

IV Conference on the FP7 in Spain

The European RTD Framework Programmes: **From Economic Recovery to Sustainability**

12-16 April 2010 / Valencia - Spain

Conference proceedings

eu 2010.es



12 13 14 15 16

FP7: European Innovation
and RTD Transforming
Sectors Week



Centro para el Desarrollo
Tecnológico Industrial



IV Conference on the FP7 in Spain

The European RTD Framework Programmes:

From Economic Recovery to Sustainability

12-16 April 2010 / Valencia - Spain

Conference proceedings



Centro para el Desarrollo
Tecnológico Industrial





Foreword



Máire Geoghegan-Quinn
*Commissioner for Research, Innovation
and Science*



Neelie Kroes
*Vice-President and Commissioner for
the Digital Agenda*

The “International Conference of the Spanish EU Presidency 2010 – The European Framework Programme: from Recovery to Sustainability” was a great success, with close to 2000 delegates taking part in this major EU research event focused on the research PPPs. A number of important conclusions emerged from the conference and they are described in detail in these proceedings.

We wish to thank everyone involved in this important event. It was both rewarding for individual participants and useful for the wider efforts to lift Europe’s research and development performance.

We can only achieve the sustainable and growing economy that Europe needs if the public and private sectors work together. Research Public-Private Partnerships (PPP) are a crucial part of the “European Economic Recovery Plan”. Factories of the Future, Energy-efficient Buildings, Green Cars, and now the new Future Internet PPP, are set to help us achieve the goals of smart, sustainable and inclusive growth. The PPP structure acts as a bridge between research and applications. Their scale

and focus will allow us to pool resources and unite stakeholders around a few key challenges, thus avoiding fragmentation, and ensuring common solutions to deliver large-scale impacts.

In March this year, the Heads of State and Government put knowledge and innovation at the heart of the new EUROPE 2020 jobs and growth strategy. It is a strategy which offers a clear opportunity to tackle societal challenges, such as climate change, energy supply and resource efficiency, health, and demographic change, by integrating research and innovation policies, realising the European Research Area (ERA) and a single market for innovation.

The PPPs are designed to make sure that Europe is well placed for a successful exit from the crisis, by improving competitiveness and contributing to higher employment in better-quality jobs. They do this by targeting a more sustainable environment and, at the same time, by improving the links between research and innovation. They are the fruit of a serious joint effort by industry and the Commission services.

The PPPs have an important role to play in boosting innovation through the development of European platforms. Innovation is the only way to remain a major global economic player. While existing European research is excellent, we often fail to convert this intellectual advantage into a competitive advantage. We need to bridge that gap with clever partnerships like those showcased at this conference.

We also need to actively involve small and medium-sized enterprises (SMEs), as these make up 99% of all businesses in the EU and are an important driver of innovation and job creation. While it may take more effort to include them in funding processes, and to prevent misuse of SME incentives, the price of not taking on this challenge is far greater.

At the end of this process, our goal is to have both sides - technology supply and application demand - working together. Failing to achieve this would lead to more than a benign fragmentation. It would lead to reduced competitiveness and difficulties in meeting the social aspirations of our citizens. The challenge to industry and the Member States is to get ahead in the future Internet race and become leaders in sustainable manufacturing, energy-efficient construction, and green mobility. We need to do this to avoid economic irrelevance and diminished social outcomes.

By asserting a role for the public sector in this area, the European Commission is protecting several important public interests. Firstly, we need to protect taxpayers, ensuring that their money is used efficiently – both in research spending and when governments purchase their own technologies and applications. Governments therefore have a legitimate voice in the development of individual applications and the shaping of standards which might improve public service delivery.

We need to apply the innovations of these PPPs across our research portfolio. We need to keep investing. Let us use the PPPs to help reach the objectives of the Europe 2020: new forms of growth and inclusion that improve the daily lives of all.



Vicente Rambla Momplet

Conseller of Industry, Commerce and Innovation and First Consell Vice President, Regional Government of Valencia

- Competitive strategies for our current economic base, with innovation as a source of added value and business competitiveness in our established sectors.
- Diversification strategies with regard to emerging sectors in order to develop the future by developing new companies and productive sectors in Research and Development
- International strategies that will allow us to take advantage of the opportunities of globalisation to compete and to grow.

The main objective of these policies is to detect business opportunities and the setting up of companies- industrial and services- rich in knowledge- contributing in this way to open discussion in sectors, areas and technologies in the future of the Community.

Needless to say, to achieve such ambitious investment plans in Research and Development requires a combined effort, both in our companies as in the public administrations in regional, national and European spheres.

Innovation and development will be the key factor to boost competitiveness in the midst of a global economic crisis, as well as overcoming this crisis and setting up the basis for a Europe whose economy will be based on knowledge and unity in order to face the new challenges which will be set up in the future. These challenges will be economic recovery and job creation, as well as maintaining our current quality of life.

The European Commission has launched public-private partnerships, the four PPP:

Energy-efficient Buildings, Factories of the Future, Green Cars and the later proposed initiative of Future Internet, as part of the European Union's Economic Recovery Programme. They also hope to find the necessary response and support in all the Member states

The Valencia Community government's priority is to situate the Community, which encompasses a solid group of companies, prepared to face the future, among the region's leaders in these sectors.

The Regional Ministry of Industry, Commerce and Innovation has launched the Regional Model of Competitiveness will be based on three strategic factors, with the focus on the company as the principal vehicle of change.



Juan Tomás Hernani
*Secretary General for Innovation
Spanish Ministry for Science
and Innovation*

quickly in order to respond to the Grand Challenges we face in an efficient way. With this scope, involvement requires simplification, simplified procedures for mobilising resources, granting access to the funding sources, simplifying the work of researchers and companies and streamlining how knowledge translates into results, following the spirit of the European Economic Recovery Plan of President Barroso. Thirdly, by **Inclusion** we mean that science and innovation should have a more high-profile role in the promotion of social cohesion and the fight against poverty. These elements should be also at the heart of the EU 2020 Strategy to set Europe on the path of recovery and sustainable growth, as sought through the PPPs.

The **National Strategy for Innovation** (E²I) constitutes the action plan for the Spanish Government. It puts together a series of elements at the service of the Spanish productive model change, sharing the aim of the PPPs. In line with this plan, actions in the five axis of financing, markets, governance, territorial integration and people, should be considered at the core of the upcoming European Research and Innovation Plan.

This document presents the conclusions of the aforementioned Conference on the Research and Innovation Public-Private Partnerships (PPP), its first steps and its way forward. It is our vision, based in the priorities of the Presidency and fully supporting the spirit of the European Economic Recovery Plan, that the way ahead for PPPs should be based in the following principles: **Relevance, Simplification, Transparency, Continuity, Process review and Impact assessment.**

Science and innovation are crucial elements for the future of our society, providing us with basic capacities to pursue sustainable welfare and wealth.

Europe needs therefore to consolidate the development of the knowledge-based society, fostering the European Research Area (ERA) and boosting a renewed effort on innovation. In this context, Public Private Partnerships on Research and Innovation (PPP) have been launched and are being designed to lead to the creation of streamlined and lean industrially driven research and innovation actions, that at the same time answer the major challenges in the framework of the European 2020 strategy. The present and way forward of these PPPs have been discussed in the Spanish Presidency Conference "The European Framework Programmes: From Recovery to Sustainability", which took place in Valencia in April 2010.

Within the priorities of the Spanish Presidency of the European Council, 'three Is' are being fostered: **Integration**, Involvement and Inclusion. In the first place, by Integration we mean placing R&D and innovation policies at the centre of the European project and improving the ERA governance structures and synergies. One of the key current socio-economic high-impact initiatives within the ERA are these PPPs. Secondly, by **Involvement** we mean that research and innovation programmes should get into action



Table of Contents

Common conclusions for all Public-Private Partnerships	9
Factories of the Future: Abstract, highlights and conclusions	14
Introduction of the PPP and the rapporteur	
Abstract of the structure of the sessions	
Highlights of the presentations and the debates of session I	
Highlights of the presentations and the debates of session II	
Highlights of the presentations and the debates of session III	
Highlights of the closure session and final conclusions of the PPP	
Energy-efficient Buildings: Abstract, highlights and conclusions	18
Introduction of the PPP and the rapporteur	
Abstract of the structure of the sessions	
Highlights of the presentations and the debates of session I	
Highlights of the presentations and the debates of session II	
Highlights of the presentations and the debates of session III	
Highlights of the closure session and final conclusions of the PPP	
European Green Cars Initiative: Abstract, highlights and conclusions	22
Introduction of the PPP and the rapporteur	
Abstract of the structure of the sessions	
Highlights of the presentations and the debates of session I	
Highlights of the presentations and the debates of session II	
Highlights of the presentations and the debates of session III	
Highlights of the closure session and final conclusions of the PPP	
Future Internet: Abstract, highlights and conclusions	26
Introduction of the PPP and the rapporteur	
Abstract of the structure of the sessions	
Highlights of the presentations and the debates of session I	
Highlights of the presentations and the debates of session II	
Highlights of the presentations and the debates of session III	
Highlights of the closure session and final conclusions of the PPP	



Common Conclusions

Public Private Partnership as Industrial Research and Innovation Instruments – The way forward

The Conference “The European RTDI Framework Programmes: From Economic Recovery to Sustainability” has provided an opportunity for discussion on most important issues and next steps for the implementation of the Research and Innovation Public-Private Partnerships (PPPs). It represented a unique opportunity to meet in Valencia with key players from industry, European Technology Platforms, innovation experts and public actors at regional, national and European level. The Conference coincides with the IV edition of the Conference on the Seventh Framework Programme organised yearly in Spain by the Spanish Ministry of Science and Innovation through the Spanish Centre for Development of Industrial Technology (CDTI). In this occasion, it has been organized along with the Research Directorate-General and the Information Society and Media Directorate-General of the European Commission and the Regional Government of Valencia.

More than 1900 delegates from industry, academia and public administrations attended the two-day R2S Conference and its series of satellite meetings. The first day of the main programme was devoted to two of the established PPPs ‘Energy-efficient Buildings’ (EeB) and ‘Factories of the Future’ (FoF), respectively covering the construction and manufacturing sectors. On day two, attention turned to the automotive industry’s ‘European Green Car Initiative’ (EGCI) and the emerging ‘Future Internet’ (FI).

This document captures the highlights and conclusions of the different sessions on PPPs, its first steps and its way forward. Based on the priorities of the Spanish Presidency and fully supporting the spirit of the European Economic Recovery Plan, some common conclusions can be extracted for all PPPs. The way ahead for PPPs should be based in the principles of **Relevance, Simplification, Transparency, Continuity, Process review and Impact assessment**. PPPs should simplify the procedures through a common framework from the point of view of the participants as well as the management structures. These common conclusions go into these principles in depth, explaining the overall context and current and possible next steps of PPPs.



Background

The European Economic Recovery Plan¹ adopted by the European Commission (EC) on 26 November 2008 and endorsed by the European Council on 11-12 December 2008 proposed public-private partnership (PPP) initiatives to develop new technologies and increase productivity of several key sectors as they have experienced significant downturns as a result of global financial recession. These PPPs should also be at the heart of the EU 2020 Strategy and match its ambitions to put Europe not only on the path of recovery, but fostering the European leading role through smarter, sustainable and inclusive growth.

The fundamental principle of this Plan is facing current long term challenges through solidarity and social justice, helping Europe to take advantage in the future so that the European economy is in tune with the demands of competitiveness and social needs, as outlined in the Lisbon Strategy. Immediate reaction was needed to establish a common European response to protect jobs and reactivate growth through cornerstone actions. Europe has bet on key smart investments in the right skills for the greatest impact: investing in selected sectors to create jobs and save energy, addressing immediate competitiveness problems and at the same time **investing in the low-carbon knowledge-based economy of the future, promoting efficiency, productivity and innovation**.

The financial crisis and the subsequent shortage of financial resources, both public and private, were taken into account since they couldn't mean a delay of these smart investments. Involvement and commitment of both public and private sectors were sought in order to assure critical mass and continuity of the Plan, strengthening the efficiency of public investments. Public-Private Partnerships were launched as actions to drive a competitive Europe ready for the knowledge-based, low-carbon economy. Currently, four European initiatives are defined under this frame: Energy-efficient Buildings (EeB), Factories of the Future (FoF), Green Cars (EGCI), launched through the European Economic Recovery Plan, approved in 2008, and the later proposed initiative of Future Internet (FI)².

Based on its previous work, the related European Technology Platforms have endorsed or are currently working on the creation of industry-driven non-profit associations as special purpose vehicles for implementing the partnerships with the EC in the frame of the PPPs. It is expected that these PPPs may lead to the creation of streamlined and lean industrially driven research and innovation actions that at the same time answer the major challenges in the framework of the European 2020 strategy.

After a meeting held in Brussels on 30th March 2009 among the Commissioner for Science and Research and high-level representatives of industry to review progress and discuss priorities for the implementation of the research elements of the PPPs, a joint statement was published³. It was agreed that first calls

¹ COM(2008) 800 - COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN COUNCIL - A European Economic Recovery Plan

² PPP on Future Internet proposed in COM(2009) 479 - COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - A public-private partnership on the Future Internet, following Council conclusions on “Future Networks and the Internet” of 27 November 2008 (Council doc. 15902/08)



for research proposals would be published in July 2009 which could allow the first projects under these PPPs to start in spring 2010. The experience gained with the first actions would be used to develop the longer-term strategy and instruments for cooperation between public and private partners.

As a result of this commitment, the first calls for proposals closed in November 2009 and projects have been already selected. It is welcome that in a record and unprecedented short time the initiatives have started while transparency, competence, equity and fairness principles have been maintained under FP7 rules and procedures. Projects have increased the level of industrial participation and have more innovation elements incorporated. Even if a further analysis is required, this fact is deemed a good signal in the right direction.

In parallel, and following an invitation by the Commissioners Janez Potočnik and Viviane Reding, a Joint Technology Initiatives (JTI) Sherpas' Group (formed by the EC and current JTIs and PPPs representatives) published in January 2010 a report drawing lessons from the initial experience of setting up JTI which provides a blueprint for building the "ideal house" for the future of PPPs. The "Sherpas" further recommended that, in order to maintain momentum, pending the development of the new framework, the cooperation with these industry-driven non-profit associations should be continued and strengthened.

Nevertheless, it should be highlighted that the JTI representation at the Sherpa's group includes only groups directly involved in JTIs while many other industries (mostly SMEs) related to JTI sectors have not been consulted or integrated in the debate. To illustrate that, just to mention that for the Innovative Medicines Initiative (IMI), for instance, EuropaBio (European Association of Biotech companies) and other medium size pharmaceutical industries are excluded of this dialogue. In the long term, this fact could run counter credibility and acceptance of the initiatives. Moreover, further implementation of both PPPs and JTIs should avoid the current situation in which five JTIs coexist with 4 different management and participation models.



Aspects to be taken into account within the best PPP model

The future of PPPs, as industry-driven RTDI initiatives tackling the major socio-economical challenges, should look for maximising EU industrial capabilities in order to allow their best exploitation for the EU industry of tomorrow, enhancing its competitiveness through high impact actions on research and innovation. On the other hand, trustable long lasting PPPs require some principles to reach the maximum consensus. Taking this background into consideration, this position paper aims at stressing the need to foster this process based in the **following basic principles**:

Relevance: PPPs and the social challenge

From the beginning, as described before, PPPs have been defined as an opportunity to face grand long term European socio-economic challenges. Therefore, the roadmaps and milestones in the development of each PPP should always keep focussed in its expected social impact in transforming sectors: large scale final objectives in terms of growth, employment, wealth, sustainability and transition to a green economy. These objectives have to be kept as the light guiding the PPPs roadmaps and frameworks to fulfil its specific thematic RTDI goals.

To this respect, it is of great importance to keep the long term vision of PPPs as a tool to enhance the competitiveness of European industry in selected and limited sectors with relevant contribution to social needs, energy efficiency and productivity. This way, these partnerships will internationally be recognised as instruments able to maximise EU industrial capabilities, giving Europe the advantage of an accelerated economic recovery led by industrial research and innovation.

In addition, the spirit of adapting our economies to long term socioeconomic challenges of European dimension should be emphasized through PPPs that provide coverage of Europe at large, favouring the widest incidence of the initiative in geographical terms, gathering for homogeneous and competitive European markets in the future and paying special attention to the involvement of sectors as a whole, specially SMEs, since they are a major asset in Europe and will remain key actors in the growth and jobs strategy.

High impact at European level, measurable in terms employment, environmental impact, and involvement of industrial stakeholders is the first basic pillar of PPPs. Therefore, the definition of the PPPs itself results in a limited number of PPPs to be implemented.

Significant points of this principle are:

- PPPs are an opportunity to face grand European socio-economic challenges, providing **coverage of Europe at large**, favouring the widest incidence of the initiative in geographical terms.

³ <http://ec.europa.eu/research/index.cfm?pg=newsalert&lg=en&year=2009&na=ppp-310309>



- PPPs are a tool to enhance the competitiveness of European industry in **selected and limited sectors** with relevant contribution to social needs and productivity, maximising EU industrial capabilities: economic recovery led by industrial research and innovation.
- Special attention for **SMEs**, since they are a major asset in Europe.

Simplification

As stated in the companion document⁴ of the European Economic Recovery Plan, the Framework Programme is the major instrument for building the ERA and stimulating national researchers to participate in it is an objective of most Member States. This cannot be forgotten while defining the next steps of PPPs: it may be possible to develop tailor-made provisions accommodating the special needs and nature of public-private partnerships in the field of industrial applied research while simplification is pursued.

PPPs should be implemented as much as possible under simplified procedures from the point of view of the participants as well as the management structures. For all PPPs, a single set of (simplified) common "Framework Programme – like" rules should be considered concerning procedures and legal provisions regarding participation such as IPR issues, eligible costs, flat rates, lump sums, in kind contributions, overheads calculation, proposal submission procedures and evaluation, participation, etc. A common framework for industrial driven research should be established, taking into consideration that all the initiatives funded through the Framework Programme have to share its general rules.

Significant points of this principle are:

- Common specific framework for all PPPs.
- Single model: clear set of conditions and rules with simplified, common and streamlined procedures.
- All the initiatives funded through the Framework Programme have to share its general rules.

Transparency

Regardless of the implementation scheme chosen for the future of PPPs, the principle of separation of private and public roles must be followed. Thus, private sector should lead technological research and innovation strategy, as well as advise on annual prioritisation lines. On the other side, public sector would lead the implementation of calls, i.e. call releasing, evaluation process and project follow up. This way, accessibility and fairness, with non discriminatory principles, could be guaranteed making a proper use of the public funds based on previous experience. That means that outsourcing public money to external bodies should not be an option.

It would allow to keep the focus on the mobilisation of private investments for research and innovation in Europe, complementing the public investment and increasing its critical mass and effectiveness. PPPs are the channel to assure efficient investments into European-wide industrial

research and innovation close to the market priorities at the service of socioeconomic challenges, stemming from their economic sectors, including SMEs. Therefore, they would help to establish industry-driven consortia and the preparation of high quality project proposals involving openly to all potential stakeholders while maintaining transparency in the whole process.

Provided that European public money is being and will be invested in the PPPs and regarding the management of these initiatives, Member and Associated States representation should be at the level of Management Committees, following the model of the Framework Programmes, in order to guarantee the required confidence for a maximum acceptance of the initiative and coordination with national initiatives. Moreover, the good practice of monitoring the implementation of calls through panels of independent observers should be maintained, keeping in mind those stakeholders that, having the possibility of participating and contributing to PPP in theory, do not participate. This aspect would increase the image of transparency and trustability required for a maximum acceptance of the initiative.

At the same time, the private part of PPPs should contribute to the evaluation process of research projects, proposing lists of experts duly registered within expert database for evaluating project proposals submitted to open calls under their respective PPPs. When selecting expert evaluators, the European Commission shall appoint 50% or more experts with industrial background in order to safe-guard industrial relevance of future research projects. Under the strictest confidentiality, reviewers with industrial background shall facilitate a better compliance of the projects' outcome with the industry strategy as defined in the Multiannual Roadmaps of PPPs, giving the review of projects a plus in quality and assuring the broader application of results on future markets.

Through the entire process, industrial associations representing PPPs, underpinning the spirit of the European Economic Recovery Plan, would promote together with the European Commission the principles of sound financial management and transparency of the process.

Significant points of this principle are:

- Outsourcing of public money to external bodies should not be an option.
- Accessibility and fairness of the process, with non discriminatory principles.
- Representation of Member States at level of Management Committee in order to guarantee the required confidence for a maximum acceptance of the initiative and coordination with national initiatives.
- Monitoring the implementation of calls through panels of independent observers, being aware of those that having the possibility of participating and contributing to PPP in theory, do not participate.

⁴ COM(2009) 34 final - Implementation of the Lisbon Strategy Structural Reforms in the context of the European Economic Recovery Plan



Continuity of the commitment

In order to assure the desired impact of PPPs, a steady flow of investments following their roadmaps for research and innovation must be guaranteed from both the public and the private part of the partnerships. While tackling long term socio-economic challenges, long term commitment both from the industry and the Commission is required.

Continuity for the four already running initiatives must be assured beyond 2013. The excellent and fast work of the Commission together with the industry in the last months and the commitment of several industrial non-profit associations are the essential seed to secure the next steps of PPPs, but further action and agreements are required.

In the case of EeB and FoF, it is welcome that E2BA (Energy Efficiency Buildings Association) and EFFRA (European Factories of the Future Research Association) aim to be the private part of the PPPs to implement these two initiatives. They are ready to agree with the EC their participation in the whole processes of the PPP implementation following the basic principles of transparency, accessibility, fairness and simplification under a common model. Both associations are open to new members and in any case are committed not to become “closed clubs”, encouraging open and transparent call for proposals and chasing common procedures and rules, including evaluation criteria and selection procedures. In consequence, these two initiatives are proposed as test beds for establishing a common way for the implementation of PPPs beyond 2013.

Significant points of this principle are:

- Long term commitment both from the industry and the Commission is required.
- Continuity for already running initiatives proposed under the Economic Recovery Plan (EeB, FoF and EGCI) and the last one approved of Future Internet must be guaranteed beyond 2013.
- Considering “Energy-efficient buildings” and “Factories of the Future” PPPs are the most evolved, they are proposed as test beds for the implementation of all PPPs.

Process review

At the present stage of implementation of PPPs, it would be welcome that the Commission starts an analysis of the progress so far of the four PPPs already launched, in order to take advantage of the lessons learnt and taking into consideration the different implementation speed of each initiative.

On the one hand, evaluation of the already gained experience by the joint work of the non-profit associations E2BA and EFFRA as industrial representatives and the Commission could be of great help in the implementation process of PPPs in general. In addition, lessons should also be drawn from the experience of the existing JTIs.

On the other hand, PPPs should foresee mechanisms of periodic evaluation, with clear indicators. Consultancy should be extended beyond those industrial groups already participating

in order to enrich the debate. In this regard, any refinement of PPPs initiatives would be adopted taking into account the whole opportunities and strengths at European level and take advantage of potential newcomers.

Significant points of this principle are:

- Start an analysis of the progress of the four PPPs already launched in order to take advantage of the lessons learnt.
- Evaluation of the experience gained by the non-profit associations E2BA and EFFRA as industrial representatives and the Commission.

Impact assessment

PPP should explore the potential of an innovative knowledge and results impact transfer mechanism, looking for ways to achieve the society at large. Since the final objectives of PPPs are of great socioeconomic importance, the initiatives should assure that research and innovation results reach the market and have the proper profound impact in the social needs.

Social assessment of the socio-economic impact achievable by each PPP in the short-medium and long term should be foreseen in the implementation roadmaps, including indicators of productivity level, employment generation and/or preservation, wealth to be created, leading role at world level, etc.

Indicators and milestones should be defined in order to foresee supervision of results related to the large scale objectives of the PPPs such as: Is the economic recovery along with a new knowledge based industrial model? Has the PPP contributed to a sustainable economic recovery? To what extent have been the social challenges faced? Is the European society already aware of the profits achieved?

Significant points of this principle are:

- Social assessment of the socio-economic impact achievable by each PPP in should be foreseen.





Conclusion

The EU economy is going through a global economic downturn, the biggest since the Second World War. This is having a wide impact at all social levels: households, employees, businesses and public finances throughout the Union. By endorsing the European Economic Recovery Plan proposed by the Commission in 2008, Heads of States and Governments equipped the European Union with a strong tool to face the path to growth and jobs in the next years. When fully implemented, the Plan will have helped the EU economy to return to a growth path in the fastest way possible, setting Europe in the path of a knowledge-based, sustainable economy.

The situation had the clear risks that the current economic downturn could lead to a weakening of investments in RTDI, and primarily those of the private sector, through a reduction or postponement of key projects which aimed to give answers to the major challenges and were ready to be launched. As the situation is still not solved, **it is vital that immediate priority is given to measures which enhance productivity and which continue strengthening the European research and innovation system. PPPs are one of the main examples of such measures.**

We must join efforts to keep fostering these initiatives and to open debate including the European Commission, the European Parliament, Member States and involved industrial sectors on the way forward of PPPs implementation under transparent and simplified common procedures in which the aspects described above should be the priority, highlighting:

- Implementation of all PPPs with a unique and simplified model from the point of view of the participants as well as the management structures, assuring transparency.
- To this purpose, PPPs “Energy-efficient buildings” and “Factories of the Future” are proposed as test beds for the implementation of all PPPs.
- Long term commitment both from the industry and the Commission is required and stability for the running initiatives must be guaranteed beyond 2013.





Factories of the Future

Factories of the Future (FoF) PPP, launched under the European Economic Recovery Plan, addresses the development of the next generation of production technologies that will be applied from 2015 onwards. Its budget amounts to €1.2 billion between 2010 and 2013, to be equally shared between the European Commission and the private sector.

The Factories of the Future initiative is intended to help EU manufacturing enterprises, specially SMEs, to adapt to global competitive pressures by improving the technological base of EU manufacturing systems.

Achieving continuous growth and sustainability depends on a long-term shift from cost-based competitive advantage to an approach based on high added value. It requires European manufacturing to expand its technological base and develop a number of new enabling production technologies with cross-sectoral benefits.

Emerging ideas have to be transformed rapidly into new products and processes, and the Factories of the Future initiative will provide manufacturing SMEs with access to the funding and collaborative research capacity needed to pursue high-risk innovative manufacturing technologies.

The activities of the Factories of the Future PPP will concentrate on the development and integration of engineering technologies, ICT and advanced materials for adaptable machines and industrial processes. In particular, the initiative is expected to deliver:

- a new European model of production systems for the factories of the future;
- ICT-based production systems and high quality manufacturing technologies;
- Sustainable manufacturing tools, methodologies and processes capable of cost-efficient shaping, handling and assembling of products.



Introduction to the rapporteur **Dr. Rikardo Bueno** is the Director for the Scientific Policy in Fatronik – Tecnalia where he has been working for 20 years, since its beginnings as a small industrial R&D unit. The organisation has become, together with the rest of Tecnalia, one of the biggest players in

private R&D organisations in Europe with around 1500 researchers. Fatronik-Tecnalia has always been active in European research, mainly in the manufacturing and industrial systems fields, and Dr. Bueno coordinated a recently finished

integrated project (NEXT – Next Generation Production Systems) and participates in the ongoing activities of the European Technology Platform Manufacture and its related PPP “Factories of the Future”, where he co-chairs the Ad-hoc Industrial Advisory Group.

Abstract of the structure of the session

Factories of the Future sessions were structured in three main parts: first session was aimed at analyzing the industrial needs through the presentation of industry on the competitive and sustainable European factories of the future. For these overviews, three representatives of industry presented their contributions regarding the sector’s needs.

The second session was focused on how to cover the industrial needs identified, for which the Factories of the Future multi-annual Roadmap was presented. Besides, a Round Table including representatives from industry, universities and research centres analyzed the way to involve SMEs in the Factories of the Future research areas

The last session was devoted to the ways to improve the collaboration between research and industry, analyzing their common needs and covering each other’s lacks. Besides, proposals for the PPPs beyond 2013 were analyzed, through the involvement of stakeholders and the definition of the role of industry and research organizations.

Session I - Industrial needs and vision: towards the FoF PPP implementation

The great importance of the manufacturing sector in terms of contribution to the European economy can be seen in the following figures:

- 66% of the private R&D investments is developed in the manufacturing sector;
- 30 million of jobs are directly related to manufacturing, while additional 70 million come from related services;
- Turnover of 6.323 billion € comes from manufacturing;
- 30% of value added in EU economy is given by manufacturing.

The figures above show that the European social challenges are faced by the manufacturing sector: this sector has a huge potential to generate employment, wealth and a better quality of life for the citizenship. As a consequence, it can be considered as one of the driving force of the European economy, and its importance is shown in several aspects such as the impact on the environment or in the support given to the driven economy.

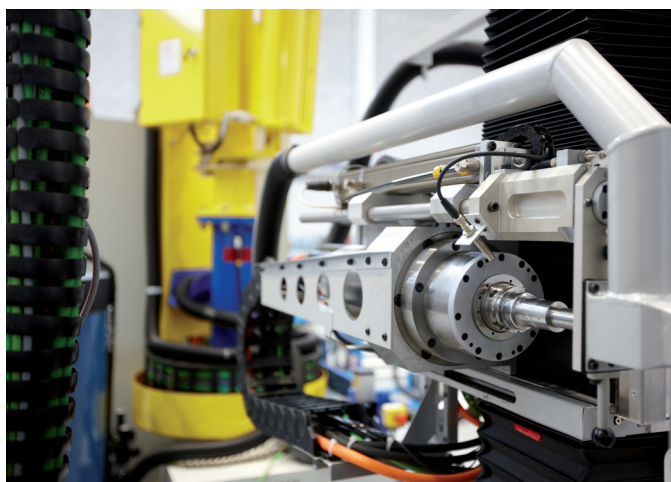
Manufacturing addresses all the dimensions of the sustainability of Europe, fulfilling the economic, social and ecological objectives: equity and poverty reduction, efficiency, growth, management of the natural resources and conservation. A competitive and sustainable manufacturing can be



achieved through a European research and innovation policy addressing societal changes, in order to cover issues as clean energy, sustainable industrial production and transport, ageing population and public health.

All the above can only be achieved through an interaction of different actors in order to achieve a knowledge-based innovation, i.e. achieve economic results out of the research activities, pooling its resources on its strengths. This way, the innovation system will increase efficiency to pave the way for successfully exiting the current economic recession and becoming more efficient.

The first call of the Factories of the Future PPP received a positive feedback from the industry, since they have seen the great potential for strengthening and transforming the manufacturing core of Europe through a knowledge-based innovation in manufacturing. This will be crucial to the sustainability of the European economy, and can only be achieved through a strong cooperation between public and private fields and an agreement of common objectives that would lead the sector to an upper level.



© Fatronik-Tecnalia

Session II – RTD capabilities to answer the industrial needs and support the vision

On the basis of the launch of the Factories of the Future initiative as the European response to the economic recession, which addresses at the same time competitiveness and sustainability, its Strategic multi-annual Roadmap has been prepared by the industrial representatives in the Ad-Hoc Industrial Advisory Group created in March 2009, with the goal to help define the research content of this initiative. The document is also based on a wider stakeholders consultation and it lays out the industrial research priority areas for the implementation of the Factories of the Future PPP.

The multi-annual Roadmap is aimed at encouraging industries to develop and demonstrate innovations leading to its sustained competitiveness, on the basis of the role of Europe as

the global main player in manufacturing to which industries must contribute, and with the objective of achieving a competitive and sustainable manufacturing.

Factories of the Future multi-annual Roadmap faces 4 main R&D challenges (sub-domains):

1. Sustainable manufacturing.
2. ICT enabled intelligent manufacturing.
3. High performance manufacturing.
4. Exploiting new materials through manufacturing.

The multi-annual Roadmap is aimed at increasing the number of European companies (specially SMEs) developing innovation activities and, at the same time, promoting the collaboration between the universities, research centres and the industry, with the latter as a driver for the transformation of the sector. The involvement of all the knowledge chains will be crucial for ensuring synergies among the different actors when implementing research.

SMEs form the 90% of the European manufacturing industry and they need to face the global competition, for which an effective collaboration with international key players and research organizations is a significant factor when achieving economic and environmental sustainability. Besides, SMEs need their results in products or services at the short-term after a project end, in order to help the industrial transformation by a knowledge-based manufacturing, which will provide the commercial solutions leading to added value generation through the implementation of the results as improvement in production processes.

As conclusion, based on the research focused on the needs of the European manufacturing companies and specially SMEs, the impact foreseen is the reinforcement of a competitive market position through an adding value that will lead to the application of new production methods, processes and technologies in all Europe and beyond, bringing wealth creation.

Session III – The way ahead and look at the future

Cooperation between industry and research is a must to successfully address the challenges of a sustainable manufacturing.

One of the main reasons is that the industry, with its typical economic approach, cannot generate all the knowledge needed by themselves thus it needs access to other sources of knowledge. These sources consist on the knowledge produced by research organizations, characterized by being carried out more efficiently, with lower risk than if produced internally and through well-trained human resources. All these factors ensure an effective knowledge transfer. Furthermore, the special features of SMEs, which in some cases are not



able to face all the demands, make their need of research even more significant, and this is a lack that can be covered through collaboration.

On the other side, research organizations and universities receive a significant value from the collaboration with industry, mostly due to the need to show the impact of their activities in the market. The need to ensure the good acceptance of their students forces the academia to provide an appropriate market-oriented training.

Following the last 5-10 years' evolution of the collaboration between research and industry, the need of cooperation between these two actors is still evident in order to deal with the common interests, such as the applied research (vs. fundamental), multiplication of the knowledge generated and the share of resources. Combination of advanced education and practice training is also a significant value to be obtained from this cooperation, which also provides an international knowledge network.



It is obvious that there still are barriers and limitations for the collaboration, due to several factors such as the differences in time constants, alignments of both sides' interests, business models, exploitation rights or skills of each actor's human resources, but they need to be overcome, and the innovation policies must focus on this aim.

Furthermore, there is a need to pay more attention to all the integrated process of the innovation cycle, from the basic research to the valorisation phase. The latter shows a need to ensure that the research results obtained generate the expected economic and social value impact.

Finally, public funding programmes and organizations play a relevant role in research, strongly influencing the framework conditions that promote innovation. An efficient and effective European innovation system is crucial: a higher level of cooperation and alignment between policies, programmes and actions at European, national and regional level is needed.

Conclusions of the FoF Initiative

After the announcement of the European Economic Recovery Plan comprising the PPP initiatives at the end of 2008, the first call for the Factories of the Future initiative was launched in 2009. The first call implementation has been successful due to diverse factors: the quick implementation from the call to the signature of the contracts, the participation of industry and, more specifically, of SMEs, the good balance between countries, the lack of oversubscription and the participation of the industry in the definition of the research topics. All these positive aspects pose a demanding challenge for the remaining calls, in order to keep and even improve them.

As the main conclusion of the conference, the support from all stakeholders (industry, academia, research organizations and public administration) to the Factories of the Future initiative has been strengthened. The specific characteristics of this research programme, closer to industry and SMEs and with clear demonstration aspects show a clear benefit to industries, ensure the application of the research effort and address clear needs of the society regarding industrial competitiveness. Therefore the continuity of FoF beyond 2013 is requested by the stakeholders.

The FoF PPP initiative supports industrial research for a wide number of companies in Europe by means of public funds. Therefore transparency and equal opportunities for all the participants in this initiative is a must. Transparency must be ensured at the diverse phases of the process: roadmapping, programme definition, calls for projects and evaluation. Even if representatives of the private side play a role in the process, full transparency must be ensured. On the other hand, equal opportunities for the involved stakeholders has to be ensured as well. For this purpose, openness of the process must be guaranteed, specially when launching competitive calls for research projects.

A distinctive factor of the PPPs is their expected impact. The outcome of the research performed under the FoF programme must reach the society and have an economical impact in the involved industries. Therefore, regarding FoF, there is a request to show a set of clear impact indicators in relation to the EU 2020 strategy and societal challenges: smart, sustainable and inclusive growth based on knowledge and INNOVATION (SMEs), energy efficiency and industrial JOBS, societal WEALTH and QUALITY of LIFE. The Factories of the Future initiative can greatly contribute to these main goals of the European Union. However, these contribution must be explained in a more explicit way. This clear description of the expected impact may pave the way to the further development of the initiative.

An initiative such as the FoF needs the support and commitment of diverse types of stakeholders working together pursuing a shared goal: to maximise the economic impact of the research activities, i.e., to innovate in the manufac-



turing industries. This requires a clear support (both financial and in ensuring openness and transparency) from the public administration, from both the European Commission and the Member States and their agencies. It also asks for the active role of the European manufacturing industry in the definition of research priorities, in the R&D and demonstration activities and in bringing research results to new products and processes. Finally, the excellence and relevance of the research performed has to be ensured together with the innovation to be achieved through the demonstration and implementation of the research results, through a strong participation and commitment of the RTD organisations. With a clear support and commitment of diverse stakeholders: public administration, industry and research organizations.



Energy-efficient Buildings

The EeB PPP for research has been launched with a financial envelope of € 1 billion under the frame of the European Economic Recovery Plan to boost the construction sector. It aims at promoting green technologies and the development of energy-efficient systems and materials in new and renovated buildings – all of this, with a view to radically reduce their energy consumption and CO2 emissions. The programme is financed jointly by industry and the European Commission using the instruments of the Seventh Framework Programme for Research (FP7).

The construction sector is crucial to meet the challenges that have been set by Europe for smart growth and sustainable development, recently stated in the Communication «Europe 2020» European strategy” that include: investment in R & D of 3% of GDP and the climate and energy goals known as 20/20/20. An industrial association (E2BA) has been launched under the umbrella of the ECTP, involving the construction sector and the energy-efficient buildings community with the objective of launching the PPP and speed up research on key technologies and develop a competitive industry.



Introduction to the rapporteur - **Ignacio Calvo Herrera**, Civil Engineer by the Universidad Politécnica de Madrid (UPM), Spain. Currently, he is Director of the ACCIONA Infraestructuras R&D Technological Centre, which counts with 160 researchers, 13 research groups in different fields and manages R&D activities of 4 different business lines of ACCIONA group: Acciona Inmobiliaria (Real State), Acciona Infraestructuras, Compañía Trasmediterránea (Ship Company) and Acciona Servicios Urbanos (Urban Services).

nos (Urban Services). He has a great experience at the management and coordination of National and European R&D projects. Mr. Calvo is the current President of the E2BA.

Abstract of the structure of the sessions:

The sessions dealing with Energy-efficient Buildings were structured in three main parts:

- **The first session** was aimed at presenting the vision of industry and the community on how to accomplish and go beyond the goals set forth the building sector for 2020 and 2050. These include addressing climate change issues, EU energy independence and the need to establish a stable and long term Public-Private Partnership in order to speed up research on key technologies and develop a competitive industry in the field of Energy-Efficient Buildings.
- **The second session** was focused on how to address the needs identified by industry, in line with the Energy-efficient Buildings multi-annual Roadmap developed within the framework of the EeB PPP. Besides, a Round Table including representatives from industry, universities and research centres analyzed the main research challenges in the field of Energy-efficient Buildings.
- **The third session** was devoted to explore opportunities towards the PPPs in FP8, building on the experienced gained since the launch of the EeB PPP. The strategy to increase the involvement of national stakeholders was presented and the role of industry, SMEs and research organizations in the PPPs was analysed with the goal of improving the collaboration between the different stakeholders. Proposals for the PPPs beyond 2013 were discussed.

Session I – EeB – Industrial needs and vision: towards the EeB PPP

E2B Association. Mr Ignacio Calvo:

- **Construction is of key economical** and environmental importance for EU and is crucial to meet the challenges highlighted by EC in the European 2020 Strategy. E2BA jointly with ECTP have managed to inform and convey the importance of EeB to the EC and the Member States. All this work has been well received by the EC and reflected in the European Economic Recovery Plan.
- An **Ad-Hoc Industrial Advisory Group**, initiated by the European Commission and E2BA and including stakeholders in the whole value chain in order to collect the needs and expectations of industry, gathered within a Multi-annual Roadmap for the period 2010-2013 and beyond.
- **There will be resources dedicated** to calls for proposals in the area of Energy-efficient Buildings for the period 2010-2013 under FP7; however research in this area can not be exhausted in such a short time frame and E2BA is ready and willing to work on the continuation of the PPP in FP8.



- **The EC established a Sherpa group** composed of representatives of the EC and of the existing 5 JTI and 3 PPPs under the Recovery Plan. Following the conclusions of the Sherpa's work, the EC is now working to establish the appropriate legal framework for research PPPs.

Bouygues - Mr. Gaëtan Desruelles.

- **The Construction sector** share with all other actors the desire for concrete results and considers very important to have a tool that is as functional and efficient as possible
- **The traditional role of a construction company**, as integrator of solutions and equipment driven by technical quality and economic considerations, is changing to address also the present challenges of energy availability & costs and climate change.
- In order to address the **Energy Performance of buildings**, the whole building life cycle must be considered: construction, exploitation, maintenance and energy management on the longer term.
- **Construction companies** have to work hand in hand with materials producers and others stakeholders in the value chain to develop innovative solutions that will have direct impact on energy savings and lowering CO2 emissions. Construction companies have now become global companies and are present in all the stages of a project.
- **The Information and Communication Technologies (ICT)** have an important role to play not only at building scale but also at city scale.
- **There is a need for** training of the human resources at all stages (procurement of materials, the marketing and technical experts, construction and management teams), standards and norms.

European Construction Technology Platform – Mr. Luc Bourdeau

- **Construction sector** → The biggest industrial employer (10.4% GDP) and a large influence on the whole economy (48,9 millions workers depending on construction). Direct and indirect impact on economic activity; Long term economic and social benefits of investment → £1 spent on construction output generates directly → £2.84 in total economic activity in this large sector mainly locally and through SME's;
- **EeB: A major world - wide challenge** → Buildings = major potential for energy/carbon savings; > 40 % of energy consumption and 30 % of GHG emissions; **Roadmap** → Retrofit the existing building stock (200 million houses); Develop future positive energy buildings/districts; Integrate new technologies (including RES); **Innovation by research** → Recovery Plan EeB PPP call 2010: strong involvement of industry and SMEs (24%) from the whole value chain (ECTP/E2BA: 210 Members); Construction sector ready to collaborate towards an "ideal house" for PPPs in FP8.
- **Infrastructure for Europe: Challenges** → Mobility (energy saving, safety, intermodality); Existing infrastructures are getting old/obsolete: Roads; Water supply systems (leakage, water quality); Risks: flooding; **Roadmap to a reliable Infrastructure** → Greening infrastructure, Infrastructure for a sustainable and competitive economy
- **Health and Ageing Society: Challenges** → Ageing; Short-fall of places ; Workforce diminishes; New needs for services; Health → Indoor air quality; Healthy built environment;

Roadmap for Care and Services → Awareness from 1980-2005; Strategic Research Agenda 2010-2011

Session II – EeB- RTD capabilities to answer the industrial needs and support the vision

Definition of the EeB roadmap, Mr. Stefano Carosio.

- **The industry vision and long term strategy** (Trends and scenarios, Industry objectives and vision, Strategic Targets (Recovery Plan, SET Plan)) → **Key pillars**: Systemic approach (Globally optimised, locally designed); District potential; Geoclusters.
- **Mobilisation of the entire value and innovation chains** to address the R&D challenges.
- **EeB PPP (2010-2013) as first wave** of a long term industrial strategy.
- **Roadmapping process**: Analysis of ETPs/JTIs SRAs/SET Plan Roadmaps (SETIS) ... + over 200 contributions from E2BA members highlighting research challenges and opportunities.
- **Validation of the roadmap** in two public rounds and participation to public events organised all over Europe; feedbacks formally received by ETPs and other key stakeholders.
- **Contribution at local level including broader SME involvement** → Key role of E2BA National Liaison Points, fully leveraging on the National Technology Platforms reach, during the consultation.

Neutral/Energy-positive New Buildings. Mr. Gerd Hauser

- **Prediction**: from 2020 onwards, all new buildings in Europe will be more or less plus energy buildings = mini-power-stations!
- **Plus energy buildings**, are buildings featuring: high energy efficiency; intensified use of renewable energies; producing more final energy than they consume.
- **Elements of plus energy buildings**: reduction of transmission losses (energy-efficient windows; reduction of thermal bridges); reduction of the ventilation losses (sealing of air leakages by prefabricated systems,); increase of solar gains (glazing with high solar transmittance; integrated PVs...); increased efficiency of heat and cold generation.

The enabling role of ICT in transforming existing buildings into energy-efficient ones. Mr. Bruno Smets

- **Lighting** accounts for 12% of the total energy consumption in a residential building and for almost the 25% in a commercial building.
- **LED lighting**: LED technology enables the development of intelligent lighting; allowing for more efficient optical manipulation, allowing lighting to become embedded in solutions...
- **Intelligent** electrical lighting; intelligent daylight and electrical light control; lighting embedded in total solutions.
- **Role of ICT in the built environment**: from centralized intelligence deciding on where to use the available energy: dimming the light at peak demand.

New challenges in Nanotechnology, Materials and Production. Mr. Angel Lopez Buendia

- **New challenges in materials for achieving Energy-efficiency Buildings** → **Performance** (Mechanical resistance, Less Embodied Energy, Durability...); **Architectural Solu-**



tion; Health & Maintenance (Self-cleaning, Healthy) **Habitability** (habitat, comfort, aesthetic) **Reuse/deconstruction; Production** (eco-efficiency, Production, Natural resources)

- **Challenges:** Envelope and components → Low energy demand (New and existing buildings); Systems and Equipment for energy use → Flexible and efficient equipment; Storage of Energy; Quality Indoor environment → Quality Indoor Control Materials for comfort and healthcare; Design/ Integration of new solutions; Integrated ICTs for existing and new buildings. . .

Refurbishment to transform existing buildings into EeB Envelope- Mr. Roger De Block

- **Renovation of existing buildings:** Almost 60% of buildings in EU are more than 30 years old! → Refurbishment of existing buildings is possible in most of the cases, certainly partially; Roofs, walls, floors and windows have to be renovated with adapted solutions; Energy & environment, confort & aesthetics and ease of installation are the strong drivers of innovation.
- **Innovation** → **Super-insulating materials** → vacuum insulation; Aerogels; Triple glazings → a glass facade that stores/reflects the heat; **External Thermal Insulation Composite Systems.**

Session III –EeB Way Ahead and a look to the future

E2B National Liaison Points: Engagement of Member States and stakeholders. Mr. Olaf Adan

- **NLPs:** form a liaison between the activities of E2BA at European level and those at local level in Member States run by National Technology Platforms, thus facilitating large scale follow-up actions all over EU and rapid dissemination of research results. **Main tasks:** **1.** To disseminate information to the national community **2.** To channel the national priorities for proper implementation in the E2BA agenda **3.** To foster a national network of all the stakeholders in the Energy-efficient Buildings value and innovation chains.
- **The National Network** → Fully leveraging on National Technology Platforms including the following participants: Industry representatives; Branches, umbrella organizations of SME's (local involvement); National Government (policy and financing, EU influence); Programming organisations; Local and regional public authorities (cities, regions, provinces); Energy suppliers; Knowledge network (RTOs and Universities), while establishing links and dialogue with local representatives in Programme Committees NMP, Energy, ENV, INFESO;
- **E2B Communication tools:** Periodic E2BA news; NLP website and forum; national mechanisms → A national newsletter and NLP website; Joint events with national bodies.
- **The present Network:** 16 NLPs (UK, France, Spain, Belgium, Italy...)

The role of industry and research organizations. Large industry: Mr. Alain Marti, EDF R&D

- **EDF's vision for the future** → 1- Fighting against the climate change; 2- Facing a lack of energy; 3 – What to do?; 4 – Targeting the buildings
- **Three steps towards Energy Efficiency in Buildings** → 1 – Reduce energy demand; 2 – Use high efficient systems and control; 3 – Use local Renewables

- **The role of industry and research organisations:** 1. Need of cooperation; 2 – Main barriers: an approach which is both systemic and collaborative; 3 – Need of long term and stable research program: a key factor for a great change
- **The PPP instrument:** the challenges; the management; simplicity; on the good path

The role of Industry and research organizations. Research Organization: Mr. J. Urreta. Tecnalia

- **Common interests/targets for Energy-efficient Buildings of the industry and R.O:** Decrease the environmental impact by reducing the energy intensity; Increasing Energy Efficiency → decreasing industrial and building maintenance costs; Increase security of energy supply by decreasing EU's dependency;
- **Main barriers/limitations for Energy-efficient Buildings:** Industry with short-term vision : R.O having long-term; Industry having market vision/understanding whilst research organization technological
- **Share vision to overcome barriers:** Improve Synergy; Significance of covering the innovation cycle Projects providing solutions to the whole value chain
- **The Construction sector:** Has a strong potential of innovation; Has a high technological inertia; Involves many different players with different visions; Has a strong impact in energy consumption, GDP, employment, GHG emissions,... in Europe; Is mainly SME-based
- **Research Framework:** PPP instrument as opportunity and recommendations for FP8: The PPP as a tool to align all players in the sector towards a mid and long term target to create impact

The role of Industry and research organizations. SME: ClimateWell- Mr. Mats O-Fällman

- **There must be a:** definite need and willingness for collaboration; definite wish for result; tangible proof of result; and a straight and transparent relation between research institutes and the market.
- **The research sector shall be directed towards the needs of the industry and the Market:** collaborate with the state and technically advanced companies engaged in infrastructure, work on security items like – climate change, environment,...
- **High quality and innovative projects** shall have financial priority
- **EeB PPP:** A useful instrument to achieve tangible results in terms of "Energy-efficient Buildings." A legal framework within which the industry and service organisations can work with the EU under defined conditions. A way to enhance the research sector towards useful projects and speed up the implementation of new materials, systems and concepts.

Conclusions of the Energy-efficient Buildings Public Private Partnership

Construction sector:

- **The biggest industrial employer**
 - **10.4% of GDP** and 49.2% of Gross Fixed Capital Formation (FIEC, 2008)
 - **30% of industrial employment**, 7.6% of total employment (16.3 million operatives), 3 millions enterprises (**95% SMEs** with <20 workers, local markets, low innovative)



- A **large influence** on the whole economy
 - **48,9 millions workers** depending on Construction
 - The **buildings/infrastructure** supplied by the Construction sector **serve a lot of other industries and services**
- The Construction Sector had traditionally a **low rate of innovation and low investments in R&D** → This situation must change by: encouraging the development of new business-oriented technologies, increasing competitiveness and productivity, improving working environments and increasing security

Energy-efficient Buildings: major world-wide challenge

- Buildings = **major potential** for energy/carbon **savings**: today more than 40 % of energy consumption and around 30 % of GHG emissions.
- E2BA jointly with the ECTP have managed to inform and convey the importance of energy-efficient buildings to the EC and the Member States. All this work has been well received by the Commission and most important all this has been reflected in the Economic Recovery Plan.

Energy-efficient Buildings PPP – A reality

- Industrial Association created **open to all stakeholders** ◊ **E2BA**
- Ad-Hoc Industrial Advisory Group launched ◊ **Multiannual Roadmap**
- 1st EeB call launched: strong involvement of industry and **SMEs**
- Recommendations for future PPP instrument ◊ **Sherpa group** → The Commission services are now working to establish the appropriate legal framework that suits the conditions of the PPPs, taking into account the recommendations given by the Sherpa group
- Research in Energy-efficient Buildings **can not be exhausted within FP7** and E2BA is ready and willing to work on the continuation of the PPP in Energy-efficient Building in the next Framework Programme.
- An effective implementation of the "new" PPP in Energy-efficient Building in the next Framework Programme is a response to meet the objectives proposed by the Commission (20/20/20 targets, European 2020 initiative,..) as well as to address the global challenges such as economic crisis and climate change.
- Aim of the E2B Association and the other Industrial Associations created in the framework of the FP7 → **Ensuring the visibility, transparency and continuity of their work, so far successfully performed in close synergy with EC services**

Energy-efficient Buildings PPP- Ambition

- Retrofit the **existing building** stock (200 million houses and many offices).
- Develop future positive energy buildings/districts.
- Develop, integrate and demonstrate new products & technologies, while deploying knowledge intensive services along the entire buildings' life cycle.

Research Challenges

Within the Industry multi-annual Roadmap thirteen key research priorities have been identified, namely Envelope and components, Systems and Equipment for energy use, Storage of energy, Quality

indoor environment, Design-Integration of new solutions, Envelope and components, Industrialisation and mass customization, ICTs, Automation and Control, Life cycle analysis, Energy Management, Labelling and standardization, Diagnosis and predictive maintenance, Systems Equipment for Energy production,...

The PPP instrument should ensure:

- **Relevance: PPPs and the social challenge** → PPPs are an opportunity to face grand European socio-economic challenges, providing **coverage of Europe at large**, favouring the widest incidence of the initiative in geographical terms; PPPs are a tool to enhance the competitiveness of European industry in **selected and limited sectors** with relevant contribution to social needs and productivity, maximising EU industrial capabilities: economic recovery led by industrial research and innovation; Special attention for **SMEs**, since they are a major asset in Europe
- **Long term commitment** between the private and public sectors to address European industrial, social and environmental major challenges.
- **Medium to Long term strategy**, streamlined and simplified procedures that will boost the industrial and SME participation in research.
- Projects under the PPP should have mostly **industrial leadership** and look for big impacts in terms of competitiveness, societal and market impact.
- **Simplification** → Simplified, common and streamlined procedures; All the initiatives funded through the Framework Programme have to share its general rules.
- **A trustful cooperation between the industry, the EC and the Member States** to achieve an effective implementation of the PPPs.
- **Transparency** → Accessibility and fairness of the process, with non discriminatory principles;
- **Continuity of the commitment** → Long term commitment both from the industry and the Commission is required.; Continuity for already running initiatives proposed under the Economic Recovery Plan (EeB, FoF and EGCI) and the last one approved of Future Internet beyond 2013; Considering "Energy-efficient buildings" and "Factories of the Future" PPPs are the most evolved, they are proposed as test beds for the implementation of all PPPs
- **Process review** → Start an analysis of the progress of the four PPPs already launched in order to take advantage of the lessons learnt; Evaluation of the experience gained by the non-profit associations E2BA and EFFRA as industrial representatives and the Commission.
- **Impact assessment** → Social assessment of the socio-economic impact achievable by each PPP in should be foreseen.





Green Cars

The European Green Cars Initiative (EGCI) is a Public-Private Partnership to support the development of new and sustainable forms of road transport, with funding level of €5 billion, of which €1 billion is earmarked for research.

The European Green Cars Initiative covers a wide range of measures, not only to promote research on green and sustainable road transport, but it also includes a substantial package of financial and demand-side measures. Its scope is extremely wide, covering all road vehicles, infrastructures and the performance of the transport system as a whole. The research activities involves passenger cars and trucks, greener internal combustion engines, electric and hybrid vehicles, smart electricity grids and their interfaces with vehicles, logistics and co-modality combined with ITS.



Introduction to the rapporteur – **Dr. María Luisa Soria;** PhD in Chemistry and MBA, has a broad experience in R&D projects at national and european level in the automotive sector, and specifically on energy storage for automotive applications. She holds currently the position of Secretary General of SER-

NAUTO, the Spanish Association of Automotive Component Manufacturers, and represents the Association in CLEPA and EU fora. She is also coordinating the Spanish Support Action Green Cars, funded by the CDTI (Ministry of Science and Innovation) and has participated in the edition of the books "Spanish capabilities in the Eco-electromobility sector and the Green Cars initiative" (2009) and "FP7 Green Cars and Leadership Opportunities in Spain" (2010).

Abstract of the structure of the sessions

The Green Cars part of the Conference was structured in three sessions, in which twelve presentations of public authorities and the private sector showed different points of view but a common goal: to support the development and deployment of clean road transport technologies along Europe.

The first session was focused on the public initiatives and several examples of the role and programmes supported by local and regional administrations were presented, together with financial and other opportunities available at the European level. In the second session, representatives of the four main technology platforms and initiatives set at European level and related to the Green Cars initiative presented their current activities dealing with the identification of techno-

logical challenges and recommendations on RTD priorities for clean mobility, and also their future plans to support the PPP. Finally, in the third session, presentations provided input of private and public actions aimed at the future implementation of the PPP: the current activities and future vision of the Industrial Advisory Board of the PPP, the involvement of Member States through a new ERANET+ Programme, the EIB support to local governments to implement infrastructures for local clean transport systems and a Spanish integrated project on vehicle development and integration showed how efforts at european and national levels can be directed towards a common goal.

Session I - The European Green Cars Initiative, a fundamental step toward decarbonization of Transport

Public support at European level is driven by the need to reduce energy import dependence and CO2 transport emissions, whereas at local and regional levels, due to energy efficiency and environmental concerns, the aim is to reduce pollutant emissions and promote a sustainable urban mobility system.

Public local and regional authorities along Europe are committed to push deployment of EVs through ambitious programmes that include incentives, public captive fleets and joint procurement and investments in charging infrastructure and ICT mobility services, which look for the final integration of EVs in the sustainable urban mobility system. Clear examples of the support of cities and local authorities to the deployment of EVs and stimulation of the market are the running projects in Amsterdam, Barcelona, London, Madrid, Paris and Stockholm.

Regional strategies to support the Green Cars initiative are also linked to the opportunities that clean and green mobility represents for the industrial sectors involved. For example, Valencia regional strategy is focused on energy efficiency and integration of renewable energies, including mobility programmes, the promotion of demand and deployment of the charging infrastructure, and also on the funding of local R&D and demo projects on new business models.

With EUR 8.2bn loans in 2009, the European Investment Bank is the world largest R&D financier of the European automotive sector, mainly through the European Clean Transport Facility (ECTF), which is focused on emission reduction and energy efficiency projects. Investment in R&D and innovation is a key factor for EU automotive industry competitiveness. Due to the facts that a variety of technical solutions will be competing in the next two decades and that it is expected a gradual transition to electric vehicles through hybrid vehicles, the sector is threatened by the high investment levels and the need to achieve higher effectiveness and efficiency on investments.

EC Policy to support clean vehicles includes RTD actions (EGCI), and also measures to promote market introduction



and market regulation directives on energy and noxious and CO2 emissions. Moreover, the economic advantages of clean and energy-efficient vehicles can also be quantified, whereas oil substitution by a combination of new fuels is envisaged.

Session II - Technology for Green and Electric Vehicles

The three European Technology Platforms (ETPs) relevant in the context of the EGCI (ERTRAC, EPoSS, SmartGrids) and the eSafety Forum are key actors to face the challenge of Europe pursuing a leadership role in the greening and electrification of mobility. They represent nowadays the interface between industry and European Commission.

The social challenges of a sustainable road transport system must be tackled through research and innovation programmes on new technologies, energy efficiency, decarbonization of energy, reliability and safety and with global competitiveness measures that involve training and skills, employment and impact on the supply chain as well. The step ahead from research to innovation requires active involvement of Member States through National Programmes.



ETPs are actively supporting the EGCI in the identification of technological challenges and opportunities for the EVs and providing recommendations on RTD priorities and topics for the workprogramme of the next FP7 calls. Examples of this support are the organisation of expert workshops and an industrial

ad-hoc advisory group to define the road transport electrification roadmap, with a target of 5 million electric vehicles in 2020. A more ambitious target of 20% EVs by 2020 was proposed.

Integration of electric vehicles in the grid is a techno-economical challenge and an opportunity for the development of business models. The impact on the distribution and transmission grids and new grid services based on intelligent communication V2G and linked to the DER (distributed energy resources) units, to match generation and demand, is under study as well.

EU must implement R&D programmes and demand side measures and establish cooperation mechanisms. Launch of large scale coordinated lighthouse projects and other European large dimension actions are needed to mobilise a critical mass of resources, speed up the achievement of specific societal goals and to respond to specific challenges, such as large competitive advantage of overseas producers of Li-ion batteries.

Session III - Sustainably Moving forward with the Public Private Partnership

Industrial representatives of the ETPs ERTRAC, EPoSS and Smart Grids and of the logistics sector participate in the EGCI Ad-hoc Industrial Advisory Group, which represents a good example of cooperation among the different economic sectors involved to establish a strategic dialogue with the EC, help implement the EGCI as a Public Private Partnership and give advice for FP7 and FP8, including the identification of R&D priorities for FP7 calls.

Main recommendations of this Advisory Group include a systems approach, the implementation of large scale lighthouse projects with leverage effects and the involvement in the future PPP model of Member States, regional public authorities and the industry of the relevant sectors. Member States are key actors on innovation programmes, whereas a European approach is need for standardization issues.

With the aim of coordinating future national activities, the basis for an ERANET+ transnational research programme on electromobility has been defined, with the support of ten countries up to date. The first programme proposal is focused on strategic research in a 2025-2030 prospective, at the European level, with a systemic approach (i.e. covering energy & environment issues, usage patterns, economic models and actors, recharge and distribution system, normative standards...) and including some applied technological research.

The EIB has arranged a facility to finance clean and energy-efficient urban transport, supporting project development: ELENA (European Local Energy Assistance). ELENA is a technical assistance facility focused on market replication that supports cities in the transition from policy commitment to actual investments to fulfil the 20/20/20 European objectives in 2020. ELENA can also be considered a complementary tool for Green Cars activities.



The integrated project VERDE is aimed at developing knowledge to allow for green vehicles production and commercialisation in Spain. It represents nowadays a major effort to reinforce the automotive sector and R&D activities at national level. With over 30 partners, it covers a broad range of areas, including the development of vehicle systems and architecture, charging infrastructure and the vehicle integration in the electrical network. The project also represents a good example of how to promote future cooperation activities with other OEMs and to demonstrate the feasibility to integrate renewable energies in the transport system.

Conclusions of the Green Cars Initiative

In the 'Europe 2020 strategy', President Barroso has called for a strategy to turn the EU into a smart, inclusive and sustainable economy. In the transport sector in addition to the European Green Cars Initiative (EGCI), the European Union has several ongoing initiatives: the Intelligent Car Initiative, CARS21 and the SET plan. All these initiatives aim at enhancing the development and deployment of a wide range of technologies and applications for transport that reduce fuel consumption and greenhouse gas emissions.

The European Green Cars Initiative is a public-private partnership that aims to boost research, innovation and investments in green technologies in the automotive sector, and will help the EU to achieve its long-term goal of becoming a low-carbon knowledge-based economy, promoting efficiency, productivity and innovation. The PPP will bring together representatives of the road transport industries with the relevant public authorities, in the implementation of both European and National Research Programmes, and involving relevant stakeholders at national and European level and in the public and private sectors.

Within the PPP scheme, and through the European Technology Platforms, the industry holds a key role in setting strategic research priorities and carrying out R&D activities, whereas long term work programme should ensure continuity and long term industrial investment plans.

From the beginning, the EGCI approach aims at reconciling the needs for financing and for continuing research activities by means of short term incentives, such as the demand side measures (taxation, scrapping and public procurement policies), short to medium term loans from EIB to support innovation, and medium term R&D funding for the breakthroughs that can make the future European industry stronger. During this conference, this approach was re-confirmed: activities and actions concerning research, innovation, market exploitation, and demand-side do not have to run separately from each other and have to go hand in hand and in parallel.

Electrification of vehicles is one of the objectives with greatest impact, since it brings three essential qualities: sustainability, environmental protection and affordability. This vision can be realised with two major lines of action:

- Development in a holistic way of the basic technologies for the electric vehicle integrated in today's transport and energy infrastructures.

- Large demonstration programmes, needed to assess the electric vehicle together with the necessary charging & transport infrastructure and to ensure wider public acceptance.

All this will need a combination of increased investment in research, with demand side measures such as green procurement, lead market initiatives and new incentive schemes. This will inevitably lead to the development of novel business models to integrate inter alia such concepts as battery leasing and electric charging.

Moreover, R&D and innovation, also in the fields of Green Cars, should be regarded as a medium to long term process that requires stability of research priorities and funds in order to enable industrial stakeholders to make commitments, decide on research and development investments and, finally, achieve a vantage strategic positioning. The time frame for putting green and electric vehicles on track comprises the next 10-15 years. This time frame is particularly relevant because it includes the next Framework Programme as well as the next Financial Perspective. In this regard, the need of continuity of activities beyond 2013, within FP8, should be carefully examined and looked at.

Cooperation between all relevant stakeholders from the automotive industry, road infrastructure and electricity suppliers / distributors and public authorities as well as common standards are necessary to make progress on the implementation and deployment of the electric vehicle. In particular, the importance of the cooperation among European technology platforms on a very tangible need as it is the case of sustainable mobility should be highlighted.

Green Cars cannot be considered less evolved than the other two first PPPs (EEB and FoF). It simply follows a slightly different governance structure due to the very nature of the industrial sector behind: it would not be possible to name any industrial association or technology platform which would be representative of the whole industry concerned (which is even broader than the car industry itself). For this reason the EC was in favour of using the well proven interfaces from the outset and set up an Ad-hoc Advisory Board with a very broad technological and industrial background.

The composition of this Advisory Group should ensure that all involved sectors and the full value chain are represented, including medium and small enterprises. Moreover, the PPP model governance should be based on the principles of simplification (of the legal and financial structure), openness and transparency (in the participation and evaluation procedures). Moreover, active participation of Member States representatives should facilitate coordination and coherence with the National programmes.

In brief, after meeting the immediate needs of the automotive sector, the EGCI, and more specifically its activities on green and electric vehicles, is now expected to represent a clear opportunity for the European Union and to enhance the



technological competitiveness of the automotive industry. At the same time it will help to overcome the environmental challenges faced by the road transport, for example to reduce the GHG emissions and local pollution and to reduce transport dependency on fossil fuels, linking the future road and urban mobility with clean and renewable energy sources.

Finally new investments, international collaboration with leverage of European structural funds, National & European Research / Policy Programmes, Public-Private Partnerships and the European Investment Bank are required to ensure a quick EU-wide deployment. Representatives of the industrial sectors involved, through the European Technology Platforms, and of the public authorities at all levels, from local to European, fully support the Green Cars initiative, and consider that this model should also continue in FP8. The European Commission should support the development and promotion of such a common European strategy for green and electric vehicles, including clear progress objectives.





Future Internet PPP

We all understand and appreciate how the Internet has become a global critical infrastructure and a remarkable catalyser for innovation and growth. We are very aware of how it is becoming the “nervous system” of our society. However, we are also very aware that it was not designed to support the current and future blossoming of services and usages in terms of the availability, reliability and dependability that we have come to expect from our communication infrastructure.

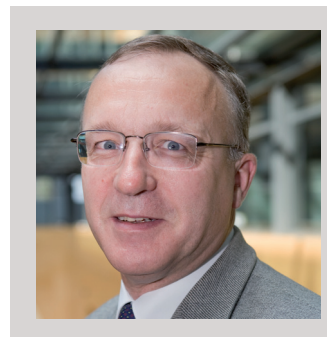
The limitations of the underlying internet infrastructure are becoming evident in the face of the irreversible expansion of its scale and complexity (trillions of mobile devices and sensors, voice and video over internet, billions of users and communities interacting in virtual 3D spaces, proliferation of security threats, etc). One could state that after 30 years the Internet is becoming a “victim of its own success”.

The European Commission has continually supported many ambitious research projects aimed at overcoming the limitations of the current Internet and to pave the way for a new generation of technologies and services over the past few years. Now, building on these endeavours, the Future Internet Public-Private Partnership (PPP) is the logical next step to foster this development, with an approach based on innovation and medium term impact, in line with the spirit of “sustainable recovery” of the European Economic Recovery Package.

The goal of the proposed PPP on Future Internet is twofold: a) to strengthen and expand the competitive position of the innovative European ICT industry, and b) to accelerate the trend towards a more sustainable society, by demonstrating that key business processes can be made smarter and more sustainable through tighter integration with Internet networking and information processing capabilities. The PPP combines a medium-term “market pull”, driven by the needs of policy applications in such areas as health, transport or energy efficiency, with a “technology push” matching the research agenda of major European technology suppliers.

The result will bring together the demand and the supply sides more systematically than current research and innovation programmes in, or across, EU member States, and will involve users earlier in the research lifecycle, with a view to shortening the time to market of internet-enabled services. The technologies and open platforms produced by the PPP will be used by many actors, in particular by Sees, to develop new and more competitive services, to enable more flexible and sustainable public infrastructures and utilities in such areas as mobility, health, energy, etc. An “industry-driven” process will ensure take up of results and quicker time to market. Implementation of the

PPP will be based on existing FP7 mechanisms for a quick start within the existing legal framework, whilst preparing for a possible evolution towards a Joint Technology Initiative under FP8.



Introduction to the rapporteur – **David Kennedy**, B.Sc (Eng), Dip EE, Director, Eurescom, & Chairman of the European Future Internet Initiative (EFII)

David Kennedy has been very active in the European Future Internet discussions for the past number of years. He was leading inter-ETP activities on the Future Internet and oversaw the evolution of this into discussions on a possible Future Internet Joint Technology Initiative.

This has now evolved again into the discussion on the PPP where a number of the leading Industrial players are actively pushing to generate innovative new perspectives on what the future networked society could be and how this can steer the development of the Future Internet in Europe in the short to medium term.

This group is now organising the EFII which will be a forum for discussing the evolution of the internet and finding the European perspective. It is planned to demonstrate the European approach and convince the rest of the world of its merits through the Future Internet PPP and the dissemination of its results through standards and conferences globally.

Eurescom hosts the Future Internet web portal at www.future-internet.eu as the central information hub for the European Future Internet discussion and is committed to maintaining and developing this central focus point of European Initiatives on the future Internet. The EFII is also on this site under initiative.future-internet.eu

Abstract of the structure of the sessions

Session I – FI – European Internet Industry – Yes we exist

Chair and Introduction to the FI-PPP: **Mr. Luis Rodriguez-Roselló**, *Acting Director, DG Information Society*

Programme:

- How Future Internet would boost the European economy... if properly driven by Industry: Mr. Diego Pavia, CEO of Atos Origin
- Future Internet user industry, Mr. Miguel Ángel Sánchez Fornié, Chairman of the European Utilities Telecom Council Board of Directors
- The future of the content sector is the Future Internet: Mr. Vince Pizzica, Member of the Board of Technicolor
- Panel debate about the impact of Future Internet technologies, services and applications for enterprise business models and customer benefit.



Session II – FI – Global technological trends – Yes we care

Chair: **Mr. Mario Campolargo**, *Director, DG Information Society*

Programme:

- Technological trends in mobile access technologies and their massive deployment: Mr. Fernando Fournón, Executive Director Telefónica I+D
- Technological trends in innovative and open service platforms for cross-application use: Mr. Lutz Heuser, Executive Vice President & Head of SAP Research
- Technological trends in security, privacy and trust of systems and services: Mr. Marko Erman, CTO ThalesGroup
- Panel debate and Q&A on challenges and opportunities of emerging technological trends.

Session III – FI – A European innovation ecosystem

Chair: **Prof. Reinhard Posch**, *Austrian Government's CIO, University of Technology Graz*

Programme:

- 3D Media applications: Mr. Thomas Wigand, Head, Image Processing Department of the Heinrich-Hertz Institute, Fraunhofer Gesellschaft
- National FI large scale test best in Finland: Mr. Heikki Huomo, Director of CIE, Finnish Centre of Internet Excellence
- National FI pilots in Spain: Mr. Guillermo Cisneros Pérez, Professor and the Headmaster of the School of Telecommunication Engineering of the Technical University of Madrid
- Future Internet – What users need and expect, Mr. Godwin Caruana, Chief Technology Officer from MITA.
- Panel debate on research challenges ahead and how to address them with European research instruments.

Future Internet PPP Conclusions

We can draw the following summary and conclusions from the three sessions and the discussion occurring therein.

- **The Future Internet PPP approach is welcomed by Industry.** All sectors - and specifically not just the ICT sector - that were represented at the conference expressed commitment to the focused approach of the PPP and the concentrated effort to have a programme working to produce specific results with a measurable impact.
- **The PPP can strengthen the innovativeness of industry** Many speakers referred to the need to improve key business processes by integrating innovative internet technologies. This means finding how innovative ICT technologies can enhance existing business processes. The additional opportunity to create new markets through the integration of different sectors and exploiting the benefits of convergence was considered as an essential part of the European future

internet strategy by all concerned. It was also proposed that the coherent approach, based on substantial common enablers would prove to be very effective for stimulating many new business models - particularly when SMEs could also exploit standardised service and application interfaces.

- **Commitment to the acceleration of the evolution and uptake of the Future Internet In Europe**

All parties recognised that the opportunity for Europe now is to stimulate a coherent approach to the evolution of the future internet in Europe. If we can adopt a European approach where the common aspects of the future internet are at the service interface level (rather than at the network protocol level of today) we will make a massive step towards enabling a huge market of open converged services where there are great economies of scale to be achieved in providing smart services in an open environment while avoiding the fragmentation of the market. We should be very careful to ensure we achieve this coherence from the start to ensure gaining the competitive advantage for European industry.

- **Coordinated effort desired by all**

Many speakers and audience members expressed their wishes to ensure that all actors are working together and contributing to the success of the European agenda. The intention is to use the collaborative research programme to do the technical work on preparing the standards that will enable a healthy open competitive market. We should exploit the Future Internet PPP to ensure we find the best technical solutions while avoiding being forced to adopt particular commercial IPRs which would prevent market uptake.

- **We have many Pilot networks to build on**

Session 3 particularly emphasised that, as we are trying to get something substantial together in a relatively short time we need to build on the results and resources we have. There are many advanced networks available in Europe and with some additional resources to make them suitable for the Future Internet trials, they could be interconnected to prove scalability, interoperability and how services should be distributed in the future internet.

- **All parties share the vision that the application of advanced internet services can benefit European society and economic wellbeing**

Many times in the discussions the reasons for taking this approach were reiterated. Clearly the industry advantages if we can lead the way to a more homogenous Future Internet where the developments for individual sectors can be used to benefit other sectors shows ways that markets now considered closed or fully serviced can be stimulated to grow again with the introduction of new ideas. Similarly the benefits for individuals in society where the ease of access to services that enhance the quality of life, improve their working and leisure environments while also improving their health and safety standards are very welcome. The exciting economic opportunity to develop new business models is welcomed by all the recovering economies in Europe.



- **There is a clear wish that innovation in the instruments and processes are achieved – coordination is a critical challenge – PPP is a tool to enhance competitiveness**

The framework programme instruments have had much criticism over the past years and a lot of recognition of their good attributes. In the Future Internet PPP the idea is to try and have more stress on the good aspects and reduce the impact of the procedures that have impeded progress. What is specifically asked is that the PPP takes a programme perspective and that the criteria for selecting projects include the commitment of the projects to work together towards common results. This, along with a policy of complimentary projects rather than duplication, will achieve a more sustainable and exploitable programme result.

- **The ICT sector see the way forward as a unified effort with the sector specific industries, taking account of user needs**

Again the stress of the discussions was to have one new European approach and to demonstrate the benefit of this to all the European industry sectors. This includes the concept of the architecture being open to give the chance to all players, large and small, to find their business niche. SAP announced they were starting another industry grouping and this raised questions about keeping a unified approach and having only one reference architecture. All agreed that we must use the programme to determine the best approach and ensure universal support for this.

- **Stability in the market giving confidence to invest.**

There was clear agreement that one of the most effective ways the goals of the PPP can be achieved is through the adoption of open standards which use common meta data to describe and communicate the service data across the Future Internet. It is also important as appropriate meta data and semantics are critical to allow the discovery of services and content that users want and need. It is desired by all that we avoid the fragmentation of the market which will occur if we promote several solutions and then ask the market, industry players and users to take the cost of determining the winning solution. This will in fact slow down Future Internet migration as people will refrain from using new services until they see the stable market.

- **The sectors also share the need to have advanced communications in their business processes.**

The presentation from the Electricity sector was very interesting as it proved that the new "intimate" relationship between the ICT sector and the Industry sectors is desired by both sides. The Speaker stressed that energy flows need information flows and also standards like the interface for smart meters to open up such markets and allow a healthy economy. The ICT side are quick to reply that information flows needs energy flows too and clearly both sides have a lot to contribute to working in close collaboration.

- **Getting the value chain right**

A frequent and recurring comment was the inappropriate value chain that resides in the future Internet today. In the

Internet of the future we have to determine appropriate value models where the generators of content and services are appropriately rewarded for their contributions as we must have sustainable business models for all players. The comment of one speaker saying that his traffic demands can be easily satisfied by adding more fibres to the network demonstrated the lack of understanding many service level approaches have for the economic and pragmatic constraints of infrastructure provision. Another repeated point is that the future value chain must also cover the cost of services being sustainable in the environmental sense as well the economic sense.

- **Making new services friendly**

The need to keep the user perspective very much in focus was also stressed by many and they suggested that we need to make the technology invisible and just give the users direct access to services which are easy to use. Clearly this needs the proliferation of pervasive networks and service platforms but the end user should not be forced to understand and configure complex connectivity issues. This should also apply to cost models for the new services as today it can be very difficult to invoke services with a clear knowledge of what they cost.

Most Pertinent conclusions:

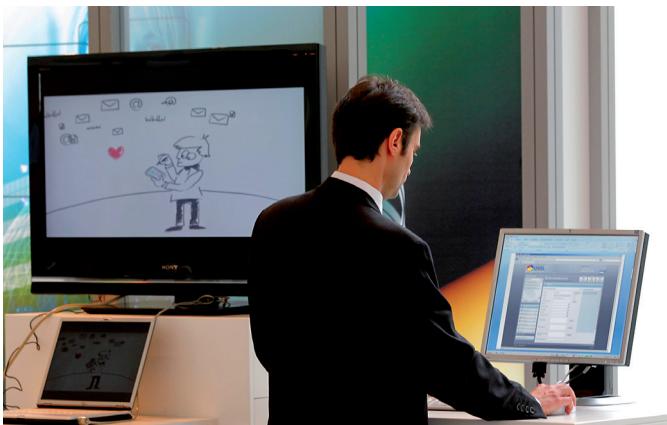
1. We should use the Future Internet PPP to ensure we can maximise the impact of ongoing collaborative research programmes, turning research into innovation. To do this we need a programme oriented approach and keep all projects in the programme focused on the common goals.
2. Industry clearly and repeatedly expressed their readiness to lead projects and to share the work of the governance of this programme with the public stakeholders.
3. All parties shared the goal to collaborate to make Europe more competitive.
4. The importance of involving the users to stimulate new business models was stressed.
5. The opportunity to rapidly gain leadership through support of open standards was recognised and endorsed.
6. The need to minimise procedures and maximise the efficiency of programme implementation was a loud demand from all involved.
7. Every one wants one approach and a common solution to create a large open market for the Future Internet services and applications in Europe.
8. All agreed that the technological outcomes of the Future Internet PPP shall respect the principles that have made the current Internet a global success, notably interoperability, user driven innovation, fairness and openness, so as to allow



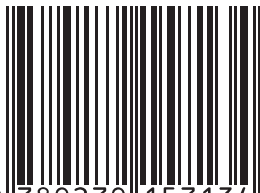
the participation of all interested actors, in particular SMEs, during and beyond the implementation of the PPP.

9. Industry restated their commitment to developing the PPP and their commitment to provide the necessary financial contribution and the best people to do the work.
10. There was a call for active support from European, national and regional public authorities and regulators to make this initiative happen and to push the boundaries of the programme to try to achieve more with it.

The overall conclusion is that the Future Internet PPP is Europe's opportunity to develop smarter Internet services and applications for all aspects of work and life, gaining a significant competitive advantage for Europe, while accelerating the uptake of the Future Internet in Europe.



ISBN 978-92-79-15713-4



9 789279 157134