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“Digital Ecosystems: the Next Frontier for SMEs and Territories?”

Thank you, Chairman, for your dedicated and effective service as Secretary-General of the Council of European Municipalities and Regions. The vision and skill that you have demonstrated in looking for new concepts of local self-government in the information age has largely contributed to develop and expand this topic beyond all expectations.

I want particularly to thank you, as well as my good friend Javier Ossandon, for welcoming us to this beautiful city of Kraków. Cartographers tell us that the suburbs of Kraków are the geographical centre of Europe – therefore, I couldn't find enough words to thank the Mayor of Kraków and the Marshal of the Malopolska Region for kindly hosting this prestigious Conference in this symbolic spot in Europe just one year after the enlargement of the European Union! Anyway, I'm sure that EISCO'2005 will contribute to help Małopolska become a strong, recognisable regional brand.

Ladies and Gentlemen,

Rarely in our history have we faced the challenges – or the remarkable opportunities for progress – that we face today. And rarely have we had in our hands the knowledge, the cultural heritage, and – yes – the passion to meet both. The great Polish poet, Nobel Prize of Literature in 1980, Czeslaw Milosz, once wrote: *“The voice of passion is better than the voice of reason. The passionless cannot change history”*. I believe that technology, if wisely geared towards fulfilling public purposes, can contribute to change history. Our collective history.

This is why we must strive to do what is best for European citizens – and we must measure our success by what we accomplish not just for one administrative department, not for this or that interest group, but for Europe and its enduring ideal of justice, democracy, and human rights.

Now I will turn to the actual topic of my presentation today.

Digital Ecosystems should be a strong priority for future collaborative ICT research in Europe.

Most enterprises in Europe are SMEs, but they also account for a significant amount of European work experience and economic activity. There are around 20 million enterprises in EU-25, providing a job for almost 140 million people. By contrast, there are only about 40,000 large enterprises, which account for only 0.3% of all enterprises. Within the group of SMEs, the vast majority – 93% – are micro enterprises, employing fewer than 10 persons. On average, a European enterprise provides a job for 6 persons; this measure of enterprise size varies between 3 in micro enterprises and over 1,000 in large enterprises. So, we need to keep in mind that the typical European firm is a micro firm.

However, in the emerging knowledge-based global economy, European SMEs are not ready to use the Internet intensively as a business tool, except for a few start-ups which are at the leading edge of the ICT revolution. The majority of SMEs are facing major obstacles such as lack of resources, lack of technical and management skills, lack of appropriate e-business solutions, the high cost of ownership of ICT equipment, concerns about security and privacy, complex regulatory frameworks for e-commerce, and even the lack of awareness of the potential benefits of ICT.

The challenge, therefore, is to achieve widespread and effective take-up of ICT enabling SMEs to become more innovative and competitive in global markets. Competing organisations today need more interrelations, more specialised resources, more R&D and innovation, access to the global value chain, and of course access to knowledge.

I'm convinced that ICT, and particularly e-business solutions, offer many opportunities for SMEs to grow and reach the critical mass of resources for prospering, but we must admit that, for the most part, European SMEs find these opportunities difficult to grasp. Since 2000, a number of targeted actions have been launched at Community level to

address the needs of SMEs in relation to the adoption of ICT, including legislation, e-skills, interoperability, and trust and confidence.

Knowledge and innovation are today, more than ever, at the centre of the Union's policy. Two Framework Programmes will soon coexist at Union level: the seventh Framework Programme on Research and Technological Development and the Framework Programme on Competitiveness and Innovation. These Framework Programmes endeavour to support those projects that contribute directly to European excellence in research and innovation. To a certain degree they also support the building up of capacity in regions lagging behind to attain these levels of excellence.

There is thus a natural synergy between the Framework Programmes and cohesion policy. The Structural Funds can help all regions to build up research and innovation capacity, thus contributing to the research and innovation activities of the Union.

Two guidelines for interventions co-financed by the Funds in the field of research can be identified:

- ◇ Support for RTD activities in SMEs and for enabling SMEs to access RTD services in publicly-funded research facilities;
- ◇ Enhanced co-operation between networks of businesses and between businesses and public research institutes by creating, for example, regional and trans-regional clusters of excellence.

Member States and European Regions should aim at using their competitive advantages optimally. The key is to ensure that the research and innovation potential of each region is fully exploited. In this sense, it is essential to facilitate a business climate that promotes the creation, dissemination and adoption of knowledge by firms. Bold policies are required to encourage the economic exploitation of new ideas, new management and organisational methods based notably on ICT, and to promote industrial change, thus enhancing the competitiveness and socio-economic attractiveness of regional economies. In short, the two Community Framework Programmes and cohesion policy should be linked together in order to create efficient regional innovation systems.

For me, the top priority is to make regional research and innovation supply more efficient and accessible to SMEs, for example by establishing "poles of excellence" that

bring together high technology SMEs around a university or technological institute, or by developing and creating “regional clusters” around a large company. Such poles of excellence would focus their efforts on facilitating the development of new firms and promoting spin-out and spin-off companies from universities, research laboratories and other firms through awareness raising, prototyping, tutoring and the provision of managerial and technological support to entrepreneurs-to-be.

A holistic approach combining the potential of the two Framework Programmes and cohesion policy would be a useful complement to existing national and regional strategies, for example those referring to:

- ◇ “industrial districts”, i.e. test sites to analyse how the social division of labour among firms in embedded networks functions in regional economies;
- ◇ “growth nodes”, i.e. high performing geographical clusters of organisations and institutions, networked to other organisations and potentially supported by ICT;
- ◇ “virtual clusters”, i.e. supply chain networks enabling knowledge to be transferred both upstream and downstream through reciprocal relationships between the main actors; and
- ◇ “business ecosystems” – a concept that lies at the heart of my presentation today.

I would like to add that similar approaches are followed in other regions of the world. For example, since 2002, and for a duration of 5 years, the Japanese Governments provides budget to regions for their implementation of “Intellectual Cluster Projects” deemed to support the creation of new firms and revitalisation of regional economy through industry-academia collaboration.

So, why using an analogy to present the present and future of networked organisations?

Analogies are increasingly used as powerful tools for choosing among possible solutions to strategic problems, generating creative options, or communicating complex messages quickly. Chosen well, they have an emotional impact that can rally and motivate decision-makers and managers. On the other hand, we must remain aware that reasoning by analogy raises the spectre of superficiality. So, let me make a bet that the

concept of “digital ecosystem” actually taps the power of analogy but sidesteps most of its pitfalls.

There are different ecosystem analogies.

Though **Biological Ecosystems** are divided into several types or categories, divisions are less important than the linkages between them. As highlighted by the World Resources Institute in 2000, all these systems are tightly knit into a global continuum of energy and nutrients and organisms – the biosphere. As evolving systems, ecosystems are dynamic, constantly remaking themselves, reacting to natural disturbances and to the competition among and between species.

The concept of **Industrial Ecosystem** was originally presented by Robert Frosh and Nicholas Gallopoulos in 1989. The goal in industrial ecosystem analysis is to bring the principles of sustainable development into all kinds of industrial operations.

Another concept – **Bionomics: Economy as an Ecosystem** – was heralded by Michael Rothschild in 1990. Noting that key phenomena observed in nature – competition, specialisation, co-operation, exploitation, learning, growth – are also central at business life, Rothschild argues that the basic mechanisms of economic change are remarkably similar with those found in nature. The main difference, he adds, is speed, which is quite a lot faster within economic change. In this analogy, firms serve as biological organisms, and industries as species. From a bionomic perspective, organisms and organisations are nodes in networks of relationships. As time goes by and evolution unfolds, some nodes are wiped out and new ones crop up, triggering adjustments across each network.

A last analogy which I would like to mention is the one promoted by Eve Mitleton-Kelly in 2003 – **Social Ecosystem**. The author argues that organisational complexity is associated with the intricate inter-relationships of individuals, of individuals with artefacts (such as IT) and with ideas, and with the effects of interactions within the organisation, as well as between institutions within a social ecosystem. One important phenomenon within a social ecosystem is co-evolution.

Let’s come to the core analogy – Business Ecosystem.

It's only twelve years ago that business strategy consultant James F. Moore defined business ecosystem as "an economic activity supported by a foundation of interacting organisations and individuals – the organisms of the business world". According to Moore, a business ecosystem includes communities of customers, suppliers, lead producers, competitors, and other stakeholders, financing, trade associations, standard bodies, labour unions, governmental and quasigovernmental institutions, and other interested parties. The key to a business ecosystem are leadership companies – the "keystone species" – who have a strong influence over the co-evolutionary processes. Moore's definition highlights interaction within a business ecosystem as well as decentralised decision-making and self-organisation. Business ecosystems, he contends, are based on core capabilities, which are exploited in order to produce the core product in addition to which the customer receives a "total experience" that includes a variety of complementary offers. His reasoning is closer to the concepts of "cluster" and "value networks", which are already well known and much used across the world.

In a book published in 2004, Harvard Business School Professor Marco Iansiti and collaborator Roy Levien have argued that the concept of ecosystem should be central to policy debates. Like business networks, they argue, biological ecosystems are characterised by a large number of loosely interconnected participants who depend on each other for their mutual effectiveness and survival. And like business network participants, biological species in ecosystems share their fate with each other. Furthermore, they propose that the health of a business ecosystem can be, and should be, measured along the parameters of *productivity*, *robustness*, and *niche creation*. Productivity is of course a basic factor which, at some point, will define the success of any kind of business. Robustness means capabilities of surviving when shocks from inside or outside the business ecosystem threaten to destroy it. Finally, a business ecosystem should have the ability to create niches and opportunities for new firms – this requires a shift of attitudes from protectionist to co-operative. This is certainly an attribute which we know how to cultivate in the framework of collaborative research in Europe.

Central to the analysis of Iansiti is the observation that healthy business ecosystems are characterised by a network architecture that is composed of a spectrum of nodes ranging from a small number of highly connected "hubs" or "keystones" to a large number of sparsely connected niche players.

Four years ago, in a book entitled “Ecosystem: Living the 12 Principles of Networked Business”, Thomas Power and George Jerjian have defined a business ecosystem as a system of websites – the *organisms* – occupying the world wide web – the *habitat* – together with those aspects of the real world with which they interact. Although they lay strong emphasis on technological connectedness, they admit that becoming a networked business does not just mean getting on the Internet, but rather fundamentally changing everything that the organisation does. This is very much in line with what we see in the RTD projects that we are funding under the IST-FP6 priority. Power and Jerjian consider four stakeholders to any enterprise, namely communities of shareholders, employees, businesses, and customers, and they state that the ecosystem standpoint should be taken while considering the advantages of co-operation between them.

There is another dimension which I would like to draw to your attention – Collective Strategy.

As shown in 1983 by W. Graham Astley and Charles J. Fombrun, collective strategy is a systematic response, taking the form of overarching inter-organisational behaviour, by a set of organisations that collaborate in order to absorb the variation present in their environment. In other words, in a corporate environment characterised by increasing interdependence and ever more intricate networks of linked organizations, there is the increasing emergence of structures of collective action, ranging from informal arrangements and discussions to formal devices such as interlocking directorates, joint ventures, and mergers.

More recently, Professors Gaël Gueguen and Olivier Torrès, and collaborator Estelle Pellegrin-Boucher, have pointed out in a paper that this theory of collective strategies does not provide a relevant framework for analysing collaborative business strategies. On the one hand, it isolates the different collective strategies from each other and, on the other, it fails to take into account the whole dynamics that determines all the relations of an enterprise in terms of resources and competences. The authors claim that the concept of business ecosystem provides a powerful analytical framework to remedy these shortcomings. They define a business ecosystem as a system of vertical, horizontal or transversal relations amongst heterogeneous actors who are guided by the promotion of a common resource (for example, a technological standard or a patent) and of a common ideology entailing the development of shared competences. Organisations

that belong to a business ecosystem form a “community of strategic destiny”, yet they are also in a competitive logic. This is what Gueguen and Torres call *coopetition*. The cases of Linux, Microsoft and SAP are given as good examples of such business ecosystems.

One aspect of Gueguen’s model, which I would like to highlight, is that it allows revisiting the competition theory by positioning business ecosystems at the confluence of complex interactions between organisations, involving the notions of co-evolution and leadership, and of heterogeneous players, including not only direct competitors but also customers, suppliers, and potential new entrants in the market. In the global economy, organisations can find themselves competitors and partners at once; they are then incited to favour *coopetition* situations in a process of value creation. New analytical tools are needed to represent and analyse such situations.

After this brief and partial review of the international literature let’s now turn to presenting the approach followed by the Commission in the IST-FP6 priority for supporting the development of business ecosystems.

If we consider the adoption by businesses of Internet-based technologies, we see a continuous process, with sequential steps of evolution. The steps can be classified in six phases: (1) e-mail, (2) Web presence, (3) e-commerce, (4) e-business, (5) networked organisations, and (6) digital business ecosystems.

The first phase, based on the usage of the Internet for exchanging messages, started in 1985. It did not imply a cultural change.

Starting from 1993, the second phase saw proliferation of an electronic presence, usually through a static web-site.

Then, starting from 1996, the third phase was featured by the use of the Internet to perform economic transactions online between enterprises and consumers (B2C) or among enterprises and suppliers, or internally inside the same enterprise (B2B).

A few years later, starting around 1999, the fourth phase introduced the notion of e-business. The company’s web-site has now a direct link into the legacy systems via the intranet, thus modifying the working methods and business processes as well as the internal culture and organisation.

As time goes by, organisations achieve tight integration with other organisations both within and outside their own industries. The new frontier is, then, combining organisational genetics with advanced ICT solutions in unique and inventive ways. This features the fifth phase: networked organisations. Just as the last decade of the 20th century was the period of e-business and the maturation of the information society, the first decade, and more, of the 21st century will be the period of networked organisations and the emergence of the knowledge based economy. Each of us can see that today, organisations build faster and more powerful strategic partnerships and alliances, re-engineer and integrate their business processes, develop value added products and services, and share knowledge and experiences. It's therefore natural that the European Commission supports this phase of ICT adoption with the strategic objective "ICT for networked businesses" of the IST-FP6 2005-2006 Work Programme.

As already mentioned, the classical definition of a business ecosystem refers to an interconnected network of entities, with two main properties:

- ◇ organisational fitness, which is both a property of the single organisation and of the ecosystem, and
- ◇ role distribution in the eco-system – a keystone develops and sustains a technology platform onto which a variety of organisations thrive, much in the same way as a variety of species depends on a coral reef substrate, and of course it strives to ensure its continued survival by directly maintaining the stability of its ecosystem.

This loose web constitutes a business ecosystem that is an interconnected "network of networks" of co-evolving organisations, with a specific relationship with a dominant organisation. The spread of the Internet and globalisation have accelerated the emergence of business ecosystems by introducing a further layer of complexity and new business drivers and contexts. Looking at business ecosystems in conjunction with globalisation in the context of the ICT revolution poses a series of difficult questions. The most challenging one, I believe, is the following: Can an ecosystem be managed at all being aware that it means managing networks of external resources, which do not belong to the organisation and which co-evolve with their immediate neighbours, technological platform and the business eco-system itself? Dyadic management

(partnerships, collaborative relationships, etc.) is insufficient. Therefore, management in a business ecosystem entails managing co-evolutionary effects and emergent properties.

During the late 1990s, the birth of the Extensible Markup Language (XML) and its critical evolution from a data presentation standard to a machine-to-machine data interchange format enabled to resolve the crucial integration problem. So, thanks to XML and related standards the current generation of Internet applications allows integrating with the more traditional legacy systems and client/server systems, which still today contain the vast majority of corporate data and enable most corporate business processes.

However, the “keystone approach” to business ecosystem fails to acknowledge the special feature of the EU economic fabric which, as I have already stressed, is very much based on SMEs, and more specifically on micro enterprises deeply rooted in their local territory.

It was when we realised this that we started in the e-Business unit of the Information Society and Media Directorate-General to contemplate looking for more appropriate, drastically inventive approaches.

The initial work on “digital business ecosystem” started three years ago, when the European Commission organised a series of workshops and produced a discussion paper on the concept, its significance and its value and viability.

This concept was endorsed by the scientific community and by European local and regional government administrators who have a structure of strongly networked SMEs and have developed an ICT vision and roadmap.

The digital business ecosystem initiative is deemed to allow Europe to compete on the global market in the ICT sector, enabling the SMEs to work together and to share and integrate resources – at local, national and global level. The goal is to empower the SMEs and to exploit the assets of local territories, which provide the infrastructure, the skill, the knowledge, and the specialised resources, which a single SME can’t afford. We asked ourselves the following questions: Which ICT-based solutions and new business models could contribute to create the favourable conditions for effective business ecosystems?

The digital business ecosystem is conceived as a pervasive “digital environment” populated by “digital components”. These can be, for instance, software components, applications, services, knowledge, business processes and models, training modules, contractual frameworks, and laws.

These digital components, like the life species, must be able to interact, express an independent behaviour, and evolve – or become extinct – following laws of market selection. The less adapted components, for example services that are not interesting for the market, are doomed to less and less use, thus becoming less and less present in the ecosystem, until they are finally wiped out. On the other hand, more complex components – digital services, innovative business models, or sectorial services – are expected to continuously appear and accelerate the obsolescence of the other digital components.

Such a scenario has strong implications on technology insofar as the current Internet solutions and standards cannot make it happen. A big technology breakthrough is required to transform the concept into reality.

However, let me say that I’m not referring here to what some authors call ‘disruptive technology’. One problem in the global economy is the increasing popularity of false-premise concepts that are blindly used for decision making! Hopefully, I’ve explained myself well enough regarding the analogical reasoning applied to networked organisations. But I refuse to give any legitimacy to such thing as a disruptive technology, though I’m aware that this concept is floating around unchallenged by the business community and even the European Commission! For me, there are inventions and new ideas, many of which fail while – fortunately – others succeed. That’s it. I hope of course that digital ecosystem will eventually belong to the latter category.

Let me now outline the rationale for digital business ecosystems.

Economic growth in the knowledge-based economy requires a broad deployment and use of ICT by enterprises and public institutions. There should be a European policy supporting new organisational and business models. Such models are urgently needed to enable the creation of co-operation and innovation networks, improve competitiveness as well as market and internal efficiency, stimulate economic growth, and finally revise the initial policy, as appropriate.

ICT plays here a catalytic role in leveraging the resources of the networks and sustaining competitiveness and efficiency.

But it is not just technology that sets the philosophy of the Commission regarding digital business ecosystems. The main purpose is to create an ecosystem within which businesses, and more particularly micro enterprises, will operate using application software or application services provided by developers that will thrive on the special functionalities of the ecosystem, in particular the ability for services to self-organise, self-optimize and evolve.

In order to allow for self-organisation and self-optimisation, and therefore to enable communities of software developers, in association with SMEs and other players, to reach complex goals through collective behaviour – or collective strategies, as we said before – it seems reasonable to root the concept of digital business ecosystem in the Open Systems philosophy. This is the challenge that we have taken on.

Indeed, the advent of the open systems movement is changing the way people think about the management of computers and computer networks. Open systems does not equal ‘free’, but it does mean co-operation and transparency that leads to collaborative behaviour which in turn produces greater good for every individual than stiff competition. By providing a platform for communication, resource sharing and interaction, the digital business ecosystem can improve the kind of exchange underlying co-operation. As a result, any player could produce components or solutions, not being forced to adapt a specific business or licence mode. It will be the market that operates a selection and determines a continuous evolution.

Therefore, the fact that digital ecosystems should not be dependent upon any single instance or player creates a significant advantage for P2P technologies over traditional client-server models and for balanced and decentralised governance structures allowing for customisation and adaptation over new types of co-ordination models.

The infrastructure of a digital ecosystem should be based as much as possible on open source technologies and open standards. Open standards mean open access to the specifications and free usage of the standard.

You might think, if not say, that we are taking a risky gamble in promoting a radical change in the conception of networked organisations. Only the future will tell. But let me indicate that we do not feel alone.

Some third countries with many micro enterprises, like in Europe, or witnessing an upswing of entrepreneurial activism, like in the United States, and with special emphasis being laid on territorial aspects of RTD, have started to adopt a concept similar to digital business ecosystem. This is the case, for example, of India with its concept of Micro-Entrepreneur Ecosystem – an effort to provide the required knowledge of markets and business requirements, of credit and banking facilities and of available service providers, and to nurture nascent projects.

Other countries, notably China and in Latin America, are looking favourably at the idea of digital ecosystem.

We are seeking, of course, to establish and maintain close relationships with these countries and their relevant institutions and organisations.

Moreover, although we are keen on developing further the strategy which we have developed over the last three years, we are also looking ahead to the 7th Framework Programme and to what could be further complementary ideas reflecting the needs of European regions, industrial sectors, and SMEs in digital ecosystems.

Who are the key players in digital business ecosystems?

Firstly, there are the SMEs. A digital divide by company size arises from the significant gaps between SMEs and larger enterprises in the more advanced forms of e-business. The lack of suitable technical and managerial staff with sufficient knowledge and expertise is a major barrier for SMEs to “go digital”. This shortage affects technical knowledge related to ICT, but also entrepreneurial and managerial expertise needed for operating in the networked economy.

More than any other business users, the millions of SMEs in Europe have a strong interest in standardised and fully compatible open interoperable ICT solutions that stay relatively stable over time. They are looking for customised ICT applications and services for improving their efficiency – through process and organisational integration – and for extending their business beyond local barriers.

Secondly, there are the ICT related organisations like system integrators, service providers, software component developers – with emphasis on SMEs, open source communities, and open systems developers – which should react favourably to the idea of digital ecosystem in order to keep and preserve their knowledge and to thrive by developing ICT-based applications.

Then, thirdly, there are the regions.

I mentioned earlier the digital divide between companies according to their size. There is another digital divide: The regional digital divide arising from the different rates of progress in e-business development within the EU.

When a set of organisations of a geographical area embrace the sector-specific ecosystems related to their business activity, and when the ecosystem could deliver solutions related to that area, we have a local instance of the ecosystem.

As ICT reshape the business ecosystems, the latter should gradually colonise and prevail in the networked organisations landscape – Growth Nodes, Industrial Districts, Virtual Clusters, and other territorial business networks have a natural bent for becoming digital ecosystems. Major conditions must, of course, be fulfilled.

But anyway, local development could be fostered by exploiting the integrated digital environment and by mobilising all local players, including local authorities, research and innovation centres, universities, consumer and trade associations, and non-governmental organisations.

Then, ideally, the local ecosystems could gradually federate creating inter-regional co-operation by fostering nodes of innovation and integrating pan-European, national and local initiatives.

As already shown by the ongoing collaborative research projects funded by the European Commission under the IST-FP6 priority, the digital ecosystem concept proves effective, and even to be the key to either supporting the transition of European territories from traditional rural economy to e-economy or promoting regional economic growth, competitiveness and employment. In this respect, I am determined to promote synergies between IST in Framework Programme 7 and the Structural Funds.

The success of the implementation of digital business ecosystems relies, to a large extent, on the relationship with the regional environment. What I mean by that is not only the availability of an advanced regional network infrastructure, of human capital, knowledge and practices, and of adequate legal framework and financial conditions, but also, above and beyond this, the consensus and active participation of the local players. Of course, there must be a critical mass of enterprises, including the micro enterprises, keen on using the ecosystem as business tool. But the regions which succeed in the application of digital ecosystems will be essentially those where all the key players – universities, research organisations, innovation centres, enterprises, and governmental authorities – are fully committed and work together forming a community.

This was clearly demonstrated already some 8 years ago when the European Commission promoted and supported the implementation of the concept of Integrated Applications for Digital Sites under Framework Programme 4.

Within the context of regional development, the key challenge is therefore to describe and analyse the interfaces between industrial networks and chains on the one hand, and the networks governing the creation of *enterprise governance*, which includes corporate governance (appraised in terms of conformance) and business governance (appraised in terms of performance) and industrial policy on the other.

In the rapidly changing world of e-business, looking ahead is not just important – it can be a matter of survival.

I think our commitment to digital ecosystems must be strengthened to meet the challenges and opportunities posed by the global economy. I'm sure there's not a region in Europe which wouldn't like to thrive on the advantages of digital ecosystems for its businesses – and, therefore, for its people. We have an obligation to provide European regions – whatever their particular economic circumstances – with the best possible technologies to develop business ecosystems.

Digital business ecosystems are one key to EU regional progress in this new century, and they must be among the highest priorities as we look to the future. The investments we make today in more competitive and more efficient small and local ICT software and service providers will bring rewards for tomorrow.

We've made some progress in the last two years. We begin to see the results in the collaborative research projects which belong to the sector *Technologies for Digital Ecosystems* of my unit. But further results are not possible without new investments. We simply cannot promote competitiveness and innovation in European regions on a tin cup research budget. If we are to move forward in this new century to meet the demands of the global economy we must overcome the present deficiencies with continuing commitment and new resources.

This is why I welcome the opportunity to continue and expand the promising work on digital business ecosystems through the fifth Call for proposals of the IST-FP6 priority, the future 7th Framework Programme, and also the new i2010 initiative, which lies at the heart of this conference.

To conclude, I would like to stress that the business environment tends to become truly "knowledge-centric" instead of "document-centric". This has many implications, which I have touched lightly during the presentation. And it's also the reflection of the knowledge-based economy and society taking precedence over the now existing information society.

The digital business ecosystem can be seen as creating, within the digital landscape of the Internet, a new form of the old concept of "Common Land" that prevailed in the agrarian past of many European countries. Knowledge does not deteriorate with circulation and use. Moreover, its use and consumption contribute to improve its quality, its quantity, and its diffusion. It's actually a common good that no one can own or control. It's there for the world to use.

Acknowledging that an adequate ICT infrastructure enabling businesses of all sizes, and especially SMEs, to develop and use innovative applications is crucially needed for supporting the participation of European players in the global economy, a policy strategy aiming at creating the conditions for the development of innovative territorial ecosystems, combined with change management and life-long learning initiatives, should be put in place under the i2010 initiative, which has been officially launched yesterday to take on the challenge of meeting the Lisbon goals.

But let me take now some distance from the topic of my presentation.

Europe at its best is when we are united in common cause and a unified purpose. We came together to promote the “territorialisation” of research policy. Javier Ossandon knows what I’m referring to by saying this.

We came together, in particular through the PRELUDE project, to define models of regional RTD, including a general architecture of the digital business ecosystem, which I will talk about later.

We came together to build the case for supporting the creation of regional and trans-regional clusters of excellence as well as RTD activities in SMEs.

In doing so, we came together after hard work and much struggle within our organisations to expand the circle of opportunity in European territories – for economic development, for knowledge creation and diffusion, for an environment conducive to research and innovation, for experience exchange amongst successful regions in specific fields, for sustainable development, for SMEs, for citizens.

As Europeans we know how to come together to achieve great goals – to make stronger our communities, our enterprises, our economy, our re-united Europe.

That’s the Europe I believe in. That’s the Europe I fight for every day. A Europe where we are joined arm in arm, like it is the case in collaborative research, to advance the cause of opportunity and fairness for all of our people. I believe that the outcome of the recent referenda in France and the Netherlands make this position even truer.

The promotion of digital business ecosystems is an honourable cause for Europe. The momentum is there. The time is ripe for strengthening our efforts.

I’d like to commend all the participants at this inspiring conference.

Thank you for your attention.

Gérald Santucci

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