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The Information Society and Development: the Role of the European Union

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INTRODUCTION

Recent trends towards the information society potentially concern most human activities, including learning, communication, work and leisure. This applies equally to the developing countries, notwithstanding the diversity of their market situations, policies or technological capacities. This Communication presents a number of guidelines and mechanisms to encourage the participation of developing countries in the information society, not only as consumers but also in an active role.

The G7 Conference on the information society held in Brussels in February 1995 expressed concern about the need to avoid further widening the gap separating the industrial countries from the developing countries and called for "a shared vision of human enrichment." [1] "Our action must contribute to the integration of all countries into a global effort. Countries in transition and developing countries must be provided with the chance to fully participate in this process as it will open opportunities for them to leapfrog stages of technology development and to stimulate social and economic development". The Conference on the information society and development organized in Midrand from 13 to 15 May 1996 at President Mandela's invitation, bringing together more than 50 countries and international organizations, focused on the specific needs of the developing countries and highlighted the potential of the new technologies (see supplementary Annex 6). It provided a forum for joint reflection reflection on the common rules required, the areas of cooperation towards building the global information society, and the priorities for development. Egypt has undertaken to organize the follow-up to this Conference.

The EU has embarked upon redefining and modernizing its relationship with each of the main developing regions, providing an opportunity to take account of the information society concept in relations with them. For Community action a reference framework has to be established to secure the necessary coherence, promote possible synergies between the various policies, and strive for coordination with the activities of the Member States and of the international organizations concerned. A regional approach is recommended for this purpose to ensure that the action takes place in the context of existing relations and at the same time in that of the available cooperation instruments. For external partners the message should be realistic and it should draw their attention to what is at stake in the current upheavals and to the efforts they have to make.

A. THE CHALLENGE OF INTEGRATING THE DEVELOPING COUNTRIES IN THE GLOBAL INFORMATION SOCIETY

1 THE CONTRIBUTION OF INFORMATION AND COMMUNICATIONS TECHNOLOGIES (ICT) TO DEVELOPMENT

1.1. As emphasized at the Conferences of Midrand and Rome on the Mediterranean, **the information society (IS)** mobilizes revolutionary and pervasive technologies that profoundly alter the organization of work, education and society at large. It entails a reduction of time and space

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[1] Meeting of the Ministers of the G7 countries and the Member States of the European Union, Brussels, 26 February 1996.

constraints and presents a panoply of new tools with unparalleled capacities enabling the developing countries to make some great leaps forward in technology by economizing on the intermediary stages which the industrialized countries have gone through. The increasing complexity of economic relations and the unprecedented accumulation of knowledge and experience are conducive to increasing global integration. However, countries that shut themselves off from these changes, isolating themselves from international trade networks and investment flows and from networks of scientific and cultural creativity and their spread, would risk being marginalized. In some countries there is the further risk of a two-speed society emerging, with only part of the population having access to new networks, services and equipment and capable of using them with ease and enjoying the advantages they offer.

1.2. In technological terms, the moves towards the information society mobilize a **panoply of new tools** which are spreading throughout the developing countries. There has been an explosive growth in ***cellular mobile telephony***, in particular where they offset the deficiencies of fixed networks. In the field of ***satellite*** communication, geostationary technology is in full development (multispot access or access on demand), and low- and medium-altitude orbit systems will soon be offering global services. These technologies are less capital-intensive and better adapted to remote regions and sparsely populated areas (solar-powered switches, VSAT). The capacity of ***optical cables*** is on the increase and connections are multiplying, e.g. those being established between Chile and the other countries of the Pacific coast of South America, and the FLAG project linking Europe and Asia via the Mediterranean. ***Internet*** and WWW technology provide a platform for integrating other technologies, including ISDN lines and ATM servers. A very wide range of projects is already based on these techniques and virtually all NGOs in the field use them. ***Teleports*** serve as "reception centres" for tele-working, in particular for highly labour-intensive types of services such as statistics, accounting, software production and airline reservation systems (Mauritius, Jamaica, India, the Philippines).

Space technology offers unprecedented possibilities for development aid, in particular in navigation and positioning and also in earth observation. Specifically, earth observation satellites enable the collection of data essential for resource management, land management and monitoring of the environment. CD-ROMs contribute to education and facilitate the storage and dissemination of data. CIM production technologies and material-as-needed methods (Just in Time) lead to significant gains in productivity.

1.3. Through information society applications **new opportunities** present themselves for the developing countries with advantages comparable to those accruing in the industrialized countries, e.g. more efficient management for SMEs and access to economic information, training, interactive user/server networks and international markets, and also enhanced efficiency for governments and administrations.

Technologies for **education and training**, in particular distant education and multimedia, and new modes of learning offered by the information society may be instrumental in meeting these quantitative and structural needs of countries that have to accommodate, train and economically integrate large numbers of workers (in most cases half the population is under the age of 20) in widely dispersed and under-equipped areas of habitation. Through continuing education and training, moreover, there has to be a constant renewal of skills throughout people's lives.

Some countries have to cope with large-scale endemics and epidemics. **Telemedicine** may help to meet these challenges by improving the organization and management of health care. Data bases may be linked through telematic networks to monitor the development of diseases (epidemiology), provide access to medical expertise through teleconsultation and pave the way for remote medical assistance. ICT also play an important role in preparing and implementing health policies.

In **industry and international trade**, ICT play a decisive role in improving competitiveness by raising production quality (more stringent standards, quality control) and its fashion-related aspects (textiles) or by integrating production in a complex process such as in the case of spare car components, or by offering facilities for the transmission of orders and specifications as the first steps towards electronic commerce. In some countries software applications and computerized data input have created a large number of jobs (100 000 software engineers in India) and new markets are emerging for word processing in the press, newsmedia and audiovisual sectors.

In the domain of **research** in agriculture, chemistry, water management, fisheries, the environment, urban planning, etc. the development of networks enables researchers in the developing countries to have the necessary information at their disposal and to set up teams of critical size and thus to integrate in the global scientific community and thus stem the brain drain.

The emergence in many developing countries of a new **independent press** and the explosive growth of the Internet, the freeing of the airwaves and the shift from state to public service broadcasting are creating an increasing demand for up-to-date information, both written and audiovisual. Such pluralist information contributes to strengthening civilian society and consolidating the democratization process in numerous developing countries.

Linguistic diversity, including certain Community languages as well as native languages of the developing countries, constitutes a cultural richness that forms part of man's heritage. Thanks to ICT, it can be conducive to the development of an industry with multicultural and multimedia contents based in particular on electronic publications.

1.4. ICT are not the sole instrument to give an impetus to structural development. They can only be used with optimum efficiency if the societies where they are applied manage to master them properly. Experience in development aid shows that the use of new technologies must be largely adapted according to

national and local contexts, geographic conditions, the economic structure of the country concerned or to its fundamental needs. However, ICT have a great potential which may serve the goals of the development strategies and competitiveness of the developing countries. This potential has certainly not yet been fully exploited. The aim of this communication is to propose an overall strategy in this domain.

2. THE CHALLENCES FACING THE DEVELOPING COUNTRIES

The benefits of the information society for the developing countries depend however on the level of their communication and information infrastructure and the development capacity offered by their economic and regulatory systems.

2.1. The level of **telecommunication infrastructures** in the developing countries is highly diverse but mostly far removed from that in the industrialized countries. Using teledensity[2] as an indicator, the figure for the industrialized countries is over 48, that for middle-income countries around 10 while the least advanced countries are about 1.5 and the world average is 11.5. This quantitative difference is further aggravated by qualitative weaknesses of networks affecting the quality and reliability of communication and by structural disparities between urban and rural areas. Teledensity in rural areas, for instance, does not exceed 0.8 in low-income countries. The infrastructures fail to meet local demand and cannot guarantee access to global communication networks. Moreover, default on payment by public administrations in certain cases, failure to allocate charges for international communications (deductions from the general state budget) and the existence of cost structures that surcharge international communication and subsidize local communication deprive telecommunication operators of the resources for their activities. Thus public management hampers the optimum use of existing facilities. [3]

However, there are enough factors for growth. First of all, there is a significant sustainable demand, witness the long waiting lists and connection periods of up to ten years, the existence of veritable "black markets" in telephone lines in some areas, and high levels of average revenue per line. This explains why in many countries there has been a sustained growth in telecommunications, e.g. more than 17% a year for all countries with an income level below US $700 from 1984 to 1994. The drop in the cost of technologies and competition from new global operators using call-back procedures and the like have led to a decrease in traditional revenue from international communication that is causing concern to the developing countries, raising their awareness of current changes.

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[2] Number of main lines per 100 inhabitants.

[3] African Green Paper - Telecommunication Policies for Africa, Document 2-F, 2 April 1996, Telecommunications Development Office, ITU.

2.2. For the **other information infrastructures**, the PC ratio per 100 inhabitants gives an indication of the informatics gap, ranging from 18 for high-income countries, to 2.3 for medium-income and 0.01 for low-income countries. In terms of the market share in information technology, the United States account for 34.7%, Europe for 29.3%, Japan for 14.6% and the rest of the world only 21,4%. These differences are also reflected in the figures for data transmission, the spread of Internet servers and the number of users. Here, again, there are enough factors for potential growth, including the drop in prices, the development of multimedia applications and access to the Internet. The PC market is dynamic and could follow in the footsteps of television which is now wide-spread in low-income countries, with 46% of homes having a TV set.

2.3. According to the World Bank, the annual investment necessary for the growth of telecommunications in the developing countries over the next five years amounts to US $60 billion. Financing in the form of international public aid would not exceed 2.3 billion and most countries cannot make up the difference. The necessary investment can only come from the private sector. However, to mobilize private investors a legislative and regulatory framework will have to be established that is stable, predictable and transparent, making it possible to take rational economic decisions.

The commitments on market access and national treatment and on the **regulatory principles** adopted by 69 countries, including many developing countries, in the framework of the WTO/GATS negotiations on the opening-up of telecommunication services which were completed on 15 February 1997 provide a general framework that can meet the needs of the developing countries. Provision is made for independence of the regulator, basic competition rules, interconnection of networks, universal service obligations, transparency in the grant of licences, and allocation of frequencies. In order to make more rapid progress on the road to the Information Society, the developing countries ought to examine what would be the best approach to develop their national telecommunication systems in accordance with the GATS principles.

The developing countries will thus be able to meet the commitments made to the WTO on telecommunication services and, in the case of countries that have not made such commitments, to meet these, including those relating to regulatory principles.

2.4. **Human resources** are decisive by coping with change. This includes technical staff in telecommunication and computing and, in particular, those in the software sector, offering prospects for new jobs. This also concerns training for people working in information such as teachers and journalists, those responsible for regulation, management (marketing, financial and commercial services, and quality control) and new professional intermediaries specialized in ICT access and use. Measures should also be taken to ensure life-long learning.

2.5 A dialogue on the aspects of the information society connected with development is carried on within certain international organizations, e.g. the ITU, UNESCO, UNCTAD, UNDP, with the SDNP programme, the World Bank, with its InfoDev initiative, and the OECD.

B. COMMUNITY ACTION

3. THE EUROPEAN UNION'S CONTRIBUTION TO PROMOTING THE INFORMATION SOCIETY IN THE DEVELOPING COUNTRIES

European Union action on cooperation in telecommunications and information technologies has progressively increased over the years. Experience shows that it meets a growing need more explicitly expressed by our partners and that it produces concrete and significant results.[4] The new cooperation agreements signed with developing non-member countries include formal provisions on the information society and associated technologies.

3.1. **Economic, financial and technical cooperation** has led to significant activities in the various partner regions of the Union.[5]

In the Mediterranean region several projects have been implemented, including assistance in consulting Community data bases. On Malta the European Commission has co-financed the upgrading of the telecommunications network. An ECU 10 million programme was recently approved for the modernization of the Syrian telecommunications operator.

In Africa the accent has been on rural telecommunications and communication by satellite. Two projects for rural telecommunications services have been implemented in Mozambique (MECU 13) under EDF VI and in Tanzania (MECU 25) under EDF VII. A major satellite communication project for the safety of civil aviation has been launched in West and Central Africa (MECU 38) under EDF VI and VII. In the Pacific, a number of projects have improved communication between the islands.

In Central America assistance for the modernization of telecommunications is being set up with the COMTELCA regional organization involving financial support totalling ECU 18 million. Other projects have been implemented, including a study of human resources in Venezuela and telematic applications in Mexico, and AHCIET is running a programme of seminars.

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[4] See SEC(94)428 on Telecommunications and Development, the Role of the European Union" (Working document of the Commission's departments)

[5] See the annex listing the total sums allocated by the Community (Commission + EIB) to telecommunication projects in the developing countries, with a breakdown by geographic areas (Mediterranean, Africa, Latin America and Asia; the countries of Central and Eastern Europe are not included in these data, although they benefit from extensive cooperation with the Union).

For Asia, actions connected with the information society have been included in other operations. The ECIP mechanisms for promoting partnerships, supplementing the ALINVEST, ASIA-INVEST and MEDINVEST regional programmes, have made it possible to support more than 20 joint venture projects in the information sector and introducing ICT in industry.

3.2. From 1990 there has been **international scientific cooperation** with the developing countries under the accompanying actions (APAS) of the Framework Programme and projects totalling MECU 27 were launched between 1990 and 1994, including activities in China and India. Since 1995 this cooperation has formed part of the fourth R&D framework programme, Action 2, International Cooperation, with 25 projects totalling MECU 9, covering subjects ranging from microelectronics, telematic applications (telemedicine in Latin America, distant teaching in Africa and Latin America, management of natural resources and linguistic engineering in the Arab countries), management of natural resources (in particular for tropical forests) and industrial applications (textile industries in the Maghreb and machine tools in Latin America). However, the rapidly developing countries have expressed regret that the financial resources dedicated to ICT areas remain limited, although to them these are priority areas. Consideration is being given to whether European research networks should be linked up with the corresponding networks in the developing countries.

3.3. The **European Investment Bank** has made part of the resources earmarked for non-member countries available for initiatives under the Lomé Convention and agreements with the Mediterranean countries. Since 1980 over ECU 350 million have been lent in the countries of the Mediterranean and the ACP and since 1993 in the countries of Latin America and Asia that have signed cooperation agreements with the Community. The Bank has lent its support to these projects, set up at the request of the beneficiary countries and designed to extend or modernize telecommunications networks. Several loans and support in the form of risk capital have been provided to African countries to finance networks, in particular in rural areas, including in Erythrea, Burkina Faso and Namibia. In Morocco the EIB granted an MECU 80 loan for the extension of international cable links to connect Tetouan to Spain and Casablanca to Portugal and France. In Erythrea MECU 8 has been lent to strengthen the local network and international links, supplementing a regional project which also involves Djibouti. An MECU 75 investment was made in Chile in 1994 to connect 400 000 new subscribers to the digital network over the next two years, involving a 23% growth of initial teledensity (12 lines per 100 inhabitants).

3.4. **The Member States** also have bilateral ICT programmes. For instance, the Commonwealth Secretariat in London promotes the organization of seminars on the regulation of telecommunications and also technical training courses. The Governet project is designed to illustrate the challenges involved in the implementation of Internet in Africa, presenting proposals to meet these challenges by linking up management experts in Africa through networks with the collaboration of the Association of Management Training Institutes in

Eastern and Southern Africa (AMTIESA). The Spanish scientific and technical cooperation programme with the countries of Latin America (CYTED) has implemented several ICT projects. Initiatives taken in France include the RIO project (Réseau Intertropical d'Ordinateurs or intertropical computer network) of the French office of overseas scientific and technical research (ORSTOM) which at the end of the 1980s linked the research centres and laboratories of the countries of Southern Africa to global research networks. There are plans for extending the French REFER network to the developing countries with the assistance of AUPELF/UREF which are developing a scientific information system (SYFED) in the French-speaking countries. The INRIA (national institute for informatics and automatics research) continues its cooperation with numerous partners in the developing countries. The Italian Government, in conjunction with UNESCO and the Republic of Korea, has financed the RINAF project (Regional Informatics Network for Africa) for the creation of several access points to information networks in Africa in collaboration with other similar initiatives in the region, e.g. the RIO of ORSTOM.

4. GIVING A NEW IMPETUS TO COMMUNITY ACTION FOR THE DEVELOPING COUNTRIES

4.1. The outline sketched above shows that there has been increasing awareness in the Community and in the recipient countries of the strategic character of the **integration of the developing countries in the information society**. However, this calls for a strategy in which account is taken of this dimension when evaluating cooperation projects and programmes so as to ensure the coherence of all the instruments of cooperation for optimum effectiveness. To implement these guidelines there is no need to provide additional loans. Rather, the information society dimension should, with the agreement of the partner countries, be systematically incorporated in the existing programmes, rechannelling the funds made available, where appropriate, in particular where this dimension may be advantageous. Promoting the establishment of an economic and regulatory framework remains a first priority target, mobilizing local and international capital to ensure access for the developing countries to ICT for their benefit. The second target is to put technology at the service of development.

Creating the conditions favourable to such integration requires the following:

- establishing the **prerequisites to the development** of the information society: regulatory framework conducive to investment, commitments under the WTO on the basic regulatory principles for telecommunication, standards;

- **facilitating the access of the developing countries** to the information society through measures relating to human resources, technology transfer in particular in production and trade activities, demonstration of applications; this also includes their participation in Community R&D activities.

- supporting measures **to foster partnerships** between private operators of the Union and the developing countries;

- contributing to **better integration between the information and communication systems of the developing countries** of the same region so as to encourage interconnection of their systems and the development of new services, following the Community model;

- fostering **dialogue and coordination with international initiatives** of the Member States and those of the international organizations concerned.

In these activities account will be taken of the priorities of the Partners. Often, they will not modify the objectives of cooperation but, rather, strive to serve them more efficiently in the light of each country's specific economic situation. Nor is it the intention that the Union should substitute itself for the developing countries. Rather the Union intends to provide them with the means to participate in working out the global frameworks for the information society and developing internal models for its use.

4.2. It is proposed that cooperation should follow eight **courses of action** comprising the following:

- Raising **awareness** and fostering **dialogue**, including social and societal aspects. This can be achieved by including the information society dimension in the institutional dialogue between the European Union and most of the developing countries. Where possible this activity should be pursued in coordination with the awareness-raising initiatives of international organizations such as the World Bank (InfoDev), UNESCO and the ITU (in particular the World Conference on Development and Telecommunications to be held in Malta in 1998, and regional conferences) and, where appropriate, by supporting the initiatives that could be taken in the follow-up to the Conference of Midrand. In this context, it is important to encourage the establishment of concertation bodies between suppliers, operators and users (governments of developing countries, local decision makers, companies) to examine how the new technologies could improve national and local development strategies.

- Supporting the **establishment of a regulatory framework** suited to the development of infrastructures for which the EU has wide-ranging experience in gradual liberalization, which may serve as a model, obviously with national nuances. This includes technical assistance in implementing the commitments made to the WTO by developing countries, and support for countries contemplating such commitments.

- **The use of the financial instruments** administered by the Commission and the EIB, taking account of the other funding organisations (World Bank but also the BID, ADB, etc.) and by making financial cooperation subject to a number of conditions conducive to structural adjustment and progressive adaptation of the operators. Financial assistance should be clearly targeted and linked to consecutive stages of change. Thus, support

will be given by priority to credible and qualified operators offering prospects of efficiency and sustainability. A particular focus could be aimed at projects for rural areas or projects of regional significance.

- Action oriented towards the regional adoption of identical **standards** ensuring interconnectability of networks and interoperability of services and enabling users to benefit from falling prices resulting from economies of scale. At the same time, an impetus should be given to the adoption of strict quality requirements for systems and components. The EU has evolved a dynamic standardization policy which has led to such standards as GSM, ISDN, DECT and ERMES. The developing countries could be more closely interested in standardization and thus benefit from Community experience. Such cooperation should take place in the framework of European bodies such as the ETSI and CEN/CENELEC.

- **Pilot projects which** make it possible to demonstrate the specific benefits of applications, test their technical feasibility and evaluate their economic implications and cultural acceptance. They enable users to move forward in successive stages in adapting the specific applications and learning how to use them. It is therefore recommended that projects be incorporated in the existing programmes that are targeted at areas regarded as requiring priority under regional action plans. This should be achieved in close coordination with the projects launched at global level in the G7 framework following the conference of Brussels. The Global Inventory Project could serve as a basis for data exchange in this field.

- **Taking account of ICT in industry**, in particular in sectors where there is cooperation with the EU.[6]

- Support for defining a strategy for the development of the information society, requiring provision of the **necessary human resources**, in particular through the transfer of experience in matters of training, multilingual access to knowledge and the utilization of new technologies in this domain. Particular emphasis should be placed on targeted training, especially at a regional level, for regulators, decision makers, distributors and managers, high-level technicians and media staff, both audiovisual and printed. Priority ought to be given to local training facilities, in particular for technical staff, and to improving these where they are insufficient.

- Inclusion by the EU of the information society among the principal areas for action in the 5th Framework Programme in research and development.[7] In some cases developing countries will be able to take

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6 Document of the Commission's departments on industrial cooperation in the Mediterranean region and in Asia.

7 COM(97)47 final, Communication of the European Commission: Towards the 5th Framework Programme, the scientific and technological objectives.

part in Community programmes in this field on a project-by-project basis. This has to be implemented under the provisions on international cooperation in the framework of the Fifth Framework Programme. Specifically, the **interconnection of** European research **networks** and those of the developing countries should be systematically promoted, in particular to break the isolation of researchers in developing countries and give them access to specific documentation.

4.3. In order to take account of the specific economic, political and cultural characteristics of the developing countries and their requirements, the action contemplated should be modulated according to the particular features peculiar to each major region and the nature of the dialogue the Community carries on with each one of these. Specifically, **a regional action plan** should be drawn up and implemented in each case.

- For the **Mediterranean region,** Community cooperation takes place within the framework of the Barcelona Declaration for a Euro-Mediterranean partnership (November 1995). The Barcelona action plan takes the information society into account. The Rome Conference on the construction of the Euro-Mediterranean information society (30-31 May 1996) emphasized the importance of a communication capacity that is commensurate with trade flows. An action plan drawn up in the MEDA framework covers actions of regional interest and proposes synergy between the various instruments for structural adjustment, in particular by providing support for adaptation to the regulations, a dialogue through a **Forum on the Information Society**, accompanying support for the **restructuring of telecommunications, training,** and six domains for pilot projects: **health care, electronic commerce, tourism/heritage, IT in industry and innovation, space technology applications, research and education networks**. Additional projects are being submitted by recipient states on a bilateral basis.

- The **Lomé Convention** makes provision for a framework to foster cooperation on communications and information with the 70 partner states in Africa, the Caribbean and the Pacific. **Priority applications in social and economic services** have to be evolved in accordance with the needs specified. A reference in the Green Paper on EU/ACP relations[8] opens the way for a new approach in this direction. At political level the governments of the ACP countries should be encouraged to take due account of the problems of networks and ICT while supporting their own users and, if necessary, setting up new bodies to underpin these

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[8] Green Paper on relations between the European Union and the ACP countries on the eve of the 21st century, COM(96)570.

developments. A special approach is called for the least advanced countries.

- The countries of **Latin America** are linked to the European Community by bilateral agreements, sub-regional agreements concerning the countries of the Cartagena Agreement (Andean Pact), the countries of the central-american isthmus and a new agreement with MERCOSUR. There is also a regional dialogue with Central America (San Jose) and all the countries covered by the Rio Group. Provision is made for references to IS or ICT cooperation. Most of the countries concerned have already restructured their telecommunications and developed infrastructures with the active participation of European industry and operators or have set out to do so. Cooperation, based on the principle of mutual benefit, should encompass standards, industrial aspects, research and priority applications. As a first step it has been proposed that a conference be organized on cooperation between the European Union and Latin America on matters concerning the information society.

- The **countries of Asia** have emerged as consumers and dynamic producers of computer and communications equipment. With approximately half of the world's population, they appear very attractive in the eyes of European operators who are eager for closer cooperation, as was illustrated by a recent study on prospects for cooperation between the EU and Southern and South East Asia.[9] On the basis of the findings of this study, an initial cooperation framework with these countries is currently being studied. It mainly covers priority areas of ICT application and the creation in Asia of a "technology window" to facilitate cooperation between companies in Europe and Asia and enable assistance on aspects like deregulation and standards. For the ASEAN countries, a programme was launched at the ASEM Summit held in Bangkok in April 1996. The ICT occupy an important position in the Partnership with ASEAN meeting planned for November 1997 in Singapore. The projects using satellite observation have contributed to the development of local know-how. Today the strong demand emanating from this region calls for a specific programme which would as its first objective foster partnerships between companies. In relations with India and China, targeted industrial cooperation should be pursued while for the poorest countries, such as Vietnam and Mongolia, action should by priority focus on basic information and communication services and preparations for their access to the IS.

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[9] EU-Asia IT&C Economic Cooperation, Final Overall Report, August 1996, EC/ECO Mission No 569/96 (ref. EC CC/B/ECO/2/B7-3001/95/155).

CONCLUSIONS

The actions undertaken to date to raise awareness and provide information have highlighted the importance of integrating the developing countries in the information society. Following the Midrand Conference, three objectives have been attained:

- the start of a dialogue between developed and developing countries;
- the start of a process that should lead to a vision of the global information society shared between the social sectors concerned by development;
- the drawing up of common principles and cooperative action to strengthen our common vision and meet the challenges of the information society.

This dialogue has revealed the extent to which the gap between the industrialized countries and the less advanced countries could widen as a result of the current changes; this situation calls for specific action. Bearing this in mind, the European Commission, which has gained significant experience in co-operation in the technologies in question, proposes to take up a position that is strongly conducive to the development of the information society in the developing countries and to include this dimension in its general cooperation policy with the developing countries.

The actions proposed involve the existing cooperation mechanisms which will, where appropriate, be applied to the dialogue, awareness campaigns, the definition of appropriate policies, the development and interconnection of information infrastructures, the provision of training, the distribution of applications and the development of their contents. These activities will be managed under regional action plans which will ensure the coherence of Community action and synergy with action by the Member States, and provide a basis for concertation with international organizations.

This approach provides the framework within which the EU and its Member States can play an active role as a bridge between the industrialized countries and the developing countries, contribute to translating into practice the participation of the developing countries in the emerging information society and shape it in such a way that each one of them can participate in it.

List of abbreviations

ACP:	African, Caribbean and Pacific states, signatories to the Lomé Convention
ADB:	African Development Bank
AHCIET:	Asociacion Hispanoamericana de Centros de Investigacion y empresas de Telecomunicaciones
ALINVEST:	Investment Program for Latin America
AMTIESA:	Association of Management Training Institutions of Eastern and Southern Africa
ASEAN:	Association of South East Asian Nations
ASEM:	Asian-European Meeting
ASINVEST:	Investment Program for Asia
ATM:	Asynchronous Transfer Mode
AUPELF/UREF:	Association des Universités Partiellement ou Entièrement de Langue Française - Université des Réseaux d'Expression Française [association of partly or fully French-speaking universities - university of French-speaking networks]
BIB:	European Investment Bank
BID:	Banco Interamericano de Desarollo
CEN/CENELEC:	European Committee for Standardization - European Committee for Electrotechnical Standardization
CEPT:	European Conference of Postal and Telecommunications Administrations
CIM:	Computer Integrated Manufacturing
COMTELCA:	Technical Commission on Telecommunications for Central America
CYTED:	Ciencia y Tecnologia para El Desarrollo
DECT:	Digital European Cordless Telecommunications (European standard for digital cordless telecommunications)
ECIP:	European Community Investment Partnership
ETSI:	European Telecommunications Standards Institute

EU:	European Union
FLAG:	Fiber-optic Link Around the Globe
GATS:	General Agreement on Trade in Services
GSM:	Global System for Mobile communications (the digital pan-European mobile telephone system)
G7:	Group of 7 (the 7 most industrialized countries)
ICT:	Information and communication technologies
INRIA:	Institut National de Recherche en Informatique et Automatique (France)
InfoDev:	Information for Development (World Bank)
IS:	Information Society
ISDN:	Integrated Services Digital Network
ITU:	International Telecommunication Union
MEDINVEST:	Investment Program for the Mediterranean Area
MERCOSUR:	Mercado Comùn del Cono Sur
NGO:	Non-governmental organization
OECD:	Organisation for Economic Co-operation and Development
ORSTOM:	Organisation de la Recherche Scientifique et Technique d'Outre-Mer
PC:	Personal Computer
REFER:	Réseau Français de la Recherche
RIO:	Réseau Intertropical d'Ordinateurs
SDNP/UNCTAD:	Sustainable Development Network Program (United Nations)
UNCTAD:	United Nations Conference on Trade and Development
UNDP:	United Nations Development Program
UNESCO:	United Nations Education Science Culture Organisation
VSAT:	Very-Small-Aperture Terminal (for satellite communications)
WWW:	World Wide Web

THE INFORMATION SOCIETY AND DEVELOPMENT: THE ROLE OF THE EUROPEAN UNION

COMMUNICATION FROM THE COMMISSION TO THE COUNCIL TO THE EUROPEAN PARLIAMENT TO THE ECONOMIC AND SOCIAL COMMITTEE AND TO THE COMMITTEE OF THE REGIONS

Reference annexes, complementary to the main document:

(1) Statistics on Information and Communication Infrastructures in the Developing Countries

(2) European Commission Projects for the development of the Information Society in the Developing Countries

(3) European Investment Bank loans in the sector of telecommunications

(4) Information Society and Development Conference, Midrand 13-15 May 1996, Chair's Conclusion

(5) Euromediterranean Conference on information society, Rome 30-31 May 1996, Conclusion of the Presidency

(6) Reference paper on regulatory principles negociated in the framework of the General Agreement on Trade in Services (GATS)

Annex 1: Statistics on Information and Communication Infrastructures in the Developing Countries

(Source: ITU, World Telecommunication Development Report, 1995)

TELEPHONE: main lines and International traffic table

	Main lines *(Thousand)*	CAGR[1] (%) 84-94	Main lines *per 100 inhab.*	CAGR (%) *per 100 inh. 84-94*	Outgoing telephone traffic *M.minutes*	CAGR(%) outgoing telephone traffic	Outgoing Tel. Traf. *minute/ Inh.*
Low Income[2]	47204.5	18.1	1.44	15.9	1 880	29.1	0.6
Lower Middle Inc.[3]	92590	7.9	9.64	6.2	3 558	21	4.2
Upper Middle Inc.[4]	70083	8.3	14.12	6.4	4 032	15	8.5
Higher Inc.[5]	424140.7	3.4	50.80	2.5	38 402	14.2	46
World	634 019.2	5.0	11.39	3.3	47 872	15	9.1

[1] Compound annual growth rate. It is computed by the following formula: [(Pv/po)1/n]-1, where Pv= Present value, Po= Beginning Value, n=number of periods. The result is multiplied by 100 to obtain a percentage.

[2] GNP per Capita of US$ 675 or less.

[3] Between US$ 676 - 2 695

[4] Between US$ 2 696 - 8 355

[5] US$ 8 356 or more.

INTERNET, PCs and TELEVISION

	INTERNET			DATA TRANSMISSION	PC	TELEVISION			
	Networks	Hosts	Total estimated users	Packet-Switch[6]	Estimated Pcs (1994)[7]	Total television receivers 1994	TV Rec. per 100 Inhab.	Total TV Household 1994	Per/100, of TV Household 1994 (%)
Low Income	52	1 405	7 728	4.14	0.09	370 855	11.4	269 262	46.4
Lower Middle Inc.	815	39 851	219 181	35.20	1.00	174 967	18.3	103 084	76.1
Upper Middle Inc.	921	77 886	428 373	60.61	2.28	115 792	23.9	84 034	81.7
Higher Income	23 509	1 586 125	723 688	821.67	17.95	499 684	59.9	277 862	90.8

[6] Thousands of subscribers.
[7] Per 100 inhabitants.

Annex 2: Projects financed by the European Community for the development of the Information Society in the Developing Countries

1. R&D Framework Programme Projects

Projects launched between 1990-1994 within the III Framework Programme (APAS) committed a total amount of 27.3 Mio ECU to Asian, Latin American and Mediterranean countries. The main projects of particular interest for developing countries for the support of S&T Research are the following:

- Data Transmission System Concept for Decision Support System: a project based on the application of information and communications technologies that aims at developing an Integrated Flood Risk Management System for Shanghai. Partners of the project were the S&T Commission of Shanghai Municipality and the Shanghai Bureau of Water Conservancy. (3.532.000 ECUs)
- Computer Integrated Manufacturing: a program consisting of 4 projects in the field of Engineering Research and design, in cooperation with Tsinghua and Beijing Universities, and the East China Institute of Technology). (1.179.000 ECUs)
- Communication Mobile GSM: a R&DT project in the field of the new generation of mobile telephony technologies in China. (5.938.000 ECUs)
- DAB-DVB: Digital Audio Broadcasting and Digital Video Broadcasting for the definition of common standards in China (2.000.000 ECUs)
- Research on the interfaces of Arab and Community languages for databases or videotex in the Mediterranean. (130.000 ECUs)
- Training plan: For Latin America with AHCIET (540.000 ECUs).
- REDALC: Research networks in Latin America (140.000 ECUs).

Two mini-programmes targeting Information Technology issues of specific importance for developing countries were launched by DGIII.

- Keep-In-Touch Programme: 26 projects at a cost of 1.7 Mecu, to build IT cooperation based on researchers returning to their home countries from the European Union - a strategy to stabilise the local expertise in IT which is essential for development.
- ITDC Programme: 28 projects at a cost of 4.0 Mecu, to help build capacity in High Performance Computing, a domain of general importance for industry, for infrastructure and for natural resource planning as well as satellite data exploitation.

In the 1995 Call for Proposals, within the IV Framework Program (INCO-DC), the Commission, DGIII launched 12 projects and DGXIII launched 7 projects:

- ARAMED: Extension and integration of Arabic lingware component in a unification based MT System for the field of medical terminology and classification (130.000 ECUs).
- GAIA: A Multimedia tool for natural resources management and environmental education (700.000 ECUs).
- TELESUN: A World Wide Multimedia Teleteaching System for Universities (600.000 ECUs).
- AREF: Arabic English French Software Localisation Tool (350.000 ECUs).
- DAWRON: Design of advanced wavelength-routed optical networks (597.000 ECUs).
- ELCANO: European and Latin American countries associated for a networked database of outstanding guidelines in unusual clinical cases (465.000 ECUs).
- African Telecom: African Telecommunication Research (211.000 ECUs).
- Micropower sources: Micro-battery technologies - (500.000 ECUs).
- Porous Tech Sensors: Integrated porous silicon based sensor technology - (320.000 ECUs).
- ITUBR: Implantable telemetry for physiological data acquisition -(350.000 ECUs).
- PARALIN: High Performance Computing applied to energy efficiency in mining and electrical power industry - (630.000 ECUs).
- Peace by HPC: High Performance Computing and networking for joint research in medicine and hi-tech design -(350.000 ECUs).
- HIPSIA: High Performance Computing applied to manufacturing technology - (220.000 ECUs).
- HPC Finance: High Performance Computing applied to financial and economic planning (500.000 ECUs).
- QCIME: Quality control management software tools (299.000 ECUs).

- Iberstandard: Maintainable database for industrial standards in Information Systems development (135.000 ECUs).
- SCM+: Extended agri-enterprise - (100.000 ECUs).
- DASEC: EDI for Chinese public administration and government - (300.000 ECUs).
- IBERCHIP: CAD and ASIC design and fabrication network - (300.000 ECUs).

An additional initiative financed by DG XIII was a Workshop on: Information Society in the Euro-Mediterranean context (104.000 ECUs).

For the second call for proposals (1996) under INCO-DC, the following list of projects to be financed by the Commission has been established: 21 to be financed by DGIII and 9 to be financed by DGXIII.

- *Information Society*

- ARGONAUTA, for the development of a network application in the sector of health care and continuous medical education in remote regions of Argentina and Chile. (1.000.000 ECUs)
- MUBOSIC, will allow to develop new a communication tool to use of Digital Audio Broadcasting (DAB) multimedia services to fixed and mobile DAB users in China with a great advantage for rural areas. (849.000 ECUs)
- HARMONY, will carry out fundamental research in the field of psycho-pedagogy applied to social insertion for the disabled and those socially excluded people. (580.000 ECUs)
- TEBALA, for the promotion of tele-working initiatives and to develop a network and links between Latin America and Europe. (253.000 ECUs)
- TISMAC, will promote fundamental applied research in the field of transport. (655.000 ECUs)
- MEDEDI: Arabic language EDI and Internet technologies (425.000 ECUs).
- MEDINA: Information networks for the Arab world (489.000 ECUs).
- Internet in Asia: Social usage of internet in Asia (150.000 ECUs).
- MEDISAT: Mediterranean S&T information network (300.000 ECUs).

- *Advanced Telecommunications Technologies*

- USEE SM, will allow the upgrading of Science and Engineering education in Southern Mediterranean universities using the Telematics technologies. (309.000 ECUs)
- TRINET, for the development of data communications network appropriate for use in remote areas of DC's using Low Earth Orbit Satellite technology. (500.000 ECUs)

- *Linguistics Engineering*

- DINAR-MBC, for the research activities to create a multilingual lexical database for the benefit of both Arabic and European parties. (430.000 ECUs)
- IDOL, for the development of a computer assisted translation tools for users of less favoured languages. (511.000 ECUs)

- *Software Technologies:*

- MAGICTOURNET: Multimedia and GIS applied to regional tourism (400.000 ECUs).
- SIMES: Multimedia systems for sub-saharan environment (450.000 ECUs).
- SQUAD: Software quality (275.000 ECUs).
- PROSME: Quality management for SMEs (400.000 ECUs).
- ESIMEAU: IT in water resource management (700.000 ECUs).
- AMOVIP: Advanced modelling of visual information processing (400.000 ECUs).

- *Computer Integrated Manufacturing:*

- CARIBCAD: Internet based Computer Aided Design (350.000 ECUs).
- MTOM3D: IT design tools for the textile industry (450.000 ECUs).
- TEXCOM TOOLS: Tools for communications in the textile industry (450.000 ECUs).
- EIAM-IPE: Systems for management of intelligent actuators in industry (100.000 ECUs).
- PROQUS: Model based industrial quality control (280.000 ECUs).
- TAUTEM: Integration in Manufacturing and technology transfer (350.000 ECUs).

- *Keep In Touch*

5 actions will be supported in domains related to micro-electronics, IT in manufacturing, software engineering and multimedia technologies (350.000 ECUs).
In addition a new call for proposals has been issued for information technologies in the mediterranean area.

2. The main projects implemented or under implementation concerning different areas of application (financed by ALAMED and ACP funds)

- *In the telecom infrastructure area*
- Improvement of national telecom network in Ivory Coast, Sierra Leone, Senegal, Ethiopia, Sudan, Kenya, Zimbabwe, Fiji, Benin, Congo, Kiribati, Mozambique, Niger
- Improvement of regional satellite telecommunications in the Pacific
- Improvement of regional satellite telecommunications in Western Africa as a participation to the ITU/PANAFTEL project
- Improvement of a regional air navigation telecom in the Indian Ocean and in the Pacific.
- Regional programme for improvement of the telecommunications in the Central american Countries
- Studies on regional satelite communications in the Andean Pact
- Programme of rehabilitation of Syrian Telecommunications
- *In the Transport area*
- Telecom Network for civil aviation control and safety linking all international airports of the Gulf of Guinea countries via the Intelsat satellite.
- Improvement of a regional air navigation telecom in the Indian Ocean and in the Pacific.
- *In the trade area*
- Automated System for Customs (ASYCUDA) in several countries in Africa, Indian Ocean and the Caribbean as part of an UNCTAD programme
- Advanced Cargo Information System (ACIS) on some of the main transport mode in east African countries
- Regional Telematics Network Services (RTNS) for the Horn of Africa Countries
- Information and Communication Systems in the framework of a trade exchange projects in the Caribbean region
- Computerised system for external trade statistics in the Indian Ocean countries.
- *In the environment, natural resources, forestry, fisheries areas*
- Early warning crop forecasting and environment surveillance system for the Horn of Africa using satellites data
- Information system and support to decision making for a permanent and global management of coastal zones of the Indian Ocean countries
- Hurricane early warning and tracking system in the south pacific region, in the Meteorological Organisations (WMO) programmes
- Participation to the elaboration of two data bases : Fishbase and Reefbase
- Large scale dissemination of Fishbase to all ACP countries concerned including support for research environment in the context of ACP-EU Fisheries Research Initiative
- Lake Victoria Fisheries Research programme with managemant of related databases
- Installation of 14 terminals to improve the telecommunications through the PEACESAT network between the Forum Fisheries Agency (FFA) in the Pacific with its member states.
- *In Educational and cultural areas*
- integrated library automatization system for the public library of Curaçao

The main projects for which no financing decision has been taken yet (under appraisal or for possible consideration) are the following:

- Installation of ground facilities for a global navigation satellite system in Africa and in the Indian Ocean region to expand to these regions the European Geostationery Navigation Overlay Service (EGNOS) to be deployed in the EU.
- Regional fisheries Information and Analysis System (FIAS) for West African countries to link up otherwise incompatible and isolated data bases covering different disciplines
- Participation to the FAO project of the Land Cover Map and Database of Africa (AFRICOVER) based on satellite remote sensing
- Installation of Trade Points in West Africa, East and Southern Africa countries and in Mauritius as a participation to the UNCTAD Trade Efficiency Initiative
- Implementation of monitoring, control and surveillance of fishing activities (MCS) with the SADC Countries

INFORMATION SOCIETY AND DEVELOPMENT CONFERENCE

13-15 May 1996
Gallagher Estate
Midrand, South Africa

CHAIR'S CONCLUSIONS

INTRODUCTION

The world is in the throes of a new and highly potent revolution. This revolution will forever change the way we live, work, play, organise our societies and ultimately define ourselves. Unlike previous technological revolutions which were focused on energy and matter, this fundamental change involves our understanding of time, space, distance and knowledge. This revolution is leading to the creation of the Global Information Society (GIS).

BACKGROUND

In February 1995, Ministers from the Group of Seven Highly Industrialised Nations (G-7) and Members of the European Commission (EC) met in Brussels at the G-7 Ministerial Conference on the Information Society. This Conference re-emphasised the need for all countries, including developing countries and countries in transition, to be integrated in the GIS.

However, the challenges of integrating the less industrialised countries of the world into the GIS are tremendous. As South African Executive Deputy President Thabo Mbeki argued in his keynote address to the G-7 Information Society Conference, "there are more telephone lines in Manhattan than in all of sub-Saharan Africa," and that "half of humanity has never made a telephone call." Mbeki challenged the G-7 and the EC to convene a follow-up conference bringing together a cross-section of the developing world with the G-7 and the EU to exchange views on such questions as strategy, finance and international coordination in confronting the global information and communication challenge. He offered South Africa as host for such an initiative. The Information Society and Development (ISAD) Conference is the result of that challenge.

The ISAD Conference, held in Midrand, South Africa under the auspices of South African Executive Deputy President Thabo Mbeki, included representatives from 40 countries and 18 international organisations. Delegations consisted of government ministers and senior officials, CEOs and other private sector participants, and civil society representatives. This historic conference accomplished its three primary objectives of:

- Launching a dialogue between the developed and developing worlds and within the developing world on the emerging Global Information Society;
- Initiating the process to define a shared vision for the Global Information Society between the relevant societal sectors in the developed and developing countries;
- Working towards "Common Principles" and "Collaborative Actions" to strengthen our shared vision and meet the challenges of the Global Information Society.

USING THE POTENTIAL OF THE INFORMATION SOCIETY TO MEET THE NEEDS OF THE DEVELOPING WORLD

The Present Reality

While we speak of a "global" information society, the present reality is daunting. The technology gap between the less developed and industrialised countries of the world is widening. This situation must be addressed by the world community if we are to build a truly Global Information Society. In respect to the present reality, we acknowledge the following:

- Information and Communication Technologies and Services have the potential to offer a significant contribution towards the promotion of sustainable growth in all countries;
- There currently exists a huge gap between the highly-industrialised countries and the less-industrialised countries in terms of information infrastructure;
- Through developing an information infrastructure and effectively utilising information and communications technologies and services, developing countries can narrow the current gap in economic and social development and prevent it from widening;
- There are tremendous and diverse needs in the developing world which often differ from the needs of the more industrialised countries; and,
- Developing countries must assess their own requirements and strategies for entry into the Global Information Society based on their specific realities.

Mobilising the Required Investments

There is clearly an unsatisfactory level of investment in information infrastructure development in the less industrialised countries. Being able to mobilise the necessary investment, particularly from the private sector, is of paramount importance to the developing countries. Of equal importance, is being able to develop networks which enable the whole of their populations to gain access to the global information infrastructure and participate in the GIS at affordable prices. In respect to mobilising the required investments for information infrastructure development, we acknowledge the following:

- There is currently an insufficient investment in developing information infrastructures in the less industrialised countries;
- There is an extensive demand for information and communications technologies and services in the developing world; and,
- To create a truly Global Information Society, we must mobilise appropriate investment.

Employment, Labour Market and Work

The new techno-economic paradigm of the global economy is increasingly driven by knowledge-intensive sectors which utilise information and communications technologies. These economic sectors could form the basis of entirely new multi-media industries, products and services which could contribute to attracting investment and creating employment within national economies. In respect to employment, labour market and work in the GIS, we acknowledge the following:

- A new knowledge intensive global economy is emerging;
- The new global economy can stimulate new industries and employment opportunities;
- We must attempt to minimise the risk and enhance the opportunities for Labour; and,
- Access to training and lifelong learning must be promoted.

Using the Potential of Information Technologies

Meeting basic needs, developing human resources, growing the economy, creating a culture of effective delivery of public services, promoting a participatory democracy and conveying different cultures and ideas are challenges jointly faced by all countries in the world. New information and communication technologies, increasingly affordable as their costs continue to fall, could help developing nations "leapfrog" entire stages of development in setting up their own information infrastructures and applications. In respect to using the potential of information technologies, we acknowledge the following:

- Information technologies have tremendous potential to: meet basic needs, develop human resources, grow economies facilitate new competitive advantages, improve the efficiency of government management and the delivery of public services, promoting participatory democracy as well as cultural and linguistic diversity in each country;
- To achieve these benefits, the particular environment in each nation must be considered to promote the optimal mix of technologies in deploying the information infrastructure; and,
- These new information and communication technologies will help developing nations "leapfrog" entire stages of development.

Key opportunities exist in the following areas:

- Enhanced capacity for the development of human resources, skills and competencies;
- Improved debt management within each country;
- Improved effectiveness, efficiency and productivity in the workplace;
- Greater decision-making capability through timely access to information;
- Efficient delivery of public services through improved mechanisms and greater customer responsiveness;
- Increased access to public information;
- More efficient interface between the public and private sectors,
- Economic growth and development through electronic trade, investment and commerce, particularly for Small, Medium and Micro Enterprises (SMMEs);
- Decrease in the need for migration to urban areas,
- Health care improvement;
- Better management of natural resources and the environment, and,
- Early-warning systems for weather and other environmental phenomena.

Mobilising Investment Through Appropriate Regulatory Conditions

The establishment of an advanced information and communications infrastructure requires a favourable investment climate. In many countries, achieving such an environment might necessitate changes in the regulatory framework and economic restructuring aimed at a more liberalised telecommunications sector which could provide more choice, higher quality and better access. In attracting direct investment, national regulatory policy objectives need to be transparent, and consistently applied. In respect to mobilising investment through appropriate regulatory conditions, we acknowledge the following:

- In order to mobilise and attract investment, developing countries must create a climate conducive to investment;
- This necessitates an adaptable regulatory framework based upon competition and aiming at the provision of more choice, higher quality and better access;
- The process should take into account the particular realities in each country; and,
- Investment in indigenous content creation should be encouraged.

People's Involvement: Social and Societal Aspects

The information society has the potential to enhance the quality of life of all participants. However, the scale and pace of improvements in social welfare and economic development will depend heavily on the universal enabling environment. The social and societal benefits of the information infrastructure will be optimised by an approach which aims at the highest possible levels of participation. The alternative would lead to the emergence of two "information-classes" of citizens. In the developing world, the risk of creating a two-tiered society, where only one group of the population has access to new networks, services, and equipment, is even greater than in the developed countries. In respect to social and societal aspects of the GIS, we acknowledge the following:

- The Information Society must enhance the quality of life for all participants and avoid developing a two-tiered society;
- Life-long Education is a major key to enable full and active participation by all citizens in the GIS; and,
- Indigenous content creation should address the cultural and linguistic requirements of each society.

CREATING THE GLOBAL INFORMATION SOCIETY

Shared Vision of Human Enrichment

The potential rewards of working together towards a GIS are enticing and include: a better balance in economic and social progress between nations, growth of the global economy; the capacity to solve common societal problems, enhancing the progress of democratic values, and sharing as well as augmenting cultural creativity, traditions and identities. On this shared vision of human enrichment, we acknowledge the following:

- A consensus is emerging about the importance of global information society;
- No single model is universal; and,
- A globally cooperative approach is required.

Launching a Dialogue Between the Developed and Developing World

Like all societies, the GIS needs to be built on a set of common norms, on tolerance, on respect of diversity and on habits of collaboration and combined efforts. Easing its birth, like dealing with all major "shifts", means overcoming uncertainties and a break in continuity. While it is bringing our world closer together, existing differences in social and economic development are becoming more apparent and the difficulties they create are worsening. In respect to launching a dialogue between the developed and developing world, we acknowledge the following:

- Building the GIS requires common guidelines, tolerance, respect for diversity and collaborative actions; and,
- Distinct national visions should converge into a shared global vision.

Common Principles and Collaborative Actions

The developing and developed worlds should agree on the principles for cooperation in the GIS. Close collaboration at the highest level will ensure the efficient introduction and development of a truly "Global" information society and prevent the marginalization of some countries from this inevitable revolution.

Like all societies, the Global Information Society needs to be built on a set of principles, on respect of diversity and on collaboration.

Following the principles endorsed by the Brussels conference, which are

- promoting dynamic competition
- encouraging private investment
- defining an adaptable regulatory framework
- providing open access to networks

while

- ensuring universal provision of and access to services
- promoting equality of opportunity to the citizen
- promoting diversity of content, including cultural and linguistic diversity
- recognising the necessity of worldwide co-operation with particular attention to less developed countries

and taking into account the key policy issues identified at the ISAD conference, which are

- universal service
- clear regulatory framework
- sustainable socio-economic development
- employment creation
- global co-operation and competitiveness
- diversity of applications and content
- diversity of language and culture
- co-operation in technology
- private investment and competition
- protection of intellectual property rights
- privacy and data security
- narrowing the infrastructure gap
- co-operation in research and technological development

the ISAD participants are therefore resolved to continuing the dialogue and taking appropriate action on these principles and policy issues.

Furthermore we are committed to:

- Fostering partnerships between the public and private sectors;

- Continue or begin a process of national information society planning in each of our countries which is ultimately in concert with the development of a Global Information Society;

- Encourage further discussions towards identifying and implementing Global Information Society Projects in conjunction with non-governmental organisations and international organisations;

- Share information on best practices of development programmes and usage of information and communication technologies;

- Call upon international organisations to re-assess and refocus their development tools to give active follow-up to the principles and policies identified at this conference; and

- Fully utilise various policies and private and public financial instruments available for the development of the Global Information Society

Participants welcomed the contribution of representatives of civil society and business leaders in the proceedings of the Conference. They re-emphasised the need of public and private sector co-operation and partnership in achieving common goals.

These ISAD conclusions are informed by a commitment to ensure that the development of the Global Information Society benefits all humanity.

CONFERENCE OF ROME
ON THE EURO-MEDITERRANEAN COOPERATION IN THE FIELD OF THE INFORMATION SOCIETY

CONCLUSION OF THE PRESIDENCY

Introduction

The Euro-Mediterranean Conference of the 27-28 November in Barcelona has set itself the objective of creating a true partnership Euro-Mediterranean. With regards to the economic and financial sectors, the Conference stressed the importance of the role of science and technology in the social and economic development of the concerned countries, as well as the necessity to modernise the telecommunications infrastructure and to optimise the use of Information Technologies.

In this context, the Rome Conference underlined the importance of a harmonious transition towards the Information Society in the Mediterranean region and the utility to define national priorities and strategies in such a way as to create a favourable environment for such an evolution. It further implies a sustained effort in order to reinforce the co-operation between the European Union and its Mediterranean partners and especially in the three following sectors:

- adaptation and development of telecommunications infrastructures and services
- research and development
- human resources

that are closely linked and constitute the major elements of a Euro-Mediterranean partnership firmly turned towards the future.

To this effect the Presidence requested the Commission to set up in the context of the recommandations adopted by the Barcelona Conference the concrete means necessary for the implementation of the projects related to the Information Society and of regional interest.

I Promoting the interconnection and development of communications and trans-Mediterranean information networks for economic co-operation

The Presidency noted that the participants welcomed the results of the workshop on the regulatory framework and the development of communications networks for economic co-operation that was held in Palermo on the 6/7th May 1996 whose conclusions are annexed hereto.

In order to facilitate the interconnection and interoperability of the terrestrial and satellite telecommunications networks between the EU and Mediterranean countries, and contribute to the setting up of infrastructures facilitating the economic and cultural exchanges, the desirability was stressed of maintaining a constant and open dialogue between the European Union and the Mediterranean Countries on the regulatory framework for telecommunications, as well as the need for the standardisation which are required in order to assure the inter-operability of networks

This dialogue will have to be supported by concrete co-operation initiatives, which will include -in particular- the promotion of the development of human ressources through appropriate training initiatives.

The need was also mentioned of having a harmonised regulatory framework that plan for the progressive introduction of free market principles in the EU and Mediterranean telecommunication sector in order to promote investments. In this respect, it would be advisable to encourage competition in order to improve the quality of services, reduce costs and widen the range of supplies.

The validity of the principle of separation of functions, in the respect of each country's unique characteristics, between the regulatory authorities and the telecommunications operators, was generally recognised. It was further recognised that the commitment of the regulatory authorities must above all focus on the general objectives of national telecommunications policy, and at the same time guarantee a universal service at an affordable price and conforms to the recognised rules.

The Presidency noted with interest the co-operation initiatives identified in Palermo, and asks to the Commission to study the possibility of carrying out the development projects put forward in that forum within the framework of existing budjetay ressources, and according to appropriate procedures.

In particular, the Commission intends to organise potentional meetings between telecommunications regulatory Authorities of Euro-Mediterranean partners, in order to promote a coordinated regulatory framework.

In addition the Commission will promote the organization of Fora of euro-mediterranean operators in order to obtain a concrete cooperation among economic operators and to allow the integration of netwoks infrastructures. Firstly it has been proposed to organise a workshop on applications of satellites in the Euro-mediterranean region before the end of 1996.

Moreover the Commission will encourage the regional training projects destinated to euro-mediterranean regulatory Authorities and operators. Furthermore it has been suggested to install a network of institutions of economic telecommunication studies of euro-mediterranean partners within an Observatory for the communication development in the region.

On its part the Commission has asked for the support of the euro-mediterranean partners for the realization of a study launched in connection with the World Bank and I.T.U. on the situation of telecommunications in the Mediterranean and the modalities of development cooperation in the sector.

II To put research and technological development at the service of the Information Society and social and economic development

The Conference participants have favourably acknowledged the results obtained during the Sophia-Antipolis workshop of the 1-2 nd April 1996 which are reported in the annex to the present document.

On those bases, the importance of maintaining a constant, open and sustained dialogue through concrete initiatives between the Euro-Mediterranean partners has been underlined. To this effect, the Follow Up Committee for the research issue of the Barcelona dialogue, which met in Capri in Mai 1996, could constitute an appropriate framework.

The Presidence has noted with satisfaction that the delegations expressed the wish of launching co-operation actions, as soon as possible, covering the whole of the concerned fields ranging from basic research to demonstration projects bearing in mind the specific needs in the fields of training, awareness building for the users and the reinforcement of the research capacity and technological support.

To this end, the available means of the Fourth Framework Programme that are likely to interest the Mediterranean region, would see their impact reinforced by a fast and mass commitment without questionning the established balances.

It appeared desirable that clear and efficient mechanisms be established in order to support the activities at the hart of the Euro-Mediterranean partnership according to the Barcelona Declaration and in coordination with the tools of the Framework Programme.

Furthermore, it has been agreed to encourage a bilateral resource mobilisation of the European Union's Member States in the neighbouring sectors.

Finally, a ceratain number of proposals seemed to be particularly important:

- establishing links between Information Society application projects set up in the European Union, and similar projects in Mediterranean partners;

- promote the constitution of a high capacity Euro-Mediterranean data transmission backbone using submarine cable infrastructures and existing or future satellites. The World Wide Web (WWW), reinforced by a satellite infrastructure, would provide the perfect common tool for the development of "thematic communities" and for the realisation of "pilot projects" identified by the Follow Up Committee for the research issue of the Barcelona dialogue. All these activities could be the object of a Euro-Mediterranean technological co-operation initiative. To this effect a preparatory workshop will be organised by the end of the current year

- promoting the development of scientific activities of researchers and those in charge of technological development in their countries of origin especially through "keep in touch" actions.

Furthermore, the participants took note of the Conference of the industrials which was held the 7th of may

III To put new technologies at the service of the development of human resources and encourage, through training actions, the establishment of the Information Society

The participants of the Conference have favourably acknowledged the conclusions of the Brussels' workshop on education and training (which report is annexed to this document), which was held on 2/3rd of May 1996. Moreover, it was maintained that from now on, developing strategies will have to be increasingly based on advanced communications and information networks and on educational and professional training systems which foster lifelong learning, mobility and reconversion.

Education and training play a fundamental role in those changes brought about by innovation technologies which concern both individuals and the economic dynamic. Information Society tools contribute to the establishment of new and promising educational opportunities, thus providing everyone with complementary and more efficient means to widen their own knowledge and introducing a potential factor of equal opportunities. Moreover, they would increase access to information and make it available for the greatest number of citizens.

In this sense it has been reaffirmed the need for strengthening the links between the European Union and its Mediterranean partners as far as training, and more generally cultural and societal aspects are concerned, in order to integrate them in a long-term co-operation context. It would be advisable to deepen the mutual rethinking of diffusion methods and training experiences at a Mediterranean level on the use of Information Society tools as well as on the educational techniques which are more appropriate in relations to new technologies.

More specifically, the Italian Presidency noted the interest expressed by the participants to:

- promote co-operational pilote projects in order to give the students, since the primary level of education, the basic knowledge for understanding the new technologies and using them in their life in a critical and responsible way.
- intensify the exchange of experience on educational and training projects which involve the use of communication and information technologies, in the fields of primary, secondary and university education, initial and continued professional training, adults and teacher training. In this perspective, it would be desirable to foresee the creation of a Euro-Mediterranean network for the identification of potential partners and for the exchange of information. This network might be built on the already existing poles of competence.

- foster initial and continued training in the field of telecommunications and access to electronic information networks.

- ensure that co-operation, through existing initiatives, will have all the necessary synergy to implement Mediterranean actions based on teaching and distant learning. Thus representing a valid point of reference for the development of joint actions. These actions might be included in the Euro-Mediterranean partnership.

- give special support to the pilot projects which, in the context of existing programmes, involve putting the application of information technologies at the service of education and training (including on-line networks, optical fibres, television channels, also the satellite ones, distance learning infrastructures). One of the objectives will be to identify, without ignoring either consistency with the existing ones or cultural mediation requirements; cheap and feasible optimal models for education and distant training.

- favourably foster projects concerning the building of awareness and the training of teachers and training staff. Indeed, these actions would have the advantage of familiarising the users with new technologies and thus allow them to fully integrate the future evolution and play an active part in it.

Annex 6 : Regulatory framework of the General Agreement on Trade in Services (GATS)

The Negotiations on basic telecommunications services, held in the GATS framework under the auspices of the World Trade Organisation (WTO) in Geneva, started in April 1994, shortly after the end of the Uruguay Round. Governments worked to set aside national differences on how basic telecommunications might be defined domestically. They negotiated on all public and private telecommunications services (local, domestic long-distance and international). Services covered by this Agreement include voice telephone, data transmission, telex, telegraph, facsimile, private leased circuit services (*i.e.* the sale or lease of transmission capacity), provided on a facilities-basis or by resale, and through any means of technology (*e.g.* cable, wireless and satellites).

Negotiations concluded successfully on February 15, 1997. As a result, **69 governments undertook legally binding commitments on access to /and national treatment on their respective telecommunications services' markets.** Commitments undertaken reflect various degrees of liberalisation and development of the sector in the different countries, in accordance with the GATS principle of progressive liberalisation. The commitments are inscribed in so-called "offers" (Schedules of Specific Commitments on Basic Telecommunications). Out of the 55 offers (counting the European Community as one), **35 pertain to developing countries.** Together the offers account for well over 90% of world revenues from telecommunications services.

The most important result of the Agreement is that the telecommunications services' sector is now **fully embedded in the WTO multilateral trading system**, namely that:

1. The GATS *general obligations and disciplines* will apply to it from the date of entry into force of the Agreement (1.1.1998):

- **Most-favoured-nation (MFN) treatment:** Each WTO Member shall accord to telecommunications services and service suppliers of any other Member treatment no less favourable than that it grants to telecom services and service suppliers of any other country (*i.e.* non-discrimination *between* countries);

  Members wishing to maintain measures inconsistent with the most-favoured-nation obligation had the one-off possibility, *before* the conclusion of the Agreement, to table a MFN-exemption. Very few countries have chosen to do so, and the scope of their exemptions remains limited.[21]

- **Transparency** (publication / public availability of all relevant information);

- **Domestic regulation:** In each telecom services' sector for which a country has undertaken market access commitments, it must ensure that all its measures which

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[21] The only permitted exceptions to the MFN principle are: 1) economic integration agreements (such as the EC, NAFTA, etc.) provided they cover substantially all services sectors; and 2) advantages conferred to adjacent countries in order to facilitate the exchange of services limited to contiguous frontier zones.

affect trade in such services are administered in a non-discriminatory, objective and transparent manner. *E.g.*, licensing requirements and technical standards must be based on objective and transparent criteria, and cannot act as a disguised market access barrier -- unless otherwise specified in the country's offer;

- **Disciplines for monopolies and exclusive service suppliers:** Each Member shall ensure that any monopoly or exclusive supplier in its territory does not act in a manner inconsistent with that Member's MFN obligation and market access commitments. In addition, where the monopoly or exclusive supplier competes -- either directly or through an affiliated company -- in the supply of a service which is outside the scope of its monopoly or exclusive rights and is part of that Member's market access commitments, the monopoly or exclusive supplier is not allowed to abuse its monopoly or exclusive right position;

- **Disciplines concerning business practices:** Each Member shall, at the request of any other Member, enter into consultations with a view to eliminate business practices of its service suppliers in case such practices restrain competition and thereby trade in services

The above-described GATS general obligations and disciplines will apply to telecommunications services for all four modes of supply -- within the limits of each country's commitments. Of particular importance in this respect are the cross-border supply and the supply through establishment of a commercial presence (foreign investment).

2. The GATS **'Annex on Telecommunications'** (entered into force already at the end of the Uruguay Round) **which provides for:**

- **Transparency:** Each Member shall ensure that relevant information on conditions affecting access to and use of public telecommunications transport networks and services is publicly available, including: tariffs, specifications of technical interfaces, information on bodies responsible for the preparation and adoption of standards, *etc.*;

- **Access to and use of public telecommunications transport networks and services:** The Annex acknowledges the dual role of the telecommunications services' sector, as a distinct sector of economic activity and as the underlying transport means for other economic activities. Each Member shall ensure that access to and use of its national public telecommunications transport networks and services is granted on reasonable and non-discriminatory terms and conditions to any service supplier of any other WTO Member.

3. **Additional commitments on the basis of the Reference Paper on regulatory principles:** countries negotiated a set of regulatory principles specific to the telecommunications' sector in order to complement the existing GATS obligations and disciplines. These principles aim at ensuring *more effective* market access and national treatment commitments -- while accommodating different regulatory environments and practices worldwide. They address and set rules on a number of key issues: definitions of key concepts (such as 'essential facilities', 'major supplier'); prevention of anti-competitive practices in telecommunications; interconnection obligations; universal service, public availability of licensing criteria; independence of the regulator; and allocation and use of scarce resources. Out of the 69 countries, 54 undertook additional

commitments on regulatory principles on the basis of the full Reference Paper, and 10 at least on parts of it

4. Finally and most importantly, Members' commitments on telecommunications services will be subjected to the WTO dispute settlement rules and procedures. This will guarantee a high level of legal security with respect to implementation of commitments.