply of raw-materials and half-manufactured goods, new organizations, new business models, new services, and new marketing techniques. From an economist's perspective, one needs to differentiate the idea (invention) from the economically viable outcome (innovation).

Or, policy may focus upon stimulating innovations with a certain degree of novelty. Science contributes to industrial development and growth through a wide variety of mechanisms and effects (Salter and Martin 2001). The usual classifications from the OECD, such as the Frascati and Oslo manuals, can be

⁹ This is the same rationale underling public investment into basic science. The public supports long-term basic science, as knowledge represents a broader asset for society. Business tends to support more development-driven research and development.

¹⁰ OECD 2009b. POLICY RESPONSES TO THE ECONOMIC CRISIS: Investing in innovation for long term growth. June 2009. Report proceeded by the Innovation Strategy Portal www.oecd.org/innovation/strategy/portal.

useful for science based innovations whereas the Community Innovation Surveys (CISs) make definitions from the perspective of companies. Smith (2005) provides a useful overview of the conceptual issues related to measuring innovation, including an analysis of the problems of focusing too narrowly upon R&D.

The Business Panel on Innovation often discusses radical innovations, and these can be contrasted with incremental innovations. Radical innovations include scientific and technological breakthroughs that change the nature of products or services, including radically new markets. Radical innovations may contribute to 'technological revolutions' (paradigms) and cause discontinuous and disruptive changes to existing industries and businesses.

In contrast, incremental innovations involve minor changes to existing products or services and knowledge. Still, these innovations should cumulatively improve the performance of these products or services, and thereby provide benefits to society.

Public policy may also focus upon stimulating complex innovation processes, and upon increasing the competencies and focus of organizations. Innovation processes are complex, involve significant uncertainty in market and technological dimensions, and many different actors are involved along the way (Fagerberg et al 2005).

Thus, public policy can focus upon the need for firms and public organizations to develop structures and processes. The reason is that decision-makers must understand what the innovation is, how it occurs, and how to influence these processes within and across organizations.

Inspiration can be drawn from the innovation management literature, which stresses a combination of factors in stimulating firms to innovate and reap the economic benefits. The managerial process can be analyzed in terms of its strategy, capabilities, resources and processes. Modern innovation management texts such as (Dodgson et al 2008) and (Tidd et al 2008) discuss innovation as concepts involving definitions, processes, and managerial structures.

The Panel has primarily stressed that public policy needs to focus more on innovation, in that it offer key opportunities to solve grand societal challenges. This implies that innovation processes in society can be improved, including new connections between a model of business-driven innovation through R&D and a model involving both corporate and social innovation.

So what is innovation policy?

Innovation policy has become a buzzword for policy-makers to stimulate growth, due to the demonstrated impact of knowledge and innovation upon long-term growth. Because of that, innovation policy has become a vital arena for policy-making in many countries and in international forum such as EU and OECD.

Definitions of the types of policy which may influence innovation are often extremely broad. For example, Kuhlman (2001:954) defines innovation policy as 'the integral of all state initiatives regarding science, education, research, technology policy and industrial modernization, overlapping also with industrial, environmental, labor and social policies'. Definitions like Kuhlman (2001), Smits and Kuhlman (2004) and Edquist (2001) strive to define the total set

of public policy initiatives which potentially affect innovation. Another approach is to stress competencies. Georghiou (2006) sees innovation policy as 'any policy which seeks to help firms, singly or collectively, to improve their capacity to innovate'. From starting at the firms' capacities, Georghiou then also identifies many types of relevant policies, but places innovation and firms in the center (rather than policy per se).

These definitions reflect a broader shift in the academic literature and public policy practice. In general, modern discussions of innovation policy focus upon knowledge, learning and systemic benefits, which moves the focus away from traditional economics arguments of market failure, direct cost-benefit analysis and industrial organization (Metcalf 1995).

Much innovation policy started with an emphasis on science, technology and research and development (R&D), with a rationale that government takes on the risks associated with new knowledge creation for society (Arrow, Nelson). This type of focus is still very strong. Many national and European policies still focus upon the role of science and thereby provide funding to universities and firms to find technological solutions.

In the last decades, though, the debate has shifted to a broad range of concepts, linked to modern ideas of innovation. Lundvall and Borrás (2005) argue that innovation policy now encompasses an extremely broad range of institutions, within specific national contexts. Key issues include the role of aggregate demand and coordination of policies across institutions. Borrás (2003) focuses more upon horizontal and vertical integration of policy within the

European Union, especially how the economics of innovation approach provides new insights upon governance of public policy.

Von Hippel (2005) wrote about the Democratising Innovation, based upon his long-standing understanding of the direct impact of users on innovation. Demand side policies have also become more popular, including public procurement (Edler and Georghiou 2007). The EU has discussed broad-based innovation strategy, and ways to focus upon lead markets, as a way to express the latent demand.

The Panel has used the notion that public policy can help change the final results – and help actors and organizations create the intended solution to societal problems. Therefore, we include traditional innovation policies (and targets) like R&D and financing of SMEs but also include new ones like stimulating youth entrepreneurship, public procurement for innovations, and synchronization of services and hardware in public services.

Perhaps one can say that our view is that public policy can contribute to open processes in society.¹¹ This does not mean that public policy sets all the agendas or makes all the decisions. Instead, we need an open governance system, where designing public policy for the future can involve the following steps (Laage-Hellman et al 2009 based upon Nelson 1977) where public policy objectives should be designed to:

- Enhance the understanding of the problems and solutions in appropriate directions. This is based upon the premise that the objective of policy analysis is not to find an optimum. There is no perfect answer. Instead, public policy should focus upon identifying

reasonable actions and direction, in order to shift the socio-economic system.

- Influence the discourse and bargaining of democratic politics. In today's language, that means that stakeholders should be more directly involved in setting policy.
- Design a flexible organizational structure for public policy. The organizational structure should be capable of learning and also of adjusting behavior and programs, in response to what has been learnt.
- Develop policies based upon the interlinked nature of modern society. Public policies today require a mix and interlinked set of interactions between public-private, firm-government, market-non-market, communities and stakeholders.

It is clear from the Panel's ideas that radically new thinking is needed to think about the types of competencies, access to ideas, and improvements that public policy should aim to achieve for corporate and social innovation and for knowledge intensive entrepreneurship that embraces a far wider and more diverse set of people across the EU.

¹¹ Smits and Kuhlman (2004) identify five types of policy instruments:

- Management of interfaces
- Building and organizing innovation systems
- Providing a platform for learning and experimentation
- Providing an infrastructure for strategic intelligence
- Stimulating demand articulation, strategy and vision development

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REINVENT EUROPE

FROM A KNOWLEDGE SOCIETY TO AN INNOVATION SOCIETY

THROUGH INNOVATION

"Innovation is driven by creative collaboration as much as by competition, it is something you do with people rather than to them. This report - incisive, imaginative and inspiring - captures the essence of this approach and so is essential reading for anyone who cares about Europe's future." **Charles Leadbeater**, Leading author on innovation and creativity

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"The report's emphasis on enabling and cherishing creativity as an imperative for innovation, and its assertion of the need to collaborate to create, mark a new stage in EU innovation thinking." **Tom Fleming**, Consultant on creativity and economic development

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