PROPOSALS FROM SPAIN ON THE GRANADA STRATEGY FOR A DIGITAL EUROPE

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INDEX

INTRODUCTION

The Granada Strategy for a Digital Europe is the necessary follow-up to the i2010 initiative for the development of the Information Society in the EU. This selection of issues is a preliminary exercise necessary to framing and streamlining the debate and priorities in the ICT domain for the Spanish Presidency. The next step will be to translate these priorities into concrete and quantifiable objectives, the means to achieve them and the time deadlines.

ICTs, a key driver for Innovation and Citizens' Quality of life in Europe

As the International Community embarks on a new leg of its journey towards integration and world competitiveness, lessons need to be drawn from the experience of the last ten years, and to what extent the Lisbon Strategy has succeeded in allowing Europe to fulfil its potential and ambitions as the leader of the global knowledge economy.

At this stage, a number of assessments emerge as possible sources of guidelines for the future, namely:
- The need for pan-European strategies to turn knowledge into innovation.
- ICTs and the development of the Information Society will remain key drivers for public policies.
- ICTs and Green Growth are concepts that will go along with each other in the future. Europe must distinguish itself as a role model for the sustainability of economic growth –a goal that can only be achieved through an intensive presence of ICTs in the economy and the whole of our societies.
- The use of ICTs must be promoted by both public and private stakeholders – and its performance evaluated- from a **perspective based on its actual outcomes, both in social and economic terms.**

In this context, **Innovation and Quality of Life** must be the drivers behind our efforts to develop the information Society and maximize the impact of ICTs on National and European competitiveness and, ultimately, the benefit for our citizens in their daily life.

ISSUES AND PROPOSALS

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1. **INFRASTRUCTURE**

1.1 Incentives to investments in Next Generation Access (NGA) Networks

The development of NGAs needs to be a fundamental pillar for the increase of competitiveness and modernization of our economies, contributing to the economic recovery and enhancing the welfare of citizens.

Therefore, it is indispensable a reappraisal of public interventions related to NGAs from different sides: regulatory, fostering demand and supporting operators' investments where appropriate.

Regulatory certainty and favourable climate for NGAs

Regulatory certainty is a basic requirement to facilitate deployments of NGAs. The full inclusion of the NGA Networks in the analysis of existing wholesale broadband markets, that are usually reviewed every two years, has not facilitated the deployment of NGAs by incumbent operators, who fear that new entrants will "free ride" on their newly developed infrastructures without assuming the corresponding investment risks and cause uncertainties, that have increased as a consequence of the economic downturn.

Neither the resulting regulatory obligations have resulted in the deployment of NGA networks by alternative operators. Several countries have implemented specific measures, like access to ducts, symmetrical obligations or promotion of join deployments, intended to incentive deployment of new infrastructures by alternative operators, in spite of which the developments from cable operators, who make no or little use of these facilities, are the main alternatives to the incumbents' deployments.

Furthermore, additional obligations which may affect to new services that can only be provided over NGA Networks should be carefully assessed, as most of the exchanges sites shall remain active and providing simultaneously traditional and new services.

Therefore, it should be discussed the possibility of fine tuning present regulatory model in order to boost the investments in NGA Networks.

To that end, the Commission should try to anticipate those specific aspects included in the revision of the Regulatory Framework to promote the development of NGA Networks, such as:

- The objective of promoting regulatory predictability by ensuring consistent regulatory approach over appropriate review periods.
- The recognition of the need for an appropriate reward for the investment risks, especially for new investment projects.
- The possibility to define access obligations allowing different prices or other terms or conditions depending on volumes or length of contracts.
- The importance that NRAs should have the power to request the operators the submission of information concerning future network or service developments.
- The promotion of coordination arrangements between operators by defining appropriate rules for apportioning the costs of the facility or property sharing which take into account the incurred risks.
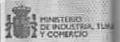
Financial support to NGAs

The Commission has recently approved some guidelines for State aid rules in relation to the deployment of NGA Networks, allowing public investments in areas where there not will be deployed a NGA network in three years time.

The current economic situation has increased the uncertainty on the side of operators, provoking that many investments in NGA Networks announced both by alternative and incumbent have been either delayed or downgraded, so it is not likely that commercial NGA networks can reach many urban areas in the three year timeframe.

In consequence, it might be required to reassess the proposals of the Commission until a new economic cycle has been reached, to avoid the possibility that state aids lead to the creation of "NGA islands" in rural and isolated areas, or that public intervention becomes the main contributor to the development of new networks in country-wide initiatives.

5

In the meantime, the Spanish Presidency proposes to focus the actions in reducing the digital divide by the inclusion of broadband access in the Universal Service Obligations, and by concentrating public aids in improving the potential of operators to made available high quality services not only in rural and isolated areas, including by adopting financial measures to update the core and transport network to provide higher speed services, which will complement the measures aimed to the stimulation of the demand in order to accelerate the take-up of NGA services.

1.2   Spectrum

Radio spectrum is a limited and natural resource that is essential to provide all kinds of wireless communication services. The importance of these services is steadily increasing and the availability of spectrum is critical to innovation and competition.

The long-term European policy objectives on the spectrum should be focused on ensuring that actions in this area are aimed at the global objective of developing the internal market and improving the competitiveness of the European Union. This should be done by providing a favourable environment for innovation and rapid access to spectrum resources in order to develop new technologies.

The Radio Spectrum action Plan aims to enhance the non-stop process of implementation of the digital economy, especially with a view in reducing the digital divide. This Plan is intended to promote investment, increase competition in electronic communications markets, to promote research and innovation in technologies and services, to increment productivity in European firms and to boost the creation of highly skilled employment.

The measures proposed in this Plan include:

- The introduction of greater flexibility in the use of the spectrum.
- The provision to electronic communications operators with the largest amount of available spectrum and with the least possible restrictive technical conditions.
- Securing the implementation in the EU of the secondary trading of rights to use radio spectrum.

Introduction of greater flexibility in using the spectrum

Flexibility in the use of radio spectrum is considered a primary instrument to promote competition and innovation in the European market for electronic communications. Both, the authorization of the transfer of rights' to use radio spectrum (secondary market) and the application of the principles of technological neutrality (using any technology) and of services (provision of any service) can contribute decisively to the development of the electronic communications market. According to the guidelines established in the European regulatory framework, both the commercialisation and liberalisation of the spectrum use by its dealers should be promoted.

The introduction of greater flexibility, applying the principles of technological neutrality and of services, should be progressive and ensuring the objectives of general interest (audiovisual policy, security, pluralism of information, etc.) and avoiding distortions in the competitive balance of the agents involved. In order to accomplish this, an analysis of the frequency bands in which the application of these principles will be beneficial, must be carried out, and also the necessary steps for their implementation.

All this should be compatible with the harmonization of the basic technical conditions for the use of the spectrum, in those bands where it has been identified that such harmonization will increase the benefits derived from their use, and for the achievement of the objectives listed above.

Assignment of more Spectrum to operators

The availability of more quantity of spectrum, especially for those bands with better technical conditions for the provision of services and, therefore with a higher economic value, will give way to more competition in electronic communications markets.

This will help to promote investment and the promotion of research, innovation and development of new technologies.

Benefits will be larger if the availability of spectrum is done in the least restrictive technical conditions. It is therefore essential to increase the flexibility in the use of

the spectrum through the incremental implementation of the principles of technological neutrality and of services.

The following actions are suggested:

- Complete the process of "refarming" of the 900 and 1800 MHz bands.
- Complete the process of making available throughout the European Union the 2.5 GHz and 3.5 GHz bands. under the harmonized conditions already approved by the EC Decisions.
- Complete the swith-off of analogical TV in the European Union by 2012, adopt the EC Decision establishing harmonized technical conditions for the use of the 790-862 MHz band, and by 2015 make the band available for the provision of broadband services, with the harmonized technical conditions approved. The propagation characteristics of this frequency band are best suited for the delivery of advanced electronic communication services. It does enable a wide coverage in both in urban and rural areas, and will allow a significant progress in reducing the digital divide, achieving a more uniform economic and social development.
- Identify new frequency bands, whose harmonised use would be beneficial for the European industry and for the promotion of innovation, and in order to obtain greater economic and social benefits from its use.
- Check the possible shared use of the spectrum in the different frequency bands.
- In order to achieve this objective, compatibility studies are needed to establish the technical parameters which are necessary to ensure the effectiveness of this compatibility.

Progress in the study of techniques to optimize the use of spectrum

"Software Defined Radio" can be defined as the result of evolution of fully hardware-based equipment (in which the working frequency, modulation and other parameters of the radio equipment are implemented by hardware and can not be modified) to software-based equipment, in which the parameters of radio, functions, modes and applications can be configured and reconfigured by software.

Equipments based on these new technologies enable the introduction of the "Cognitive Radio", which can be a key factor to promote innovation and facilitate

the access to spectrum use. Moreover, it has the potential to provide important benefits in different applications because it allows a much more efficient use of spectrum.

There are spectrum bands that are not efficiently used, either in terms of time or geographical areas. Through the investigation in these technologies, smarter equipments can be designed which can use this under-utilised spectrum, without interfering with licence-holders. These technologies may also contribute to a more efficient use by the current spectrum licensees.

It is therefore proposed a study in these technologies and the bands, uses and applications that could be used to achieve a more efficient use of radio spectrum.

Impulsing the setup of the secondary trading of rights to use radio spectrum

The secondary market is a driving force that can contribute effectively to the development of new services, increase the number of operators and a greater flexibility and efficiency in the management of frequencies. Furthermore, the introduction of secondary market of spectrum rights to use will increase the flexibility and efficiency in the use of the spectrum.

The possibility of the secondary market will allow for a more effective and efficient use of spectrum in the frequency bands that hold greater economic value, allowing operators who have spectrum in these bands the transfer of unused parts or those that are used inefficiently; And also a way of providing quick access to this part of the spectrum to new companies for the supply of innovative services.

It is proposed to establish at European level the basic rules that enable and encourage the development of this secondary market of spectrum rights to use.

1.3   Net neutrality

Key Issues

-   The technological evolution and the convergence process have resulted in an increased range of services available made available to end users through

electronic communication networks. In particular they have result in the availability of new applications, contents and information society services (information services), in many cases with the intervention of new types undertakings intervening in the supply chain.

- In order that citizens and the economy as a whole can derive the maximum benefits from these information services, it is convenient explore to what extent they can be influenced or conditioned by the Regulatory Framework for Electronic Communications, considering that, in principle, they fall out of its scope, and taking into account the potential risks for the competition related to these new undertakings.

- Central to this analysis should be the debate on "net neutrality", in which the European regulation on electronic communication networks and services should also play a prime role.

- Whilst this framework guarantees competition in markets for electronic communication networks and services (communication services), available both to end-users and to providers information services, this can be insufficient to guarantee competition in information services, as SMP operators may integrate vertically and leverage its market power to the provision of information services, and on the other hand because providers of information services may also reach SMP in its own field and inhibit competition both in the provision of information services and, leveraging its market power, in communication services.

- Among the undertakings intervening in the provision of the information services special attention should be paid to the so called "Internet Intermediaries", which run intermediary platforms between service providers and end users. Examples of these are portals, search engines, or providers of hosting or cloud computing services.

- The Internet intermediaries' business models and commercial strategies differ from those of electronic communication operators mainly because of the different relative impact of sunk costs (leading to greater importance of economies of scale) and also because they typically follow a two-sided market approach. On their hand, although operators can also be seen as

intermediaries between end-users and service providers, they use to charge cost-based prices for the services provided to each user, to a great extent as a consequence of their regulatory obligations.

Why do we need a debate on net neutrality specific for the European context?

In the last years there has been a great evolution in the range of applications making use of communication services, with interpersonal voice communications giving way to access to services, contents, applications, machine-to-machine communications, cloud computing, etc, as well as to new forms of interpersonal communications.

In parallel, operators of communication services are replacing its networks and equipments with new IP based devices, facilitating them the offer of convergent services both from the point of view of the access (fixed-mobile convergence) and from the one of the range of services offered (bundling voice, data, TV, contents and applications).

Furthermore, the use of IP protocol together with the enhanced capabilities of the networks allows a full convergence between communication and information technologies, leading to a flourishing variety of new services available on-line which are already the main contributors to the traffic carried by communication networks.

Also, sometimes these information services provide functionalities which are similar to the traditional communication services (VoIP and TVoIP are the clearest examples) so operators see in these services an opportunity to increase the traffic carried by their networks but also as a risk for its traditional sources of revenues.

Consequently, operators have clear incentives to include in its networks the technical means allowing the provision of information services and embark themselves in a process of vertical integration for its provision. This may result in competition problems between the resulting vertically integrated providers and independent providers of information services.

However, to the extent that information services are not considered "electronic communications" the existing regulatory framework can not deal with these problems.

In particular, the regulatory Framework defines "end-user" as *a user not providing public communications networks or publicly available electronic communications services*[1] and, as a consequence, the providers of information services do not have any specific right regarding the interconnection or access to electronic communication networks and their associated facilities and services[2].

Given the pace at which information services and platforms emerge and evolve, these potential competition problems can't be efficiently solved by the horizontal competition regulation, so it would be more appropriate to define and implement ex-ante rules similar to those currently in force for electronic communications.

Among the undertakings intervening in the provision of information services we can distinguish on the one those providing information services to end-users, and on the other operators of platforms or intermediary functionalities (such are payment systems, portals, search engines or hosting services) which are needed to reach or to use the information services.

This latter category becomes relevant in the supply chain of many information services because, similarly to what happen with the underlying communication services, may constitute bottlenecks for the competition in the provision of the information services, as well as being affected by the upstream competition bottlenecks of communication services.

In spite of these undertakings having lower of sunk costs than electronic communication operators, the economies of scale may be more important for them than for operators as the marginal costs associated to each new customer are close to zero.

So, there is a clear risk that some specific intermediary platforms reach market power and inhibit competition in the provision alternative intermediary platforms,

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[1] Article 2.n Framework Directive.

[2] Article 1.2 Access Directive

but also (leverage this market power) influencing the other elements in the supply chain, both upstream (communication services) and downstream (information services).

The present electronic communications framework seeks to guarantee effective market competition and adequate transparency regarding prices and other characteristics of communication services, so end users can make an informed choice among a variety of competing options. Additionally, in its revision a number of modifications have been included regarding transparency on potential limitations of communication services to access to specific services or applications[3], and giving NRAs the power to impose minimum levels of quality of service preventing the degradation of service and the slowing down of traffic over networks[4].
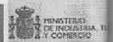
However these provisions may be insufficient in an extended supply chain that incorporates new types of undertakings, including Internet intermediaries, falling outside of the scope of the framework. In particular, the existing guarantees on transparency and effective competition for communication services may need to be accompanied by equivalent provisions regarding the rest of the elements of the supply chain where similar competition problems may arise.

When analysing these issues, the business model behind intermediary platforms becomes relevant, as in many cases corresponds to a two-sided market in which the prices of the products offered in both sides of the market influence each other so, in the more general case, prices on one side are partially (or even fully) subsidized by the prices of the other. By contrast, communication providers use to cover the costs associated with the provision of each service with the revenues obtained from this service, sometimes forced by the regulation which prohibit cross subsidies.

However, given that electronic communication services as well as intermediary platforms are different elements in the supply chain of information services, and that vertical integration of both activities may appear, it becomes questionable to what extent these types of obligations are justified only in one part of the chain.

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[3] Articles 20.1.b and 21.3. Universal Service Directive

[4] Article 22.3 Universal Service Directive

On the other hand, the investments needed for the deployment of electronic communication networks is presently a matter of concern, that has motivated the inclusion of specific provisions in the revision of the regulatory framework intended to guarantee sustainable competition and innovation in the long term as well as adequate incentives for investments in next generation access networks (NGAs)[5].

The services employing the capacities of these new networks are expected to be major contributors to improve the economy and citizens welfare, so the rapid and extensive rollout of NGAs become an important policy objective in order to anticipate these benefits an to reduce the risks of digital divide, justifying the involvement of public Administrations in the promotion of NGAs, including by means of public funds, to complement and accelerate rollouts in areas which are not commercially attractive for operators.

This justifies an analysis of possible changes in the regulatory framework allowing service operators, in specific circumstances, to deploy business models based on two-sided markets, similar to those currently employed by internet intermediaries, so they can internalize part of the revenues coming from information services to finance the rollout of new networks, and reducing the need for public aids.

Obviously, this approach needs to be accompanied with an increased emphasis on measures guaranteeing effective competition in the provision of communication services, as it may derive on operators with greater potential to exert market power against internet intermediaries and providers of information services.

Policy goals

- Definition of a consistent regulatory framework which considers the different aspects and undertakings intervening in the new markets of provision of content and information services through electronic communication networks.

- In particular, this framework should include adequate provisions to guarantee effective competition at all the levels of the supply chain for these services.

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[5] Articles 8.5.d and 12.3 Framework Directive, and articles 12.2.c and 13.1 Access Directive

- Electronic communication operators as well as information service providers
  and Internet intermediaries should be provided with adequate incentives for
  investment and innovation, promoting synergies for the benefit of citizens.

- The early and widespread availability of new information services should also
  be considered as a policy objective, not only because of the benefits that can
  be derived from these services, but also because they will drive the demand
  for NGA services, so reducing the need for public intervention to stimulate
  rollouts.

2. PROMOTION OF ADVANCED INTERNET USE, SECURITY AND TRUST

2.1 Accessibility, empowerment and eInclusion for EU citizens

Innovation and equality are the cornerstones of the Spanish Presidency. Therefore, equality of access to the benefit of ICTs must be mandatory for citizens and companies alike. Digital Inclusion must be a priority, as well as the reduction of the "second digital divide" between the digital natives (qualified and sophisticated use of ICTs) and the rest. The insistence on eSkills and Digital literacy is a precondition for the successful integration of all citizens and the reduction of disparities, especially those living in backward and rural areas.

Enhanced participation in the information society will increase professional and daily quality of citizens' life.

Accessibility is a must in public services and within it, it is usability the key tool for including citizens in the information society. Attention should be paid to them in every programme related to research, development and innovation.
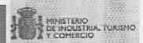
Digital inclusion and ICT training should be considered as another enabler for citizens to take advantage of the information society. However, due to constant change in citizens' needs and the ICTs themselves, a continued and adapted effort is required.

Digital inclusion empowers citizens. The knowledge of ICTs incrementally improves their confidence and ability to improve their professional status, or for the benefit of their business.

The "first digital divide" consists in the gap between those citizens with access to ICTs in general and Internet and those who are excluded and have no access at all to the benefits of Information Society. However, as this gap is closing with more and more citizens and businesses connected to Internet through broadband and other technologies, a new divide has appeared.

This "second digital divide" is about not just who is using the internet but what they are using it for. Therefore it refers to the quality of use of Internet and related

services and distinguishes those who only perform a basic use (internet navigation and mailing) from those able to perform more sophisticated functions, such as commercial transactions, interactions with the public administration using eID devices and social networking.

In order to close this second divide the Granada Strategy for a Digital Europe shall set out both the targets and challenges as well as priority measures directed to companies and citizens, so as to raising awareness about the possibilities of Internet, enabling the intensification of its use and the necessary skills to take full advantage of new technologies.

Nevertheless, the EU should continue focusing on those more disadvantaged segments of society as far as use of ICTs is concerned, namely the elderly (aged 55 years or more), the disabled, those with less economic resources, the less educated and those living in rural areas.
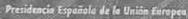
Usability

The next challenge is not only securing and improving accessibility, but to achieve the incorporation of usability, which means that any product, service, application or content is user-friendly for everyone. This concept is included in the goals of "Design for All".

The cultural and social division existent between those capable of using new technologies and those who are not, should not be considered solely a technological problem whose solution lies in creating and maintaining infrastructures accessible to all levels. It should not also be limited to providing knowledge barely technological to citizens, because with these actions only formal access to networks is guaranteed.

Accessibility is an indispensable requirement in public services and usability is currently the key to attract people to the information society. For this reason, it must be a priority goal in all programs and activities related to research, development, innovation and participation.

Employment and citizens' participation

Currently, only a minority of the population that accesses the information society is able to use this access to improve their quality of life, widening their education, their job opportunities, etc.

The information society can play a relevant role in solving the present economic and job crisis, allowing citizens to:

- Self-employment– and tele-working.
- Extended education.
- Increased productivity and competitiveness in their own business.

Furthermore, the information society enables citizens to manage their daily lives and their own interests, improving their quality of life.

As a result, citizens are performing a greater role in society, expanding its knowledge so that they get more capable, with more power of decision and execution.

Citizens must be actively involved in the information society and this requires not only access, but also the necessary skills to use available services, whether they are public services, ecommerce, social networking, etc. To achieve greater citizen participation in the information society, citizens must be motivated in its use, which involves a learning process that can take different forms and it is constantly changing as technology and citizens requirements also evolve.

EU goals for 2015

- Reducing the unemployment rate with the promotion of self-employment and tele-work.
- Enabling that all citizens have free access to Internet in certain, public places.
- Reducing the cost of Internet access, adjusting prices to those most advanced countries in using ICT.
- Impulsing the development of standards for accessibility compliance at European level.

- Promoting the development of rules for the obligation to incorporate in ICT equipments access devices through a digital certificate.
- Reducing by 50% the number of citizens who are not regular Internet users.
- Reducing by 50% the number of citizens who do not make online transactions.
- Defining European indicators to measure usability.
- Promoting measures that encourage the use of online services, including:
  - Eliminating the additional cost of online procedures.
  - Reducing the VAT on online transactions.

Actions

- Involving the ICT sector and, in particular, the contents industry, in the development of usability-friendly products.
- Involving the ICT sector in the obligation to incorporate solutions for access through digital certificate.
- Involving both local and regional governments for:
  - Providing a public and free access network to Internet.
  - Availability of free call-center services for the performance of online transactions.
  - Promoting and disseminating the use and benefits of online transactions.
- Involving and supporting the third sector, civic associations etc., so that all their members use the information society.
- Promoting actions to disseminate the benefits of using the information society and online services.
- Promoting lines of action in the information society in order to promote job creation, tele-working and self-employment.

2.2   Innovation in micro-companies

The use of ICTs by companies is still growing. Broadband has enabled the creation of new services, growth of trade, new business models and organizational and the development of collaborative activities between companies.

In Europe, there is a good degree of connectivity by companies. However, the differences in the use of ICTs by European companies compared to other advanced

regions, are evident in the most sophisticated use of ICTs, such as, electronic commerce and, in general, the incorporation of ICTs to business processes.

ICTs investment has increased considerably and represents a higher percentage for the gross fixed capital of industrial sectors. ICTs have made possible the development of other sectors of the economy such as biotechnology, entertainment or the insurance sector.

But taken alone the massive investments in ICTs have not been sufficient for increased productivity. Indeed, the increased productivity was lower in many countries during the 80s and this situation lasted until the middle of 90s.

In the case of Spain, and some other European countries, this paradox has been extended over many years, so there was no evidence that ICTs had contributed to productivity growth or the improvement of wealth in some sectors. By 2000, there was a general consensus that productivity growth was due to two factors: The technological progress and the investment in ICT. Now, the idea broadcast by most of the experts is that the use of ICTs must be accompanied by processes of innovation in companies, a change in the organizational model, adequate training of employees and other changes in the production process of new products and services that will make a positive impact on business productivity.

The intensive training in ICTs is an important factor to be considered because it is estimated that about 4% of total employment are created in specialized occupations in ICT and 20% of jobs are demanding people who use ICTs intensively.

As noted above, investments in ICT assets are not sufficient for a good use of these technologies, but it must be accompanied by changes in the organization, the processes and training activities. In fact, it is estimated that investment in intangibles should be significantly greater for a proper use of ICT.

In a more competitive and globalized economy the companies that will succeed in the medium and long term will not only be those that make innovation the centre of its activity, but also have professionals with a properly training. These are the current challenges to implement the renewal that requires the production system and working methods.

It is therefore necessary that the education system produce professionals that the knowledge economy needs, also increased training and continuous retraining of staff of companies that offer them or use them.

The incorporation of ICT to business is, certainly, one of the pillars, not only for the development of information society, but for their own economic and social development as these technologies generate the creation of new models of business and organizational processes and it makes possible, in turn, significant improvements in productivity.

SMEs, micro-SMEs and the self-employed individual are important players in economic activity. However, companies of this size are more difficult to participate fully in the information society, as is considered necessary to promote specifically their participation.

The actions aimed at this group to adopt ICT, should focus on awareness of their utility and help finance their acquisition.

On the other hand, SMEs in this global crisis have to be more innovative in presenting their solutions, relating to how they are going to look for their customers, speed of delivery and implementation of their solutions. Now more than ever, SMEs have to endure their existence in innovation processes and technological processes more efficient.

SMEs face the challenge of understanding the changing context in which they find (increased competition, new products, faster processes and new geographical environments) and adapting to it through innovation.

The current business environment, the "knowledge economy", determines that the adoption of ICT is essential to induce improvements in competitiveness and an efficient means to enable innovation.

Other ways, it seems clear that innovation is easier for SMEs integrated in associations/clusters, than SMEs which are isolated. This is because there is a better exchange of information, a greater flow of employees and easier to finance innovative activity.

Therefore, the challenge is the integration of innovation in SMEs through the development of ICT based projects, to meet common needs of SMEs, allowing the creation of a more favourable environment for their development.

2.3   ICT privacy, resilience, security, trust and data protection

Today the access to resilient networks is the foundation for the knowledge society which already underpins many aspects of our lives. Information and communication technology systems, infrastructures and services, including the Internet, play a vital role for society, and their disruption has the potential to cause huge economic damage, underlining the importance of measures to increase protection and resilience aimed at ensuring continuation of critical services.

Security incidents risk undermining user confidence. While severe disruptions of networks and information systems could have a major economic and social impact, everyday problems and nuisances also risk eroding public confidence in technology, networks and services. In that sense, trust and security are key enablers of the Information Society and will become more and more important as we move towards a digital environment based on many interacting objects, devices and systems (the so called Internet of things).

Therefore, the issues of privacy, resilience, security, trust and data protection will increase in importance in the years ahead and are important for the take-up of and innovation in services. In the new inter-connected environments these issues will require new solutions through user-friendly and trustworthy interfaces, taking into account the privacy needs and data protection regulations in place.

A high level of Network and Information Security in the EU is needed in order to support:

    a.   The freedoms and rights of citizens, including the right to privacy;

    b.   An efficient society in terms of quality in information handling;

    c.   The profitability and growth of trade and industry;

    d.   Citizens' and organizations' trust in information handling and ICT systems.

The ICT sector is vital to most sectors of society making Network and Information Security a joint responsibility of all stakeholders, including operators, service

providers, hardware and software providers, end-users, public bodies and national governments.

Therefore, an enhanced and holistic European strategy for network and information security is of vital importance to tackle current and future challenges.

This collaborative European approach to network and information security should encompass actions in the following fields:

1. Awareness-raising and capacity building directed to end-users and businesses in Network and information security matters. This is an essential step for implementing recommendations and best practices regarding safe and responsible use of the Internet.

2. Reinforcement of network and information security support services. In particular, Computer Emergency Response Teams (CERTs) be created and enhanced, in order to spread appropriate information amongst end-users and businesses regarding vulnerabilities and risks, reinforcing the cooperation between national CERTs on a European level.

3. Foster research and development initiatives as well as education and training in the field of network and information security, in order to ensure the development of a competitive and vibrant market in security solutions and the availability in the EU of the necessary technical skills and professionals.

4. Promote electronic identification initiatives, such as eID, and guarantee data protection and respect citizens' privacy and better control of their online personal information both in that field as well as in the development of the Internet of Things and RFID based services.

5. Organise national exercises and/or regular European exercises in the area of Network and Information Security, and especially, of critical information infrastructures which are vital for the well functioning of the public and private sector.

3. EUROPEAN CHARTER OF RIGHTS FOR USERS OF ELECTRONIC COMMUNICATIONS SERVICES

At present, two different Community Law Directives provide for protection for end users of electronic communications services: on the one hand, general protection for consumers and users (93/13/EEC Directive and 97/7/EC Directive) and, on the other hand, special protection for end users in this sector (2002/21/CE Directive and 2002/22/EC Directive).

The above mentioned regulations provide end users of electronic communications services with a high degree of legal protection in the European Union. It is necessary to clearly inform citizens of their rights so that they have adequate information about them. To this end, the adequate instrument is the "Charter of Rights for Users of Electronic Communications Services" (hereinafter, "Charter of Rights"), which should be accessible and user-friendly.

Although service providers guarantee end users of electronic communications services some basic rights, it is convenient to increase protection for certain issues. The Charter of Rights is an adequate instrument to strengthen protection for end users.

Scope of Application

The Charter will include those rights conferred to all end users of electronic communications services, irrespective of the provider chosen.

The Charter does not govern features included in the universal service, nor does it include the specific rights regarding personal data and privacy protection in the electronic communications sector.

The rights acknowledged by this Charter are understood without detriment to those rights users of electronic communications services may be granted as consumers, pursuant to national and community provisions concerning general protection for consumers and users.

Rights of End Users

The Charter will develop the content of the rights listed below. Irrespective of the provider chosen, all citizens of the European Union will have the following rights:

1. Contracts. The increasingly wider use of techniques to contract services remotely has involved great progress in terms of access to services. Nonetheless, this simplicity in contracting should be counterbalanced with appropriate guarantees so that end users can have a document containing all applicable conditions.

2. Cancellation and Change of Service Provider. In order for the market of electronic communications services and networks to be effectively competitive, as well as to safeguard the rights of end users, it is necessary to establish mechanisms that guarantee their right to cancel services at any time, and to change the service provider while keeping the telephone number.

3. Transparency and Information. In a market where so many service providers offer electronic communications services, it is essential to establish mechanisms to allow end users to have quick, simple and easy access to information on the conditions every service provider offers, especially in relation to pricing. It is also important to inform users of conditions, such as potential minimum periods or their relation to the purchase of pieces of terminal equipment, which could later influence their decision to cancel services or change the service provider.

4. Quality of Service. Users should be able to easily access comparable and updated information on the levels of service quality reached by service providers. It is important, for certain quality parameters, that service providers assume their responsibility for quality in the contracts entered into, and that users receive compensation in the event of breach of contract.

5. Compensation due to Service Interruption. End users should be compensated for service interruption inasmuch as said interruption is not attributed to undue use by clients. For certain amounts of compensation or duration of interruption, users should not need to file a complaint against

the service provider. The latter should pay the compensation even if it was not sought by the user.

6. <u>Control over Expenses.</u> Certain guarantees that allow limiting or controlling expenses should be available to all users. In this respect, the following should be provided for: bills should include a minimum number of details; users should be able to switch off during certain calls; only services which are not paid should be interrupted; different prepayment options should be offered to users; among others.

7. <u>Customer Service.</u> In the field of electronic communications, in most cases, customer service is remote. Adequate and effective information should be guaranteed to the user by these means. Moreover, it is important that users have documentary proof of procedures, claims and complaints followed and filed by telephone.

8. <u>Dispute Resolution Procedures.</u> End users should be provided with quick and easy procedures to file complaints before administrative agencies. It is important to require service providers to follow procedures and comply with final resolutions, without detriment to the option of going, alternatively or subsequently, to the Courts of Law.

9. <u>Differently Abled Users.</u> Differently abled users should be guaranteed the same rights other end users enjoy regarding both access to and availability of services. Differently abled end users should benefit from competition and be able to choose service providers, by requiring them to meet protection requirements.

10. <u>Premium Rate Services.</u> The general use of the telephone bill as a means of payment for services which are not considered electronic communications makes it essential to provide users of these services with special guarantees. For instance, it is necessary to detail different charges, and interruption should be restricted to non-paid services.

11. <u>Pan-European Services.</u> It is necessary to encourage the creation of a Pan-European Space of electronic communications services. In this regard, users should be able to make calls to other destinations and services in the

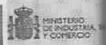European Union with no restrictions at all. Furthermore, it is important to encourage the use of services with a single European number, such as access to emergency services by dialling "112".

Finally, to draft the Charter of Rights, the different opinions of all parties involved, including consumer associations, providers and Administrations responsible for consumer issues, should be obtained.

4. CONTENTS AND DIGITAL SERVICES

4.1 Digital Single market

The single European information space also known as "Digital Single Market", has been one of the main goals of the i2010 initiative. However, the experience from the last years regarding the build-up of this single market has been all but encouraging. This was mainly due to existing national barriers in the Member States for the market of ICT products and services. Therefore, the constitution of a truly DSM must be the big challenge for the next years considering its impact in growth, job creation and its capacity to stimulate innovation in the ICT sector. Furthermore, 40% of productivity gains in the EU are originated in the ICT sector, as well as 25 % of total investment in R&D.

Within the framework of the new Digital Strategy for 2015, it seems now the moment to bolster the approach to finally reach the accomplishment of the DSM from both the demand and the supply side, and with the adequate balance between consumer protection and the free distribution of contents and services online.

There is a need to eliminate the barriers to the digital single market so as to allow businesses and users to offer and take up services across borders without limitations. A modern, pro-competitive, and consumer-friendly legal framework for a genuine Digital Single Market is needed. Inter alia, the regulation of consumer protection, fiscal issues and payment systems should be tackled.

Citizens must be empowered to play a full part in the single market. This requires strengthening their ability and confidence to buy goods and cross-border services, in particular on-line. Moreover, it means that consumers can access the different services of the Information Society regardless of their country of residence or work.

From the supply side, it is about structuring a global market for ICT products and services with different layers corresponding to:

- Infrastructures: Networks and telecommunication services, including physical means of transmission and corresponding hardware and software equipments.

- Online services and applications, such as e-Health, eLearning and e-Inclusion ("Soft Infrastructure").
- Interoperability of Digital contents over different platforms.
- Elimination of barriers that hinder the development of the digital services and contents industry.[6]
- Actions to promote the supply of online legal products to consumers with adjusted prices.

The Digital Single Market aims at achieving a regulatory harmonization for each of these layers, so as to provide citizens and businesses a unified supply that will ensure a more efficient and sustainable economy. This goal should not be interpreted as part of the centralisation-decentralisation debate (or subsidiarity versus internal market) but in the sense of removing national barriers that impair the market, and thus opening it to all Member States.

Public initiatives that may impulse the Single market may include:

- Promotion and diffusion of the advantages of a Single European Market for ICTs, with relevant economic data that endorse the inherent benefits for all.
- Elaboration of deregulatory packages for each of the layers.
- Harmonization and convergence of IPRs systems in the Member States.
- Supply of pan-European initiatives that Member States cannot implement on their own, such as "global Services in a single market for public services".
- EU finance of online pan-European Services (of the soft-infrastructure type) including demonstrative projects that are difficult to implement by Member States individually.
- Development of great infrastructure projects with a sustainable dimension as regards their design and implementation.
- Use of public procurement for the acquisition of ICT products and services.
- Use of open standards and open source software to promote common environmental norms for ICT products and services.

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[6] The Industry of creative contents already generates 2,6 % of EU's GDP and 3% of employment

The completion of an Online Single Market, the so-called "Fifth Freedom" will be a key element in Europe's sustainable economic recovery and social development. The productivity gains involved will stimulate innovation and creativity, make government services easier and more efficient to deliver, and increase the opportunities for participation and democratic expression.

4.2   Development of the European Digital Content Industry

Digital contents are leading to rapid growth in Internet use and, at the same time, the growing number of users has stimulated content development.

An important part of the revenues from the content industry are obtained via Internet. One of the fastest growing segments is online advertising, which has showed increases of up to 30% annually. Another rapidly growing segment is that of user created contents, which has resembled the increase in the number of communities and social networks.

Although there have been some developments of contents relating to public services (health, GPS, etc.), these contents represent a very small percentage as compared to entertainment contents.
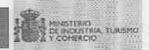
Generally speaking, creative industries is a wider concept than the digital contents itself, if we consider that this industry displays a higher growth rate and is already an employment source.

Digital Contents have increasingly led the promotion and development of economies and modern societies, because of his dual role of tools for wealth creation in a context of knowledge economy, and driver for the development of information society. Furthermore, the evolution to a progressive digitalisation of the industry represents a great opportunity for the future, with growth expectations in the business digital sector highly relevant for the next years.

The keys to the future development of the digital contents industry depends largely on the "shift towards the digital", the internationalization of industry, adaptation to new online business models and the training of professionals.

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Conversely, the government must make an effort to ensure the accessibility of contents developed by the industry, fostering an increase of its demand in our societies, and promoting all the activities of the value chain from the digital contents industry. And this covers the whole chain, from manufacturing to consumption, and the intermediate stages of packaging and distribution.

To achieve these aims, we will require the implementation of the following measures:

- Creation of knowledge centres: social spaces for civic innovation development, technological showcase and preservation of knowledge, encompassing of creative, innovative and entrepreneurship activities.
- Increased funding for businesses, particularly SMEs, to develop contents and services for citizens, especially in rural areas.
- Creation of specific e-learning courses for employees in the digital content industry.
- Financing of projects for the definition of new business models in the digital contents industry.
- Setting-up of micro SMEs networks for the production of digital contents.
- Promotion of the digitalisation of accessible contents from our cultural heritage.

4.3   Management of Intellectual Property Rights (IPRs)

As pointed out previously, there remain regulatory and territorial obstacles for the creation of a single digital content market at the European level as well as illegal practices which still hamper its development. In this regard, a variety of initiatives in the field of intellectual property are needed.

Digitisation and orphan works

There is a need to clarify the legal implications of mass-scale digitisation and possible solutions for the issue of transaction costs for right clearance. All possible options should be explored, including collective licensing, with the aim of establishing a clear and future-proof regime that strikes the right balance between rewarding right holders and allowing innovative uses of existing works.

In particular, the issue of orphan works has to be tackled - their digitisation, preservation and dissemination – in order to establish common standards on the level of due diligence in searching for the owners of orphan works and resolve the issue of potential copyright infringement when orphan works are used.

As a key building block in the new comprehensive strategy on intellectual property rights, an initiative on orphan works should provide for an EU-wide solution to create legal certainty, facilitate the knowledge flow necessary for innovation, and prevent obstacles to intra-Community trade in orphan works.

Limitations and exceptions to exclusive rights

EU rules on copyright have harmonised the scope and tenor of the exclusive rights without, however, providing clear boundaries for these rights by means of uniform exceptions. This is indeed a state of affairs that should not persist in a truly integrated internal market. The unclear contours of strong exclusive rights are neither beneficial for the internal market in knowledge products nor for the development of internet services.

Further harmonisation of copyright laws in the EU, in particular relating to the different and optional limitations and exceptions, would create more certainty for consumers about what they can and cannot do with the content they legally acquire. EU policy should take a focused approach, examining each type of exception individually and stating clearly what policy aim is furthered by harmonising an exception and making it mandatory in all Member States.

Future policy should make a clear distinction and proposals should clearly state which exceptions should be harmonised and made mandatory in scope as a matter of priority and the precise goals pursued in doing so.

In particular, there is a need to find new solutions for easier, more affordable and user-friendly rights clearance for amateur users and the development of a new limitation for transformative uses which should be flexible, future-proof while consistent with the three-step-test applicable to copyright limitations under the Berne Convention.

Commercial users' access

The essential policy objective is to simplify the cross-border management of rights for online uses such as online music services and video services.

A possible first step towards enhanced licensing efficiency would be the creation of a streamlined pan-European and/or multi-territory licensing process. Several sub-options could be discussed in this context: The most immediate approach would consist in aggregating the two indispensable "digital copyrights" involved in the interactive online dissemination (e.g. interactive "making available"), the digital right of reproduction and the digital performance right. A more ambitious form of "one-stop shop" could also be envisaged.

Freely accessible ownership and licence information on world repertoire is an option that has the potential to ease the operation of multi-territory and multi-repertoire licensing and thus help overcome current market fragmentation.
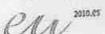
Protection of right holders

The introduction of an extended or mandatory collective management system for the administration of the "making available" rights of authors and performers could be advisable.

Moreover, measures focusing on the governance and transparency of collective rights management organisations could ensure that the interests of creators are administered in the most efficient manner.

It is also important to highlight that it is appropriate to launch actions for achieving a better protection of Intellectual Property on the Internet. In that regard, any action adopted should take fully into account the citizen rights to privacy, data protection and freedom of expression, among others.

The actions to protect Intellectual Property Right in the digital context should focus on the restriction of the access through the Internet to web pages that make possible the massive infringement of intellectual property rights. The restriction of the access to the web pages should be adopted under the control of the judicial

authority when they could affect to the freedom of expression or the freedom of information.

4.4   oGov and eGov: Open and Electronic Government

At a moment in which Europe faces unprecedented social, economic and environmental challenges, a common eGovernment strategy must be part of the response to those challenges. The use of ICTs in and by the public administrations needs to be a cornerstone in the development of a more participatory society, the reinforcement of the single market and the build-up of more efficient and effective public administrations.

It is therefore necessary to redefine the relationship between citizens and public administrations alike, through the "opening" of these public institutions and by enabling and empowering citizens to hold a more active role in the utilisation and supply of services, as well as a greater efficiency of those.

The contribution from the society needs to be commonplace in the elaboration of public policies in its different stages: design, implementation and evaluation. Their participation is essential in the design and supply of policies and services that allow our societies to regain the growth path and projecting it onto the single market.

In defining the EU's strategies for 2015, four key objectives have been identified:
- Develop an Action Plan for Open Government.
- Promote the European organizational, legal and technical mechanisms, to ensure the implementation of eGovernment in the EU, exploring the new collaboration opportunities enabled by the Treaty of Lisbon.
- Develop eGovernment solutions that improve efficiency, effectiveness and sustainability in the provision of public services.
- Develop digital services that support mobility of citizens between different EU countries.

Develop an action plan for Open Government

Governments need to promote actions for the development of more effective digital services, promoting the reuse of public data, as well as transparency in public policy development and citizen participation in all areas. In particular, the re-use of

public information constitutes a relevant building block both in terms of transparency and the promotion of new businesses and innovative services. To this end, such actions must be aimed at seeking the cooperation of the Administration with businesses, citizens and society, through a non-asymmetrical communication.

Governments must rely on the cooperation and participation of citizens and their organizations. Therefore, public administrations must be proactive by seeking and promoting citizens' participation in all activities. This ranges from engaging citizens in shaping and producing services to citizens' participation in policy formulation. The ability to collaborate with citizens must become a core priority.

On the other hand, governments must endeavour to achieve an objective of transparency and must provide the public with clear ad regularly updated information in order to understand all aspects of their actions, their decision processes and outcomes. They must also have mechanisms that allow citizens to indicate areas in which greater transparency is needed. All public information from a draft law to the budget data has to be available for citizens, prioritizing the use of standards and open source, enabling its reuse.

The promotion of collaboration, transparency and participation will result in the improvement of the quality of public services and will increase the confidence of citizens.

Actions

- Dissemination of Open Government initiatives that promote citizens' participation and collaboration, encouraging the use of social media on the relationship between citizens and government.
- Introduction of measures to provide and promote transparency.
- Foster a new culture of public sector information re-use.
- Facilitate and simplify the re-use of public sector information, inter alia, by the adoption of generic policies of free re-use, in the sense of "free of charge" and "free from unnecessary conditions", and by making their data publicly available in a structured, updated and user-friendly way.

Promote the European organizational, legal and technical mechanisms that ensure the implementation of eGovernment strategies

In the recently approved Lisbon Treaty, Article 197 specifically empowers the EU to "support the efforts of the Member States to improve their administrative capacity to implement the EU law", authorising to use even the ordinary legislative procedure for that purpose. As a key tool in the current administrative life, there is therefore the possibility of exploring and exploiting this new power of the EU concerning the administrative cooperation in the field of eGovernment. This administrative cooperation is critical to remove all barriers that prevent the development of eGovernment services, especially those that require in their supply the collaboration of various Public Administrations.

To ensure the implementation of eGovernment strategies at EU level is necessary to build a consensus around the rights and duties of citizens in their electronic interaction with the public administrations. And this with due respect to criteria of non-discrimination based on gender, age or place of residence and ensuring the right of choice of the means of connection and its mode of use.

An effective guarantee of the rights and obligations of citizens equivalent to the existing means and which involve physical presence, with legal interoperability at EU level, is key to service quality perceived by the citizen and the development of cross-border services.

The Changing model of relations between Public Administration towards a greater collaboration in the interests of more effective services, tilts around several key enablers. Deepening the interoperability of these, between the Public Administrations of the EU and the Member States is required in order to achieve a higher degree of implementation of eGovernment, especially in the field of identity and electronic signature.

Actions

- Developing the powers of administrative cooperation in the field of eGovernment authorized by the Lisbon Treaty and enshrined in Article 197.
- Developing a framework of rights for citizens in their electronic relations with Public Administrations.

- Developing a common infrastructure for interoperability at European level (HW and SW), to reduce the cost of deployment of cross-border eGovernment services.
- Defining a European Interoperability framework for identification and digital signature. (eID)

Developing digital services that support the mobility of citizens across different EU countries

Electronic services delivery by public administrations in the European Union is a necessary component for the implementation of Community policies.

The European Union has promoted since more than a decade, different programs to facilitate the exchange of information between public administrations of Member States. However, it is necessary to define a common strategy to develop a set of digital services to ensure the mobility of EU citizens so they can study, work, live or retire in any of the EU countries.

Collaboration between the different public administrations will facilitate interoperability between them and the development of cross-border services.

Actions

- Building cross-border eGovernment services which facilitate the mobility of citizens for study, work, residence or retirement purposes and, in particular, by relying on electronic information exchange so as to avoid citizens to provide information which is already held by the Public Administration.
- Building cross-border eGovernment services to facilitate business creation.
- Building cross-border eGovernment services that facilitate the provision of products and services by companies:
    - Promotion of electronic invoice.
    - Advancing the implementation of electronic procurement.
- Definition of indicators and measurement systems to assess the development of digital services that support mobility of citizens between different EU countries and in particular:
    - Intra electronic invoicing.
    - The use of digital services within the Community.

Developing eGovernment solutions in order to improve efficiency, effectiveness and sustainability in the provision of public services

In recent years eGovernment strategies have been aimed at the promotion and development of digital services. It is now necessary to focus the efforts on increasing the use by citizens and businesses, as well as to encourage innovation in administrative management respecting efficiency, effectiveness and sustainability criteria, and this through:

- Redefinition and redesign of administrative procedures to achieve greater efficiency.
- Reuse of solutions designed by the various administrations.
- Promoting transparency in administrative procedures.
- Environmental protection.
- Development of multi-channel solutions that facilitate accessibility.

Greater fluidity in the relations and exchange of information between different administrations will favour the build up of public services more responsive to the needs of society, and which imply less administrative burden on citizens.

In addition to redoubling efforts to achieve better services for citizens, we must deepen our knowledge of their effect on the creation of a more competitive Europe. More precise information about eGovernment policies, establishing a system of indicators to better grasp the relation between inputs (human and financial), outputs (quantity and quality of services) and outcomes (effects on different business sectors and citizens life), is necessary for the construction of a more efficient and effective Public Administration.

Actions

- Promoting innovation and training of public employees as a way to enhance the effectiveness and efficiency of services and relations with citizens.
- Promoting innovation in administrative management.
- Adoption of measures to increase security and trust in eGovernment services.
- Adoption of measures to spread and encourage the use of digital services.
- Promotion of measures to reduce climate change effects such as:
  - Reduced consumption by the purchase of more efficient equipment.
  - Implementing energy saving measures.

– Definition of new indicators and measurement systems to assess the impact and user satisfaction in the use of eGovernment services, by reference to previous experiences within the EU and other international proposals.

Citizens must also be able to contribute to public policy in its different stages: development, implementation and subsequent review. Their involvement is essential in the design and delivery of public services.

4.5   e-Health

In this area, the Spanish Presidency has four strategic goals: to introduce a global vision for an e-Health policy totally integrated in the post 2010 European Digital Agenda; to drive a new e-Health Action Plan, facing the new European challenges; to develop and promote ministerial agreements, in particular regarding integration of e-Health in community policies and implementing reinforced governance mechanisms; and to contribute with our experience, describing our e-Health system, our main achievements and our vision for the future.

More specifically, the objectives of the Spanish Presidency will be as follows:

- **e-Health for a healthier Europe**: ensuring quality and continuity of care in the European Health Space.
- **e-Health for sustainable growth and employment**: a healthy citizen for an efficient economy.
- **e-Health for innovation and social change**: technological innovation and creativity to transform healthcare processes to and to improve living, working and ageing conditions with a focus on disease prevention and chronic care management.
- **e-Health for local and regional development and cohesion**: e-Health as a determinant of economic, social and territorial cohesion.
- **eHealth to empower ePatients**: eHealth can play a key role to increase citizen's participation in managing their own healthcare conditions.
- **Using technology to measure healthcare outcomes and efficiencies of public healthcare policies**. Transform the health information currently stored in health information systems into knowledge.

On 1st December 2009, the European Council, in its Employment, Social Policy, Health and Consumer Affairs formation, adopted under the aegis of the Swedish Presidency, Conclusions on "Safe and efficient healthcare through e-Health". The Council recognises in them the need for further political leadership and to integrate e-Health into Health policy in order to develop e-Health services on the basis of public health needs.

In order to further develop common action in those directions, the Spanish Presidency will put emphasis in two transcendent aspects:

> Promote the further integration of e-Health in European policies and streamline eHealth into the strategic health priorities of Member States.
> The implementation of reinforced governance mechanisms.

The Spanish Presidency will propose specific operational objectives and milestones in order to conceive and implement initiatives to:

> Reinforce leadership and political and strategic commitment.
> Building confidence and acceptance, in particular in professionals and patients.
> Bringing legal clarity and ensuring protection of health data.
> Reinforce the European efforts towards the interoperability of health information systems (epSOS).
> Explore the opportunities of telemedicine solutions to guarantee equal access to healthcare services.
> Solving technical issues and facilitating market development.
> Making e-Health an important issue in regards to Competitiveness, Growth and Employment, Information Society, Innovation and Cohesion.

5. STRENGTHENING THE ICT SECTOR AND FOSTERING ITS CONTRIBUTION TO SUSTAINABLE DEVELOPMENT

5.1 Research and development in the ICT Sector

The ICT Industry in OECD countries devote to R&D investments nearly double than the automobile sector and triple that the pharmaceutical sector. However, this distribution of R&D in the ICT sector is not uniform. U.S. represents about 40% of expenditure on business R&D, EU-15 25%, Japan 22%, and Korea 9%.

Currently and with a view on the future, there is a trend towards global research networks, most of them located in the western world but with a strong growth in the emerging Asian countries. As a significant indicator, the Chinese patent registrations have tripled in a decade.

There is also a trend of increased spending on innovation connected with ICTs in other sectors, especially in the automotive sector, the financial services and the defence industry.
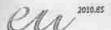
As discussed, future growth not only involves the use of ICTs by citizens, businesses and public administrations, but the necessary development of an ICT sector that can compete in a globalized world.

The evolution of ICTs and audiovisual services has a significant impact on European economy, not only from the point of view of their business contribution to Spanish GDP and employment, but also as platform and enabler of transformation processes in all areas, and creation of innovative undertakings.

The ICT sector has shown greater resilience than other sectors to the economic crisis. However, the sector has not been immune to it, hence it is necessary to continue supporting the sector activity, as well as stimulating its role as replacement of our country's economic model.

The challenges to face would be the following:

1. Placing Europe at the forefront of Knowledge in the ICT sector.

2. Promote a highly competitive ICT business network.

3. Develop an ICT innovation ever more integrated with other sectors and internationalised.

4. Setting up for the ICT sector more efficient innovation and developing programs.

5. Promoting ICT innovation and development as horizontal to other sectors of economic activity as an horizontal element and seeking the internationalization of innovation. Integrate R&D with innovation and commercialisation.

5.2   Green ICT

Currently, economic growth and ICT are two aspects intrinsically linked. However, the depletion of natural resources, population growth and climate change result in the need for a sustainable economic growth strategy. Therefore, for this new strategy of sustainable growth the ICTs will stand as a fundamental and decisive part.

It is necessary to reduce emissions caused by ICTs, which represent about 2% of total global emissions. But what is most important is that ICTs can play a decisive role in reducing emissions from other sectors. Therefore, the objective is to increase energy efficiency not only "from the ICT sector" but also and especially through ICT. An economy more energy-efficient will lead to lower CO_2 emissions. Therefore we will have a sustainable economic growth based on GREEN ICTs.

The European Union is in a privileged position in relation to lead this new economy not based on traditional energy sources, which are those that cause significant CO_2 emissions. The size of the European economy, its level of education and innovation are crucial aspects that allow the EU to lead this change.

With this objective, the Swedish EU presidency, in his conference in Visby, marked the main priorities in relation to sustainability for the timeframe 2010-2015. The Spanish Presidency with the Granada Strategy for a Digital Europe pursues the implementation of measures to promote, through the use of GREEN ICTs, sustainable economic growth, increasing energy efficiency and cleaner energies towards reducing the effects of climate change. The key points for the transition to a sustainable economy based on GREEN ICTs are:

- Policies to promote the application of ICTs in the most important industrial sectors for greater energy efficiency. The development of these policies will require shared solutions, best practices and common problems of different Member States to use this experience and knowledge throughout Europe. The ICT sector in the EU must show their leadership in climate change policies, while the EU and Member States must provide the most appropriate regulatory framework, beyond the simple development of guidelines on hazardous substances or recycling. It is necessary to stimulate demand, through incentive programs and reporting on the need of changing the model to potential customers.

- Policies are needed to ensure that the behavioural patterns of companies and citizens are more sustainable. This requires a change in attitude and behaviour, fostering that Member states, businesses and all citizens are aware of the relationship between GREEN ICTs and sustainable growth.

- Production by the EU of next-generation GREEN ICTs, based on new technologies and new applications, laying the groundwork for sustainable growth in 2015 and beyond. By 2015 the EU must be prepared to achieve objectives beyond the marked timeframe of 2020. For that it is indispensable to remove important barriers to innovation and to establish an infrastructure, physical and non-physical, that will help achieving environmental objectives and long-term economic growth. Physical infrastructure must be prepared to the change to a low-carbon economy and society. These types of infrastructures are mainly electrical, from the mobility and construction sectors. But non physical infrastructure is also extremely important, such as:

  o Adequate legal and technical frameworks that encourage innovation.
  o Better access to the funding of this type of innovative actions and programs of R&D leading to innovative solutions from prototype to production.
  o Tax incentives for production and consumption should be launched towards accelerating the process of switching to a greener economy.

The ICT sector itself must significantly improve its energy efficiency so that ICTs are considered not as a polluting source, but as an innovative solution that facilitates change.

The current economic crisis is a unique opportunity to change to a more sustainable economic model. For small and medium sized enterprises change should be easier and be based on innovation. In the larger ones this change is more complex, however their benefits will be greater in terms of energy savings. Large companies must make cost-benefit studies to discover the great advantages of an economy based on GREEN ICTs. Governments should also lead this change by switching to more efficient systems. This also requires cooperation between enterprises and the creation of public-private partnerships to share experiences and best practices to accelerate deployment of GREEN ICTs. For a quick mobilization access to long term funding will be necessary, and at this point the European Investment Bank can play an important role.

Within some of the operational measures required to achieve the above objectives, it will be necessary to attain a globally accepted definition of "what sustainable growth means". It will also be needed a commonly accepted system to measure and evaluate attained changes and to identify the most relevant barriers that impede the development of GREEN ICTs.

We can highlight as examples of this new economy based on GREEN ICTs within the sector: development of software applications, consumer electronics devices, network components, energy-efficient semiconductor components, extension of cloud computing, virtualization or development of low-consumption Datacenter...

As examples of ICT-based applications that could contribute to a more sustainable economy we can highlight:

- The promotion of tele-working.
- The reduction of energy consumption in buildings (up to 17%) with the introduction of smart meters to monitor the consumption of gas, electricity and other resources.
- The introduction of intelligent networks that control the consumption of street lighting.
- Improving the efficiency of public transport.

- Promoting the use of video conferencing to avoid nonessential travel and reduce commuting, etc.

5.3   A new strategic approach to ICT and IS indicators

ICT technologies and the Information Society keep developing at an increasing pace in all modern economies and countries. So do their social and economic implications in the daily life of citizens and entrepreneurial activities. To keep up with this pace, private decision and public policy makers need to rely on the most up-to-date, homogeneous and adaptable ICT and IS indicators.

These indicators must provide the right benchmarking framework to measure both differences in the level of take-up between Member States and their actual situation and rate of growth, the latter being more closely related to the social and economic outcomes of ICT policies. Thus, an innovative set of indicators and methodologies, based on actual supply, use and overall impact of ICTs is needed.

Current indicators sets and methodologies may not reflect, in some cases, the specific ICT sector dynamics, due to reasons such as:

- Different-date parameters in the same reports; some obsolete.
- Need to introduce new, conceptually updated indicators in areas like broadband coverage, more appropriate for a better 'digital divide' assessment.
- Some existing indicators need to include more parameters for a more accurate approach to reality.
    - Wireless technologies should be added to DSL and cable when measuring broadband coverage and penetration.
    - Weighted indicators (by number of users, amount of population, etc.) would better reflect reality better in many cases.
    - Bundling of services, promotions, subsidies and new, more sophisticated price schemes are indeed part of market dynamics all across OECD countries, but they are still not considered when calculating some price indicators.
    - Quality of service and user perception variables should have their own set of indicators.
    - Frequency of availability and publishing should be higher.

Heterogeneous, obsolete, incomplete data may be misleading about how IS is perceived by citizens and enterprises, as well as the short-term effects of public policies and efforts aimed at the development of ICT-based economies.

A three-fold strategy is proposed to overcome this challenge:

1. Governments should acknowledge the importance of making updated, flexible, IS indicators and methodologies more frequently available for international entities to process.
2. In doing so, governments should agree on the need to dedicate the appropriate efforts to this task, including the effective funding and provision of resources to national entities aimed at producing IS indicators.
3. International entities should reinforce the production of consensus-based, official, updated, flexible IS methodologies and indicators.

Setting a fixed, more frequent periodicity for IS indicators production and publishing would provide a further guarantee about the accuracy and updating of data.

Governments and international entities should commit to, at least, an annual common review of data and methodologies, and establish the mechanisms to ensure appropriate debate and agility whenever more frequent analysis is needed. Accuracy of data must be enforced. Control mechanisms and selection of neutral, official sources are to be required both from national and international sides.

If all countries are to find value in indicators so as to develop further IS strategies, the correct assessment of more mature, developed markets should not be hampered by the fact that some indicators may not make sense -yet- in emerging ones.

If this new benchmarking framework is to be effective, a consensus effort must be made for increasing comparability and reliability of sources, data and methodologies not only within the EU but also together with entities such as OECD and ITU. An international agreement and commitment on this subject, gathering all stakeholders involved, must be encouraged and promoted.

5.4   International Dimension of the EU (i.e. Internet Governance)

The EU must ensure that ICT policies have a stronger international outlook. EU ICT policies can lead by example to other countries in sectors like international development cooperation.

The EU considers that it is essential to safeguard the following fundamental public policy objectives in establishing the way forward:

- The continued security and stability of the Internet.
- The respect for the architectural principles of the Internet, including the global interoperability, openness and the end-to-end principles.
- The need to promote effective competition in the global domain names market.
- The need to guarantee the principle of freedom of expression.
- The increased internationalisation of Internet governance as a whole, and of ICANN's coordination and management of the domain name system in particular.

Today the Internet is managed and developed by a wide range of actors scattered around the world. Crucial preconditions are global engagement, discussions and exchanges of views as well as transparent and accountable Internet management with the full involvement of and cooperation with all stakeholders, public and private players as well as the civil society.

The EU believes that the Internet Governance Forum (IGF) model has succeeded in identifying the challenges and identifying possible solutions in a way that ensures the Internet continues to evolve in a truly open and inclusive way. The European Union is an enthusiastic supporter of this non-binding multi-stakeholder platform and values this unique place for exchanges between all Internet governance stakeholders.

The EU should reinforce its efforts in being a principal actor in shaping the debates and functioning of the IGF, continuing, inter alia, in its leadership role regarding the establishment of national IGFs and the emergence of a pan-European IGF.

As regards ICANN (Internet Corporation for Assigned Names and Numbers), the EU believes that the current distributed private sector -led, bottom-up multi-stakeholder model for the technical coordination and day-to-day management of

key Internet functions has proved effective and should be maintained, supported and where necessary further developed. Furthermore, the EU believes that the "Affirmation of Commitments" (AOC) signed between ICANN and the US Government on 1 October 2009 is a major step forward in the process of internationalisation and in formally recognising ICANN's global public interest role.

The document reaffirms ICANN's global public interest mission and highlights the increased role for governments and the GAC (Government Advisory Committee of ICANN), which should allow public policy issues to be addressed within ICANN even more effectively.

The EU will continue to argue and work for accountability and transparency as fundamental principles for any governance structure and it notes with satisfaction that ICANN has committed itself to make progress in this domain.

A major challenge in the coming years is to implement the provisions of the AoC and furthermore to ensure that the overall framework of Internet Governance will continue to evolve in line with the WSIS principles of a transparent, multilateral and democratic Internet Governance framework, and, in particular, allowing for a proper involvement of Governments in the development of globally applicable public policy principles.

The EU should continue its commitment in this regard and continue to work towards a stable and fully internationalised management of Internet's critical resources.