# CONTRIBUTION FOR A DIGITAL EUROPE

In 2000, at the Lisbon Summit, Europe set the objective of becoming the most competitive and most dynamic knowledge-based economy in 2010 thus building sustained economic growth, characterized by full employment and a modern social welfare system.

Information and communication technologies are vectors driving innovation and exerting a strong effect fuelling the dissemination throughout every other sector and thus may be powerful levers to reach the objective, by powering productivity gains (in businesses as in administrations) and by generating new services and new activities.

Furthermore, aside from the economic scope, promoting the information society encompasses far-reaching cultural, democratic (with the development of digital public services and new opportunities for online consultations), social cohesion and security challenges.

Today, despite the spectacular ICT performance and use advances over the past decade, their contribution to economic growth and to the improvement of the quality of life still has substantial growth potential. Thanks to ongoing technical progress, new uses will continue to grow, as will new businesses when the convergence between media and telecommunications will become an actual fact. These are new markets with strong growth and employment potential for industrialists in electronics, software, telecommunications, contents and services

Following the example of Korea, the United States, Japan but also China, today Europe must roll out initiatives to improve its position in the international competition for production, dissemination and uses of information and communication technologies.

That is the purpose of this memorandum that spells out a series of operational proposals that should serve to consolidate the Union in its role as a great digital power.

## A - MATERIALLY ENABLING EVERYONE TO ACCESS THE INFORMATION SOCIETY

### 1 – BRIDGING THE DIGITAL DIVIDE

a. Fostering the high-speed coverage of rural areas via the most appropriate technologies

As the Commission pointed out in its recent communication on the geographical digital divide, a huge gap still remains between urban and rural areas in the European Union Member States. In January 2005, a mere 62% of the population in rural areas (compared to 90% in urban areas) had access to a Digital Subscriber Line (DSL) in the EU-15. Furthermore, in rural areas a mere 8% of households had high-speed subscriptions compared to an average rate of 18% in urban areas.

Europe's goal should be to reach the most extensive connectivity possible, by harnessing all the available fixed (optic, copper, coaxial, or PLC) or radio wave-based (satellite, WiFi, WiMax and Mesh) platforms for this purpose and at optimum cost. First, this will have the effect of stimulating competition between operators by implementing the European regulatory framework. Also, public action backed by structural funds may be required for the development of high-speed networks, specifically in landlocked rural areas or in rural areas experiencing difficulties.

**Proposal 1: Re-examine the universal service perimeter in light of technological changes, to ensure that everyone throughout the territory has high-speed connectivity and roaming connectivity.**

b. Ensure that everyone has access to information and communication technology related skills

Proficiency in Information and Communication Technologies (ICT) is now essential for living and working in Twentieth First Century society. We must now take on "computer illiteracy".

To ensure equal opportunities, a special effort must be rolled out in Europe so that all society is proficient in the new tools for information production, transformation and circulation. Educational systems obviously have to provide every future European citizen, from childhood to their first job, with an education that will make them proficient in the tools, develop their critical mind when looking at information processing results and enable them to identify the legal and social constraints governing uses.

In France, the rollout of the *Brevet Informatique et Internet* (Associate Degree in Computer Science and the Internet) and the Computer Science and the Internet Certificate are validations and milestones of the gradual training programme providing greater proficiency in information technology skills, from nursery school to the university.

Furthermore, as every other western society, the European Union is seeing the life expectancy of its population lengthen year after year. Senior citizens' access to the new opportunities provided by ICT is, therefore, a major economic, social or even societal challenge. Consequently, a training action in ICT for this population group has to be undertaken.

In this area, France has rolled out an action called *Internet accompagné* (the Internet step by step) whose purpose is to provide absolute Internet beginners with a certified sales package that combines the supply of a product suitable to their needs and customised support in the home. This type of solution has turned out to be particularly appealing to senior citizens.

France is happy to see the EU initiative to include training and awareness building on ICT stakes in the Recommendation on Key Competences for Lifelong Learning. Likewise the initiative creating a European Computer Driving Licence (ECDL) should be encouraged and more broadly implemented.

**Proposal 2: Foster the exchange of good practices in youth and senior citizen ICT training between the Member States**

**2 – INCREASING SECURITY AND TRUST**

The Internet is unfortunately conducive to the proliferation of numerous threats to people connecting and using it. Cybercrime affects businesses and individuals alike and harmful contents for minors circulate widely on the Web. **The benefits of Internet development and digital growth in Europe will only be safeguarded provided the security of information systems is ensured and user trust is fostered**

The European Union has already rolled out numerous actions to develop digital economy security and to foster European citizens' trust in the information society (Safer Internet Plus, Framework Programme for Research and Technological Development [FPRTD], trans-European telecoms

networks, creation of the European agency in charge of network and information security). However, observably the solutions for securing electronic exchanges are not as widespread as they should be. The European industrialists' positioning on this booming market is clearly lagging behind, especially compared to their US counterparts. In addition, fast changes are occurring in information technologies (convergence, mobility, and so on).

Therefore, **ongoing efforts have to be stepped up and new tracks have to be cleared** to ensure security and foster trust in the information society. The measures will have to take account of the different sensitivities in the European Union countries regarding the right to privacy and the requisites in terms of sovereignty and independence in the matter of security.

a. Digital Identity

The lack of any common digital identification mechanism may hamper business trade or the circulation of labour between Member States. Furthermore, rising attacks (phishing, etc.) are a threat to the development of the digital economy.

A European system should enable the mutual recognition of the authentication methods rolled out by the Member States. France endorses this approach currently deployed by the working party on eID Management through the design of a road map and a pilot, among others.

**Proposal 3: Enforce through regulations the fact that all communication software (messaging, navigators, and so on) marketed in Europe has root certificates from the European Certification Authorities**

This would foster the development of an autonomous European free trade economy of certificates and electronic signatures.

b. Access Providers and Service Providers' Accountability

The policy of attributing Charter-defined labels may contribute to building a climate of trust in the Internet by providing several guarantees to service users. They must be combined with regulatory methods that associate the public authorities more or less closely with the process depending on the nature of the stakes involved. Developing such policies in every European country and in industries such as online banking or e-commerce is warranted.

In some situations, the public authorities may justifiably expect voluntary commitments by all the professionals; otherwise regulatory obligations will have to take the place of co-regulation.
This is the case with the protection of minors. On this issue, the French government has deployed an innovative approach that illustrates this line of conduct viz., it has signed agreement protocols, which include the commitment to supply parental control software free of charge, with all the Internet access providers and mobile operators. This approach could be broadened to include every Internet access service provider in Europe.

**Proposal 4: For the protection of minors, prompt the voluntary commitment of Internet access providers to supply efficient parental control software at no extra charge**

**Proposal 5: Make providers (online retailers and banks, access providers) accountable by co-regulation policies associating the public authorities.**

c. Ensure the quality and reliability of security-related equipment

Today the certification of security products, software or components, is the responsibility of the States and agreements ensure the mutual recognition of certification between some States.
This situation is a source of problems and is harmful to the set-up of an authentic mass market for the products. European certification based on international standards and norms and on known good practices would provide competitive and transparent access throughout the entire European Union regardless of solution origin.

**Proposal 6: Prepare the implementation of a European security certification system.**

d. Regulatory Framework

Feedback on the rollout of current directives (weak development of electronic signatures for instance) and the emergence and development of new technologies make it necessary to modernise (especially for electronic signatures) and complete (in terms of biometrics and RFID) the European legal framework.
Today excessive requirements and overly complex technical arrangements discourage both supply and demand and national heterogeneities maintain a too great fragmentation of the market. Work on simplifying and harmonising is needed.

**Proposal 7: Adopt legal standards for biometrics and RFID**

When drafting the directives, modernisation should be done by complying with a few major guidelines that will ensure their efficiency.

- **Harmonise obligations at the proper level**
- **Assign responsibility to the stakeholders proportionate with their means of action and competences**

## B- CREATING OPTIMUM CONDITIONS FOR THE DEVELOPMENT OF TOMORROW'S INFRASTRUCTURES AND SERVICES IN EUROPE

### 1 – PREPARING TOMORROW'S INFRASTRUCTURES

The European Union must not merely attempt to catch up or imitate but develop a future-proof outlook of the information society. For this purpose, the EU must promote the design and deployment of tomorrow's infrastructures with a focus on very high-speed connections, the post-3G cell phone generation and tomorrow's Internet.

a. Very High-Speed Access

**In European Union countries, the dissemination of high-speed access picked up sharply reaching 53 million lines, e.g., a rise of nearly 20 million lines in 2005, thanks to substantial advances in the use of telephone and cable networks**. In France, slightly more than two million subscribers use broadband voice services, i.e., four times more than a year ago, and five hundred thousand have ADSL based television. Prices have also dropped while throughput rates have risen. In a few years, high-speed access went from being a luxury product to a mass consumer item for households and a staple service for businesses. Meanwhile high-speed uses are changing and so-

called triple play sales offers including Internet access, telephone and television, or even quadruple play, also including a mobile telephony offer, have become or will soon become standard.

**Nevertheless, it is high time that the public authorities prepare the next stage, e.g., the development of very high-speed connections, meaning the deployment of new infrastructures.** The increase of throughput needs will continue to rise in the upcoming years, viz., the needs of businesses for new applications and the needs of individuals especially with the development of high-definition television. Several countries have already met the challenge of very high-speed access over power lines (BPL). Korea where most of the population is concentrated in large urban areas has opted for VDSL; in Japan, spurred by the public authorities the incumbent operator has announced a far-reaching optic fibre connection plan and the number of new FTTH (Fibre-to-the-Home) customers has exceeded the number of ADSL subscribers since last June. In the United States, major telecoms operators have announced large-scale optic fibre deployment projects.

**Proposal 8: Ensure (especially when it comes up for review this year) that the European legal framework for electronic communications fosters investments in networks providing a very high-speed access service.**

- Promote risk-taking for installing the infrastructures requiring huge financial efforts and allow for appropriate remuneration in any case
- If a market failure should occur, as for instance the rebuilding of a monopoly, regulate the new infrastructures while ensuring that the investing stakeholders are remunerated according to the risk they take
- Foster the use of extant infrastructures through legislation or through regulation so that operators must provide access to their cable ducts

**Proposal 9: Lower entry barriers to reach a high-level of competition for very high-speed access, throughout the European Union**

The expense of civil engineering (works to dig up the pavement, laying cable ducts, and so on) weigh heavily (70% of the cost in France) on the development of new fibre networks. Several actions are feasible to lower deployment costs, i.e.,

- Encourage the use of structural funds to support local authorities who install neutral electronic communication infrastructures open to all
- Integrate the funding of very high-speed access infrastructures in the part of the structural funds allocated to reaching Lisbon strategy objectives
- Facilitate civil engineering pooling and the coordination of civil engineering works through the action of the local authorities and the encouragement of operators' co-investment
- Ensure that every electronic communication operator has competitive open access to residential housing specifically by facilitating the access to cable troughs in older buildings and by changing national standards and regulations so that new housing projects can be wired with technologically neutral and upgradeable solutions

b. <u>Post-3G Mobile Telephony</u>

**Mobile multimedia services are becoming increasingly successful.** UMTS operators are already putting 3.5-G solutions (with High-Speed Downlink Package Access, HSDPA) on the market. So, although SMS still generate nearly three-quarters of the revenue from mobile data in Europe-15, their weight is being nibbled away by mobile customisation services (ring tones and so on),

infotainment services (information and entertainment including mobile TV) and other interpersonal communication services (MMS, instantaneous messaging, email, and so on). **However, current mobile telephone technology is limited.** That is why Asian OEM and operators are already preparing tomorrow's networks. For instance, Japan and China have recently signed an agreement protocol defining a common standard for fourth generation mobile telephony. They are aiming for standardisation no later than 2007. 3GPP, a partnership project for the third generation that brings together different telecommunications standardisation organisations including ETSI could be the relevant place for carrying out this work.

**Proposal 10: Start working on a very high-speed mobile standard by relying on European standardisation bodies and specifically ETSI, CEPT and 3GPP and implement a decision to ensure networks based on the said standard exist throughout Europe.**

Similar to what occurred for GSM and UMTS, the benefits of a successful single European standard would be twofold, one, the possibility for our citizens to access innovative Pan-European services with interoperable terminals in every Member State; two, the creation of an appealing mass consumer market that will give new global impetus to industrialists thanks to economies of scale critical to exporting products outside Europe.

Aside from research work, work should start now on spectrum harmonisation by rolling out a Europe-wide concerted resolute policy to free and then harmonise the spectrum. **The issue is partly linked to how the digital dividend is addressed.**

c. Tomorrow's Internet

Strategic stakes are also involved in devising a European outlook on the Internet's future, which should be shared worldwide. Within a dozen years, the Internet has become a vital infrastructure whose quality and stability are widely recognised. Changes due to Internet architecture and the introduction of new thing- and individual-related technologies will entail far-reaching economic and social changes that will also have to be backed. Actually, the Internet now mainly connects computers but it will soon connect mobile phones, automobiles or even electronic appliances, too. Eventually, all the things in our daily life will be connected to the network. The terms "Internet of Things" or "ubiquitous networks" are often used to designate these changes.

Therefore, **the gradual changeover from IPv4 to IPv6 for Internet addressing should be promoted.** According to several concurrent studies, needs and specifically EU addressing needs, will probably not be met past the decade's close, yet the switchover to the IPv6 addressing system has not – or hardly not – gotten off the ground in Europe whereas the US, Chinese, Japanese and Korean governments (among others) are deploying a proactive policy. The challenges are primarily industrial due to the boom of new mobile-based and Machine-to-Machine (M2M) services, for instance, that sharply increase addressing demands. The challenges are also technological since the changes raise the issue of network stability.

New Radio Frequency Identification (RFID) technologies called "smart tags" hold promise for the future. RFID technology miniaturisation clears the way for new outlooks with the revolution of communicating things. The technological evolution also has implications for IP network architecture as all the identifiers are connected to computer systems, which in turn will have to be connected to the Internet. Most of the projects are currently being developed in Japan, Korea and the United States. Considering the stakes involved, bridging Europe's gap in this industry has become critical. This can be done, among others, by the take-up of joint actions in research and

standardisation at the European level.

Devising a shared outlook on Internet world governance is a strategic stake for the future of the Information Society. Actually the Internet is a scarce resource and a global public commodity. However today 10 out of the 13 DNS root servers are located in the United States and US registration offices are in charge of 75% of domain names.

At the World Summit on the Information Society in Tunis, the European Union defined the guidelines and actions that will foster multilateral, transparent and democratic governance.

**Proposal 11: From now until 2010, the European public authorities should set a common deadline for the migration of telecommunication backbones of the administration networks from IPv4 to IPv6.**

**Proposal 12: Prepare European industry to meet the challenge of the Internet of Things especially by providing support to research and designing open interoperable standards for RFID.**

**Proposal 13: Promote the effective globalisation of Internet core resource management.**

The European Union should:

- Reaffirm its attachment to the **three Internet architectural principles** i.e., **interoperability, openness and technological neutrality (enable access to every legal content)**
- Give priority to the mechanisms enabling the **effective globalisation of core resource management of the Internet (IP addresses, domain names, location of DNS root servers)**
- **Work on clarifying the responsibilities of the different parties involved,** with a focus on the equal responsibilities of all governments in the democratic definition of general interest rules.

## 2 – FACILITATING THE CHANGES OF TOMORROW'S TELEVISION SERVICES

From now on, television will be developed with innovative formats (high-definition, mobile and interactive television) and provide enhanced services. The boom of the new services brings with it growth opportunities for numerous technological as well as cultural industries of the European economy.

For promoting the development of the new television formats across the European Union and ensuring that they benefit the majority, three initiatives could be rolled out or backed by the EU. They are to promote and support new television formats, prepare and support the extinction of terrestrial analogue broadcasting, and address the issue of using the digital dividend, in a coordinated manner.

a. Promoting and backing new television formats

The digitisation of terrestrial analogue broadcast television, which has been underway since 2005 and passed the 2.5 million mark of subscribers in France, is the first stage. The development of **high-definition television and personal mobile television should be rolled out post haste**. By meeting the aspiration for roaming features and for the customisation of new consumer patterns, mobile-based television is a potential development source for innovative contents.

**The European Union should adopt a common mobile television standard to foster the emergence of a mass consumer market and the related economies of scale.** Personal mobile television could become a huge European success similar to the success of GSM.

Opting for the DVB-H standard developed by ETSI for the fast development of customised mobile television services throughout the European Union territory would also clear the way for the deployment of innovative audiovisual mobility services, including digital radio services.

**Proposal 14: From now until 2010, organise throughout the European Union the deployment in every Member State of at least one ETSI DVB-H standard-based mobile television system.**

Aside from matters of infrastructures and technical equipment, the new services will only be fully successful if they are able to offer appealing contents. **Therefore, a share of the resources of the European MEDIA programme should be used for actions to encourage and back contents in the new formats.**

b. Preparing and backing the extinction of terrestrial analogue broadcasting

The extinction of analogue broadcasting supposes upstream communication with consumers to prompt every household to opt for digital television. It also supposes organising the switchover of those households that will not have done so by this date. Similarly, the issue will have to be tackled by the twenty-five European Union Member States that agreed to cease analogue broadcasting before 2012 at the December 2005 Telecommunications Council.

**Proposal 15: Organise throughout the European Union, the simultaneous extinction of analogue TV broadcasting in a majority of Member States before 2012.**

Certain actions could be rolled out to meet this goal, i.e.,

- **Starting in 2009, plan for the widespread sale of equipment with built-in digital tuners, similar to what was done in the United States.**

The measure would prevent the marketing of equipment soon to be obsolete with the impending cessation of analogue broadcasting. It would also help protect consumers and speed up households acquiring digital television reception equipment. If needed, exemptions could be allowed for bottom-of-the-line products.

- Foster the set-up of **national funds to back the extinction of analogue broadcasting.**

The funds would serve to buttress national initiatives to prepare the extinction of analogue broadcasting and specifically guarantee that certain households would be able to acquire the equipment.

For instance, France has decided to set up a Digital Support Fund with a 15 million-euro budget in 2006. It is dedicated to helping the lowest income groups through the transition toward digital television.

c. The start-up of discussions between EU-25 on the use of the digital dividend

The radio electric spectrum is a limited resource subject to growing demand. The extinction of analogue broadcasting will free up the frequencies that have traditionally been attributed to this channel, thus building up the "digital dividend". This step will clear the way for developing new broadcasting services but also electronic communication services. Several European countries as well as Japan, China, and the United States have already planned to develop such services over these frequency bands.

The new services will have economic windfalls in numerous industries viz., microelectronics, consumer electronics, telecoms industry and services, and cultural industries, which are growth drivers and job creators.

Acquiring the most harmonised digital dividend possible and attributing it to new services in a coordinated manner is an issue of prime importance.

**Proposal 16: Optimise spectrum use specifically by freeing a contiguous, harmonised frequency band across Europe.**

EU organised discussions should address every technical, economic, social, political and cultural aspect of the new uses of the frequencies freed by the extinction of analogue broadcasting. The discussions could specifically assess the opportunity of freeing up a contiguous harmonised frequency band across Europe solely for new uses and thus promote the emergence of a consumer market and the related economies of scale.

In France, a Strategic Digital Committee has been set up under the Presidency of the Prime Minister. Its purpose is to propose a national strategy for the extinction of analogue broadcasting that includes optimised digital dividend management, to the public authorities.

## 3 – ENCOURAGING THE DEVELOPMENT OF INNOVATIVE SERVICES

a. Fostering the development of satellite positioning technologies

Satellite positioning infrastructures foster the development of numerous global positioning services, such as precision farming, fleet tracking, polluted area location, and tourist site mapping (accommodations, restaurants, and cultural landmarks). The precision and reliability performance of the European Galileo system will provide an opportunity to develop innovative applications that will be wellsprings for the creation of new industrial and business services.

Global positioning data must also be available. France has put a service called geoportail.fr online. It provides everyone with access to digitised public data on geographic information. Initiatives of this kind, which may be rolled out by Member States, should be monitored to ensure their interoperability.

**Proposal 17: Define a European road map and coordinate the design of road maps in each Member state for the development of Galileo applications; organise the exchange of good practices within Europe.**
Goods tracking (with a focus on hazardous items) or the use of satellite guidance for air navigation could be included in the road maps.

b. Promoting the development of m-business

Now virtually every European has a personal electronic chip-identified cell phone. The development of mobile-based transactions (**m-business** and **m-payment**) has strong potential that goes beyond the sale of ring-tones, logos and games (i.e., goods and services closely linked to handset customisation), which now generates most of m-business.

The spread of telephones with colour screens and fast throughput already available on 3G devices will broaden the scope of m-business. Navigation quality and ergonomics are improving. The first cell phones with ergonomic keypads similar to computer keypads and offering quality screen size and resolution are just beginning to appear on the market. M-business will soon also handle ticket sales, travel, and cultural products such as downloading music and videos.

Mobile phones also have a high development potential for use as replacements of standard payment means (such as fiat money, credit cards, micro payment cards, and so on).

Japan is a telling example of this. In Tokyo, telephones with contactless chip cards provide no-wait access through transit station turnstiles or enable different purchases in more than 15,000 stores. In late 2005, 3.7 million Japanese terminals were equipped with “contactless” chips meaning they could be used as an e-purse. Payment is initiated by merely swiping the mobile phone over the payment terminal. Since 2005 testing of similar systems has been underway in Europe and in France.

Compared to Asia, the European m-business market exhibits a very strong growth potential. Its development should move toward expanding the scope of available services. For instance, the following areas could be included,

- Mobile-based payment broadened to include other products, including physical objects such as drinks in vending machines or parking spaces
- The development of customised services and applications depending on location (retailing, service, transit fare (etc.) customised sales offers)
- Downloading music and videos

For this to happen, several hurdles involving the design of easy-to-use systems for consumers and the fact that the practice is liable to several sources of law must be lifted.

**Proposal 18: Clarify and adapt the ‘E-Money’ and ‘Payment Services’ Directives for m-business.**

Among other things, it would be advisable to,

- Remove the uncertainties concerning the **scope of the effective directives** and their **articulation**

- Adopt **a flexible and well-balanced system of obligations according to actual price** (obligation to inform customers, obligation to produce proof, prudential banking obligations, and so on). Actually, payments for small amounts do not require the same level of information or security (among others, the risks of money laundering or terrorist funding are limited). In any case, the **objective is an easy-to-use** system because this is the driver powering the success of m-payment services.

**Proposal 19: Set up an arrangement for consultation to clear the way for defining an m-payment development strategy shared by all the stakeholders and specifically operators, banks and industrialists.**

The strategy could rely on the two following guidelines,

- **Back the emergence of the** technological offer combined with the development of mobile payments (software, system management and security) through the support to collaborative industrial projects

- **Encourage cooperation efforts and the development of standards, with a focus on contactless payments to promote the harmonisation and interoperability of the different payment systems in Europe.**

## C- ENCOURAGE EUROPEAN CULTURAL DIVERSITY BY PROMOTING NEW DIGITAL CONTENTS

Backing the production and dissemination of quality European digital contents in several languages will strengthen the European content industry and a majority of users' take-up of communication tools. This is the meaning of EU initiatives (through the eContent Plus programmes and later the innovation and competitiveness framework programme [ICFP] and 7th FPRTD).

The priority smoothly fits in with EU international initiatives promoting cultural diversity and specifically the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, passed at UNESCO in October 2005.

### a. Promoting cultural diversity

The amendment of the 'Television Without Borders' Directive adapting the legal framework of audiovisual services to the new digital environment should be an opportunity to include the goal of promoting cultural diversity in a bedrock of common rules, including rules for so-called "non linear" services, and to define the methods for their appropriate implementation.

**Proposal 20: Include the transversal objective of promoting cultural diversity in all audiovisual media services, in the 'Television Without Borders' Directive.**

b. Digital Library

France would like to see the European Digital Library come into existence in 2006 and be based on the following,

- For the fast launch of the European Digital Library project, **digitization could at first focus on the written word** and mainly on printed works. It could **later be broadened to include other media**, sound and images, and become an authentic one-stop portal to the digital heritage.
- The **development of an economic model compliant with intellectual property rights** targets full access to copyright-free contents to all at no charge and new reading methods of protected contents. The object is to associate private stakeholders with the project and build together a balanced economic model for the distribution of editorial contents on the Internet, in strict compliance with author and publisher copyright, ensuring fair remuneration to copyright beneficiaries.
- The creation of a **common** website for **accessing the European digital heritage** would offer users a united and coherent outlook. This could rely on the infrastructure of the European Library (TEL) for fast project launch.
- The goal of large-scale digitisation needs substantial resources and may be advantageously addressed by bringing together public and private, European and national contributions.

**Proposal 21: Set up the European Digital Library according to methods compliant with intellectual property rights and based on an appropriate economic model.**

c. The Internet Legal Deposit

For the purpose of safeguarding the new heritage, numerous European countries have decided to enlarge the perimeter of legal deposit within their countries, adjusting their choices according to their national situation and available resources. Several European national libraries would like to join the collaborative framework of the International Internet Preservation Consortium (IIPC) and develop common practices to ensure a harmonised and rational collection.

**Proposal 22: Adopt a joint approach to the Internet Legal Deposit**

The development of European cooperation for World Wide Web archives could be materially organised around two actions, i.e.,

- **Encourage** system **interoperability,** specifically by having Member States adopt a joint Web archive format (ARC format, ISO standardisation pending) and by **harmonising legal frameworks** to authorise and facilitate the federated search of other Member States' archives and the simultaneous consultation of the resources at the depositary organisations of the Member States
- Broaden IIPC to all European countries that are not yet members by specifically partnering them with the collaborative development of **more efficient collection and access tools**.

d. Online Movies

**Proposal 23: Strengthen the presence of European films on the Web**

Considering the power of the US movie industry, the risk is high that, at the outset, US films

overrun the new distribution media. **The digitisation of the wide range of European films (catalogue films and recent films) should be promoted, with support from the MEDIA programme**.

e. Combating piracy

Among other things, the Internet and new networks bring with them the development of new ways of making cinematographic and musical works available, ranging from the supply of an occasional demand to subscription offers. Digital technologies are promising for cultural industries as they facilitate the access to their productions and improve the dissemination of European works throughout Europe. By lowering dissemination costs, they can promote cultural diversity. Yet, this also involves combating digital piracy.

**Proposal 24: Coordinate the fight against piracy, at the European level**

**Proposal 25: At the European level, define a legal framework for the interoperability of technical protection measures and promote their standardisation.**

The two guidelines warrant concerted European action viz.,

- **Fight illegal downloading –** A coordinated European response to this threat could simultaneously rely on the three actions, i.e., educating and building the awareness of the public about copyright (information campaigns), rolling out legal offers for a fee, strengthening cooperation of national anti-piracy enforcement agencies (in France, *Agence de Lutte contre la Piraterie Audiovisuelle*, ALPA).
- **Develop the interoperability of technical protection measures –** A legislative and regulatory framework promoting licensing agreements should be rolled out. Research with a view to creating standards that would provide the technical protection measures with common interfaces should also be promoted. Appropriately, the coordination of the positions developed by European industrialists in the different forums addressing these issues should be monitored.

f. Online Classes

University teachers increasingly produce digital course material but it is not automatically put on line by educational institutions. Implementing concerted and coordinated actions so that every EU student can draw on the resources is a strategically critical task at a time when every university in the United States automatically offers this service. In this matter, reflections could be judiciously initiated at the European level to define licence models adapted to the legal frameworks of the Member States and conducive to author and creator copyright management for online cooperative work. The initiative could draw on the “creative commons” arrangement in the United States.

**Proposal 26: Develop a European Internet portal facilitating the cooperative creation of educational contents within a EU legal framework to be defined.**

The European portal would be a means of creating communities around common research and teaching themes and of creating a fund that would be enhanced and updated through everyone’s cooperation.

g. Virtual Museum of the History of Europe

**Proposal 27: Develop the project for the virtual museum of the history of Europe**

The purpose would be to design an interactive public website offering a wide commented selection of works from the collections of European museums to depict a history of Europe through its art. The challenge is to achieve a reference European editorial website in the world of history and art history that would contribute to education, art education and responsible citizenship.

g. Videogames

Videogames have now become an essential cultural vector through the world size of its market and its importance with young people as well as young adults (average age of a European player is now 30). In this situation, publicising the vitality of European creation, further strengthening it and broadening its dissemination are equally important.

**Proposal 28: Set up a durable framework to support the creation of videogames**

- **Encourage the creation of videogames drawing on European culture.** European instruments such as the MEDIA programme should increase support to European publishers and developers for project engineering. As an extension of its i2i audiovisual initiative prompted by the European Commission, the EIB could be encouraged to take action in this sector either by providing bank loans or venture capital via EIF.
- **Promote the vitality of European creation -** Encourage and finance the creation of far-reaching business and artistic events that enhance European creativity, talents and know-how worldwide. For instance, there is currently no European equivalent of the yearly US E3 show.
- **Facilitate research laboratories working jointly with developers on software –** Apparently, joint work on software between game developers and research laboratories are wanting, as their deadline constraints are very different. The European Union could identify all the research areas that could supply the videogame industry (image syntheses, algorithms, networks as well as ergonomics, uses, and so on) and suggest collaborative methods that integrate the special features of this industry.
- **Protect young people and children and improve consumer information -** Europe could pursue the work to coordinate recommendations for the young public and encourage their extension to online or networked games, for instance.

## D- DEVELOP EUROPEAN UNION AND MEMBER STATES' RESEARCH EFFORTS, ENHANCE AND PROTECT THEIR RESULTS

Innovation is a key to a thriving digital economy growth. However, research efforts in information and communication technologies and science (ICTS) has been wanting in Europe compared to Japan or the United States, among others. A recent GFII study on ICTS R & D in the main industrialised countries highlights that the effort in Europe, compared to the GDP, is two times lower than it is in the United States and three times lower that in Japan. The deficit applies to public research subsidies as well as private research efforts. First, the consequences of this can be seen in the level of patents filed where the gap is clear-cut. Each of the above-mentioned critical technologies backing the applications suggested in this memorandum can only attain their top level if there is strong research involvement specifically under partnerships between public laboratories and businesses.

The Seventh FPRTD recognises the importance of information and communication technologies in the European Union's research strategy. The European Union has increased its effort by 30% compared to the Sixth FPRTD by allocating 28% of cooperation, i.e., €9,120 million, to this priority over a 7-year period. This is a meaningful stage in the process to catch up with the most advanced countries in ICT research.

The implementation of the FPRTD will specifically have to take account of the following topics, areas where Europe may claim a leading world position. The topics are linked to technologies whose control is critical for European competitiveness.

- **Built-in systems**: They encompass communicating systems, ambient intelligence, and embedded systems that put intelligence in things so they can communicate together and with users. This includes research on optimising performance within a smaller volume. For roaming devices, it comprises the management of complex software whose operational safety must be ensured, the development of innovative architectures as well as lower energy burn-up.
- **Information and knowledge networks**: They include widespread applications throughout the Web, access to computing grids as well as the management of huge volumes of large amounts of data throughout the Web, the engineering of navigation tools through the data (search engines, visualisation, and so on) including economic intelligence applications (alerts, strategic intelligence watch, decision making aids, etc.) and searches on very high-speed networks.
- **Person/System Interaction**: As systems are becoming ever more intelligent and terminals ever smaller, more natural interfaces are needed for communicating with them. Advisably, multimodal person/system interfaces have to be developed including voice communication, computer vision software, reasoning and initiative-taking capabilities, system customisation and recognition of remote contacts, and mediation of communication between humans.
- **Mobility**: The growth of wireless networks should mean having access to information any time, anywhere. IT equipment enabling ubiquitous computing and roaming network use requires research so that is can handle multimedia information combining voice, sound, music, still or animated images while ensuring equipment and network interoperability, as geographical positioning systems can adapt the information to user's actual location.
- **Self-powered, interactive and cognitive robotics**: Self-powered robotic systems are emerging in household and consumer applications. They require the engineering of new architectures and advanced controls, and must have the capability of communicating together and with humans. Appropriately, they should be endowed with the capability of apprehending their actual situation, of moving in open environments, and of taking decisions and initiatives. Both civil and defence applications are varied. They specifically concern companion robots for the dependent, elderly or disabled.
- **Simulation, modelling, design**: digital processing now means that mock-ups are no longer required for creating a new product (planes or cars, for instance) or service. It would be advisable to model things, physical phenomena, or even human users, simulate and visualise them and enable the interaction with their simulation for the overall design of complex systems. This also requires the development of image synthesis algorithms and immersive environments interacting with users who could either be physically present or at a remote location as well as the engineering of digital simulation methods and computing capabilities with enough power and latency.
- **Security**: Advisably, extant efforts should be continued specifically in the area of technologies for encryption, the security of communicating wireless and contactless things, digital identity and strong authentication. **The special character of European sensitivity on the issue of the right to privacy should be considered and become a strength for our industry** that will have the opportunity of standing out from the competition by the ethical nature of the solutions

it engineers. Research programmes will have to take account of the suggested requirements for the European identification system as part of the work on the digital administration.

The research should be conducted while ensuring that the **ties** between the national programmes of the Member States and EU effort are **strengthened** through ERANET coordination networks, and specifically Cistrana set up under the Sixth FPRD.

The coordination of the research policies, which are essentially designed and implemented with a view to economic competitiveness, should be able to draw on the creation of industry-based joint technological initiatives such as Artemis, in the short-term.

The results of the research policies and technological initiatives will have to be enhanced and protected, specifically by helping SMEs reap the full benefit of their inventions, by filing patents.

**Proposal 29: Give priority to the areas fuelling digital economy related applications in the European work programmes of the Seventh FPRTD and improve the coordination of national and EU research policies.**

In addition to the research on general topics, special attention should be paid to **research on multilingualism**.

As underscored in the recent Commission communication entitled "A New Framework Strategy for Multilingualism", the definition of a **strategy for addressing multilingualism** is a keystone of European construction to preserve the different cultures of the Member States by enabling citizens to express themselves in their own language but also by enabling them to communicate together more easily. Considering the linguistic diversity involved, especially in the EU institutions, EU-25 has 20 official languages, i.e., 380 pairs of languages to translate, **language technologies** will have to be increasingly relied on to help Europe meet this challenge.

Against the background of today's trade globalisation, **the technologies could also serve for other applications** such as the development of economic intelligence tools, access to cultural contents (European Digital Library) and more broadly access to world information for all whatever language encodes the data. Therefore, the command of the technologies at the European level is an opportunity for European industry to gain a strong position with regard to the current worldwide demand.

**Proposal 30: Coordinate research, development and testing of the technologies addressing multilingualism in Europe**

The following proposals are made to help use the different European languages.

- Support the development of **technologies** that can process European languages individually (information search on the Web, automatic summary, voice recognition and synthesis, and so on) or that can **translate** from the written or spoken language
- **Identify and coordinate** extant national (mainly dealing with national languages) and EU programmes using FPRTD instruments
- Produce and disseminate enough quality **resources** (corpus, lexicons, dictionaries, and so on) so that the technologies can be developed in each European language, establish data exchange **standards** and a technology **assessment** system

- Promote the use of technologies validated by the services of European and national institutions and include them in the engineering of innovative applications for different industries viz., mobile telephony, search engines, digital libraries, economic intelligence, education, e-business, and so on.

A governance structure including private and public stakeholders should be set up to coordinate the different actions.