



***G7 Ministerial Conference
on the Global Information Society***

Round-table meeting of business leaders

Brussels, 25 and 26 February 1995





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Cataloguing data can be found at the end of this publication

Luxembourg: Office for Official Publications of the European Communities, 1995

ISBN 92-827-4094-3

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Printed in Germany

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¹ Based on English simultaneous translation provided by the European Commission interpreting service.



Preface

The G7 Conference on the Global Information Society, held in Brussels on 25 and 26 February 1995, was organized around three main events: a series of ministerial meetings on regulatory issues, applications, and social and societal aspects; a showcase consisting of demonstrations of how information and communication technologies can improve our daily lives; and a round-table meeting bringing together a group of international business leaders. The conference's main successes were in promoting international cooperation and in raising public awareness of how the global information society can meet the needs of citizens.

The round-table meeting provided a unique opportunity for the private sector to participate in G7 discussions, in full recognition of the important role it must play in the development of a global information society.

Below is a summary of the key messages expressed by the international business leaders at their meeting. In the course of their discussions it was proposed to draw up an action plan that would be presented to the G7 Summit in Halifax in June 1995.

The convergence of telecommunications, computer and audiovisual technologies means that it is increasingly difficult to separate the three industries. All three seem to share a common destiny known as 'multimedia': the combination of sound, data, and video in digital form. As a result, companies from different parts of the multimedia spectrum have been forming alliances so that they can benefit from each other's expertise and transform a convergence of technologies into a convergence of businesses and markets.

These companies are operating in a global market which is increasingly information-based. Advanced communications networks today allow them to send and receive information in any form (text, image, sound) around the world in a matter of milliseconds. Companies are therefore able to develop global structures and extend their access to markets the world over. They are demonstrating that information knows no borders in today's world.

The rules that have regulated these markets in the past have yet to be adapted to this digital revolution and the effects of globalization. Artificial barriers continue to prevent competition between the different actors. The use of information infrastructures also raises questions about privacy, data protection and intellectual property rights: ensuring that information stays in the right hands and that creators

of content are properly rewarded. A new environment therefore requires new rules.

The huge investments that are required to build a global information infrastructure and to launch new markets based on the use of multimedia technologies will come from the private sector. In a rapidly changing world, companies need a liberalized environment which allows them to be flexible and innovative so that they can respond to competition and consumer demand. Market forces will ensure choice and low prices for consumers.

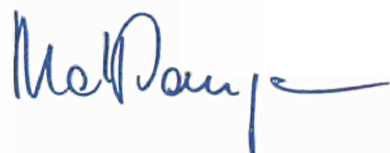
Multimedia itself is expected to be big business once the technologies are transformed into services and applications that can be used at work, in education, in hospitals, and in entertainment. These services will be instantly accessible wherever you happen to be and therefore greatly reduce the need to travel between destinations. These new possibilities will soon begin to transform the way people go about their daily lives.

Market tests have so far shown that it will take time for people to adjust to using these new services. They have also shown that the technology exists, but this is not enough. Work needs to be done to find out exactly what people's needs are, what services they will subscribe to and use regularly, and how to prepare and train them so that they are comfortable about navigating in a multimedia world.

People tend to be very suspicious about new technologies and their impact on employment, for example. Although the way people work may change, new markets and new business will bring new jobs.

In order to allay fears, pilot projects must be a priority — these can help raise awareness of the new opportunities on offer and demonstrate, for example, through teleradiology or other healthcare or educational applications, how the information society will respond to their real needs.

To this effect, the G7 ministers agreed to collaborate in the launch of 11 global applications in partnership with industry. The G7 meeting thus gave a clear signal that government and industry are working together right from the start, to ensure a smooth transition to a global information society that meets the needs of citizens and business alike.

A handwritten signature in blue ink, appearing to read 'Martin Bangemann', with a long horizontal flourish extending to the right.

Martin Bangemann,

*European Commissioner
responsible for the Information Society*

Participants in the round-table meeting of business leaders

Mr J. Delors	Chairman
Mr R. E. Allen	Chairman of the Board AT&T
Mr N. Araki	Executive Vice-President The Tokyo Marine and Fire Insurance Co. Ltd
Mr I. H. Asper	Chairman and Chief Executive Officer Canwest Global Communications Corporation
Dr T. C. Bearman	Dean and Professor University of Pittsburgh
Lord Blakenham	Chairman Pearson plc
Mr P. Bonfield	Chairman and Chief Executive Officer ICL plc
Dr L. Brichetto Moratti	President RAI
Mr A. Chagnon	Chairman of the Board and Chief Executive Officer Le Groupe Videotron
Mr J. F. Cooke	Executive Vice-President The Walt Disney Company
Mr E. Davignon	Chairman Société générale de Belgique SA
Mr C. De Benedetti	Chairman and Chief Executive Officer Olivetti SpA
Prof. M. Dertouzos	Professor and Director Massachusetts Institute of Technology
Mr J.-M. Descarpentries	Chairman and Chief Executive Officer Bull

Dr H. Hultzsch	Member of the Management Board Deutsche Telekom AG
Dr K. Inamori	Chairman Kyocera Corporation
Mr H. Inose	Director-General National Center for Science and Information Systems
Mr J. R. Junkins	Chairman and Chief Executive Officer Texas Instruments Incorporated
Mr T. Kitaoka	President Mitsubishi Electric Corporation
Mr J.-L. Lagardère	Chairman and Chief Executive Officer Matra Hachette
Mr P. Lescure	Chairman and Chief Executive Officer CANAL+
Mr G. Levin	Chairman and Chief Executive Officer Time Warner Inc.
D. K. Mangold	President and Chief Executive Officer Debis AG
Mr C. O. McCaw	Chairman and Chief Executive Officer Teledesic Corporation
Mr E. McCracken	Chairman and Chief Executive Officer Silicon Graphics Inc.
Dr P. Mihatsch	Member of the Executive Board Mannesmann AG
Mr T. Miki	Representative Director and Executive Vice-President Nippon Steel Corporation
Mr I. Okawa	Chairman Sega Enterprises Ltd
Mr J. Ollila	Chairman and Chief Executive Officer Nokia Corporation
Dr E. Pascale	Managing Director Società Finanziaria Telefonica SpA
Mr R. Phillis	Deputy Director-General BBC

Dr L. Ramqvist	President and Chief Executive Officer Ericsson
Mr M. Roulet	Chairman and Chief Executive Officer France Telecom
Mr I. Seidenberg	President and Chief Executive Officer Nynex Corporation
Dr T. Sekimoto	Chairman NEC Corporation
Mr C. Sirois	Chairman and Chief Executive Officer Teleglobe Inc.
Mr M. Spindler	President and Chief Executive Officer Apple Computer Inc.
Mr P. Sutton	Chairman Emeritus Inner City Broadcasting Corporation
Mr J. D. Timmer	President Philips Electronics NV
Dr M. Tronchetti Provera	Executive Deputy Chairman and Managing Director Pirelli SpA
Sir Ian Vallance	Chairman BT plc
Mr C. Velázquez-Gastelu	President Telefónica de España SA
Dr H. von Pierer	President and Chief Executive Officer Siemens AG
Mr L. R. Wilson	Chairman, President and Chief Executive Officer BCE Inc.
Dr M. Wössner	Chairman and Chief Executive Officer Bertelsmann AG
Mr H. Yamaguchi	Chairman Nippon Telegraph and Telephone Corporation



G7 Ministerial Conference on the Global Information Society

ROUND-TABLE MEETING
OF BUSINESS LEADERS:
*Extracts of statements
made by the participants*

Introduction

Mr Jacques Delors

'Good morning, ladies and gentlemen,

The principle of this meeting was decided, as you know, at the Summit of Industrialized States in Naples in July of last year. You are here as representatives of a large number of undertakings — the total turnover is something like USD 500 billion — and you employ some two and a half million people. We are here to listen to you — we, as ministers, Members of the European Parliament and representatives of national and European administrations. It is not my intention to make a lengthy introductory statement. You are at the centre of the development of the information society: market evolution, all the initiatives that you and other companies have taken, launching new products for example, creating new forms of agreement, taking adventurous steps for the future with the multimedia in a combination of pictures, sound and written text.

In all of those matters you will be listened to, not just by ministers and politicians, but also by the man in the street, since this working session is being televised live. I must say that the ordinary man feels rather dubious. Furthermore, intellectuals and experts are starting to say that this may all simply be a mirage. All too often people seem to suggest that, thanks to the new technology, almost as if by waving a magic wand, we shall be in the best of all possible worlds. However, I think we must recognize that the new technology can lead us in many different directions, good or bad.

Therefore, it is important that your voices be heard via the media, in order to convey a message to those who have either been sidelined from this very complex universe or those who have serious concerns. Consequently, I would propose the following format for our discussions.

First of all, prospects on the demand side. Now some of you might say that supply creates demand, which is true to some extent. However, there are limits. You are businessmen and you know that sometimes you have problems because demand does not shape up at the right time, or to the extent that you might wish.

Then we will talk about the role of public authorities, what you want them to do. They may know that already, but perhaps in what you say there will be interesting

nuances which would make it easier for all of us to understand the problems at stake.

Thirdly, how do we organize international cooperation? (Not cooperation between your companies — you are cooperating already: you have not waited for today's meeting to have the opportunity of getting together and organizing joint ventures or whatever.)

Finally, we need to address concerns about some of the risks that these new technologies might involve. The two main risks described are, first of all, as you know, a fear that this would lead to greater inequality between nations or between citizens of the same nation in terms of access to these new technologies, and secondly, a rather vague concern — more in Europe than elsewhere — that technological progress would cost jobs. Whereas in the past technological progress has always created more jobs than it has destroyed, it also had advantages in terms of improving working hours and the quality of work.

Let me take the first element straight away. Prospects for the information society in terms of demand: what this means for companies' investment, relations between companies, organization of work. Also private demand, leisure-time services, culture, education and, finally, demand by public authorities.

This is something we in the Commission were also very concerned by. We believed that the internal market should also be encouraged by systems which would enable our brain power and our knowledge to circulate. This will, without doubt, be the basis of wealth of the future. But also what can be done to simplify relations between administrations and/or what can be done to promote policies in areas such as health, education and culture for rural areas or wherever? You all have experience here. You have all put forward proposals.'

Theme I:

What are the perspectives of the information society in terms of the development of demand?

Mr C. De Benedetti

'Mr President, from an industrialist's point of view, we are witnessing today two revolutionary forces which are transforming the world. One is a technological element and one is a social, political element.

On the one hand, digitalization, the technological force which you just mentioned, which is about the unification of word, sound, paper, images, and on the other hand is a social political force, which is the globalization of the world economy.

Those two forces are different but they interact with each other and I would say each fuels the other. Those two forces will reshape the foundation of our economy throughout the world and I would say more in general the foundation of our society, which means even that of our own lives, and I strongly believe that these will lead us into a major development cycle which has no precedent in history.

Just talking about jobs, looking at 1993 in the US and at a total net job-creation of around 1.7 million, around 1 million of these (which is 65%) are jobs related to information-based activities. To give you another number related to 1993, 200 000 jobs have been created in education in the States, 300 000 jobs in software-related activities, compared with 33 000 jobs in the automotive industry, just to indicate what we are talking about.

Now, when we are confronted with a big discontinuity — and there is no doubt that we are confronted with an historical discontinuity — there are normally two ways to react. We can react in a defensive way, or we can try to take up the challenge.

Now, normally if you look at history, of course, everybody knows that defence has always been in a losing position, but today I think we do not even have the possibility of taking that kind of attitude, because defence means trying to create borders, trying to protect. I think that you can stop luggage, a piece of iron, or a piece of plastic at the border but I do not think you can stop ideas at borders, and we are

talking about a society in which the engine is know-how, brains, ideas. There are no borders for ideas, and therefore any attitude which will be regulated to create a — let's say — protectionist attitude, cannot work.

It is not a question of deciding whether it's good or not: it just cannot work, because you cannot stop ideas at the border.

So I think the first message that we would like to convey is that we must clearly understand the revolutionary nature of what we are witnessing in terms of discontinuity. As a consequence, we need a commitment to action designed to take advantage of this discontinuity.

You mentioned before in your introductory remarks that there are also concerns about the negative consequences of this revolution, but I think that we should commit ourselves round the table to indicating clear action to be taken instead of insisting too much on the risk. The global information society cannot be imposed by a central plan. This is something that, to my mind, my colleagues round the table will share. It has to start from the real needs of the people, as you rightly ask us to define them, and I think that the concerns which are now common throughout the world are unemployment, quality of life and fear of an unknown future.

Now, if you look at unemployment, in the US in the last three years, 7 million new jobs have been created, while in the European Union we lost 3 million jobs in the same period of time. Now, the people who believe that this is due to the conjunctural cycle, I think, are wrong. This is marginal. Basically, I think that the United States has understood the rules of the new society in terms of regulation, both public regulation of infrastructure and regulation of a labour market.

Where do those jobs come from? Mostly from new services and applications. Who are they for? Individuals, business, institutions. I think that my colleagues will further elaborate on that — but I am thinking especially about business, small and medium-sized enterprises, which can be interconnected and therefore share services which they cannot afford to have on their own.

Now then the question is which rules should we change? To my mind, we should change all the rules that restrict the market and new demand. That should be done swiftly and worldwide. A fast worldwide deregulation of infrastructure is needed, as the US case demonstrates, to create the conditions enabling us to take advantage of the information society. Part of what we have to do is to reduce monopolies. Monopolies are not compatible with an information society which is dominated by free market flow, a free flow of ideas and no borders.

On the other hand, if that is true, we have to introduce new rules at global level because there is no market without rules, as you very well know. But the rules should not be at national but at global level if we want to create a global information society.

The third element which I would like to stress is education. Education is the cornerstone, for the very simple reason that if the engine of this new cycle is going to be brain, know-how, skills, then the only way you can encourage them is to invest more in education, which to my mind is the cornerstone of the whole affair. I believe that the conference should take a clear stand on these three points, which means identification of people's needs; second, deregulation and new rules; and third, major investment in education.

I believe that time is short. I shall finish by saying that time is short — and not just this morning — time is short in this revolution we are witnessing, because the combined effect of the digital revolution and the globalization of the world economy is getting faster every day. To my mind this conference should not finish tomorrow, but should be the first building block in the construction of the global information society.

We urge a clear action plan to be put on the agenda of the next G7 meeting in Halifax, and I have a practical proposal which I am putting on the table on behalf of Jérôme Monnot, the chairman of the European Round Table, and myself as chairman of the Information Society Subcommittee.

We would ask our American and Japanese colleagues to have a working group to prepare an action plan. I am aware that you know me, and I know that you have appreciated what we have done with the Bangemann report, which was quite a practical report and not the normal sort of paper. In the next four months we are prepared from our side, as business people, at least as European business people, to come up with a practical agenda to present at the next Halifax G7 meeting to help politicians to decide what should be done to take advantage of this big discontinuity.'

Mr M. Spindler

'In order to avoid repetition, I would like to bring some perspective to the consideration of demand and supply, in the sense that we will see surprises in the development of applications. I suggest that the closer we can bring the dialogue to real people and not let the work stay at this definition of infrastructure, the better we're served to create stimulus and societal change in behaviour.

When the telephone was invented and the inventor went to the, then, president of Western Union, there was a vital debate about its future applications and the prediction that was very obscure. It turned out very differently and I suggest that in the end, 10 years, 15 years from now, we will see applications on the infrastructure that we never dreamed of happening, or even being possible. As Carlo said, there are basically three sectors where this will happen.

The private-sector demand is largely associated with our continued business in engineering where we have to stimulate real people redesigning business processes

and applying new information technologies to do so. Applications which come to mind here are two-way training, white-boarding, the "adhocracy" of business that has a sense of urgency to solve problems more or less on the fly. I can see we will have applications that look like flight simulators for business where we tie organizations together much more in "adhocracy" and disassemble them, not physically but virtually.

The same is true in the sector of education. We have to shorten the distance of physical locale to knowledge. That is of particular importance in developing nations that don't have a sufficient infrastructure today. So public-sector demand in the areas of education, libraries, any public domain information that needs to be brought more visually to the citizen is an important area.

Third, the area of basic consumer demand, today articulated as the entertainment industry.

We see testbeds today that demonstrate that technology is not a hindrance. We can almost predict with the "law of more" when and what significant advance we can achieve in technology. The barriers are social, political, and economic. Can we fund, at any level of time, significant progress in these applications? The visibility of applications lies in the information appliance. That is where the user experiences any application or use of the infrastructure. The infrastructure itself is a means of delivery.

We will see terrestrial systems as much as non-terrestrial systems, high bandwidth. We need to be prepared for the infrastructure to be able to respond at any time to the engagement of society with information, which is the equivalent of a US airline company providing seats for the capacity at Thanksgiving and the rest of the year pretty much flying empty. The same network characteristics are there that we have "burst" modes when an engagement takes place interactively. So the question of funding this infrastructure is important and how much application deployment we can achieve in these basic three sectors.

The question of universal access is not only determining that anybody in the globe can access information but also how. We need to have choice and but we have to have discipline in the interoperability of applications and networks of any kind, because I personally do not believe it is one highway, leave alone super. There is probably a collection of diverse networks that have to cooperate and we have use of the infrastructure to develop applications that are compelling and enticing.

I suggest that in the beginning we cannot predict all the applications that make sense. There is experimentation — we have to take a risk, and there will probably be a large amount of fragmentation in the beginning just because of the social "peripheralization". We have different consumer preferences today in viewing and accessing information. We have different lifestyle choices: work at home, work in the office. The aspect of mobility will change very largely the way in which we

conduct work and learning: this famous notion of any time, anywhere, and we still have large different sizes of discretionary incomes in households or in business.

So all these sectors will drive the variety and differentiation of applications that we can see. We cannot mandate them and we cannot order them. It will be a choice as to the user who will experience this information, and the more we can make it less intimidating and more compelling, the more we will see the average person in the street, as we have said, making large and rapid progress in this undertaking globally. Thank you.'

Mr A. Chagnon

'Mr President, I think demand will be very important for the services which may be provided in this information society, but at the outset I think we will be basing ourselves on the regulatory framework for the information society which should favour the consumer, because the objective for the consumer is for him to get the lowest prices and the best services and the biggest choice of content, access to creative, innovative services and avoiding inequality by having prices which are accessible to everyone.

The way to achieve this will be to have proper competition in infrastructure. Through competition all these advantages will become available, and there are many examples in society demonstrating the advantages of competition.

Now competition will only be possible, however, if we have a clear, stable and foreseeable regulatory framework. The billions which will be necessary to construct this information highway and which will enable us to offer these services will be available if we can encourage private investment and if we have, therefore, a stable and foreseeable regulatory framework.

I would just like to refer to the only model we have now for competition which exists in the UK and which promotes the interests of the consumer by promoting competition; the regulatory framework is so clear that investors are prepared to make major investments — last year more than 10 billion. Thirty thousand jobs have been created and each year major investment is expected in the UK, because there is this stable regulatory framework which is vital if we are to have private investment devoted to the information highway. So the consumer's interests must take precedence and must be supported by a firm regulatory framework.'

Professor M. Dertouzos

'I would like to add what I think is an important topic here. I find throughout the world a misconception about what the global information society is — a global information infrastructure.

It is a fuzzy concept, so a lot of people can put in it what they like, but if I may suggest, information is not only one thing. Most people think it is the 500 channels of television. It is a lot more. Information is about books, information is about software, about money, about our health information, it is about recipes for cooking, recipes for making us better, recipes for manufacturing, it is about learning, it's about human speech, music and a lot more — but I do not want to bore you. What I would like to offer is a model for us to think about this and I look back at the telephone model that Michael Spindler brought up.

When it was all finished, the telephone penetrated every sector of society — economic but also intangible — personal telephone calls to loved ones, as well as business phone calls. I would like to suggest that this global information infrastructure is going to have pretty much the same future. It will penetrate every sector of society. In fact, we might even try to challenge and ask — can you think of a sector, economic or non-economic, which cannot benefit from the global information society or cannot be affected by it?

So in the first place, Mr Chairman, I think we are talking about a global information infrastructure that will be proportional or will penetrate the entire spectrum of human desires and human activities, from economic to non-economic. Entertainment and recreation represent perhaps somewhere between 5 and 10% of the economic portion of that spectrum and I think we should view it in that perspective. There is a lot more, and that is the first message I wanted to bring here.

In the second place, so as not to repeat what Mr De Benedetti and Mr Spindler said, I would like to add something on stimulating demand. Besides making machines easier to use and making sure that they address human values and human concerns, I'd like to address the productivity issue.

In the industrial era, we got bulldozers and they replaced the shovel. Today we are using a lot of electronic mail, we are using a lot of World Wide Web which my organization, together with INRIA, is setting the standards for, and we are using a lot of screens where people look at it and still use their brains. That, Mr Chairman, is like shovelling — it is like having shovels. What we need is to have computers do a little more of that work by talking to each other without ignoring us but by relieving us from burden, much as the bulldozers relieved human muscles. To increase productivity, we must give attention to interoperability standards and methods, both freely developed in the private sector and stimulated by government.

And finally, there is something that we could do here, the G7. We could stimulate demand by instituting global network centres throughout the world that would be large, interconnected centres with high bandwidth between them, where people could go and do group work with each other and those centres. There could be several thousand built by private investment in the next few years — and they

would serve as “go to” places. They would combine about seven of the projects that we are looking at here, including the libraries and health centres and so forth.’

Dr M. Wössner

‘Thank you. I think we are here today to see that the information society of tomorrow cannot be shaped by the laws of yesterday. We are talking about interactivity, digitalization, compression of data and so forth. We are talking about prospects of economic welfare and job creation over the next two decades. Now you, President Delors, you, Commissioner Bangemann, have served this cause well and you are now here to hear what our demands are. Our demands of ourselves, of industry, but also our demands of politicians.

First of all our demands on industry, on the economy. We are being called upon to produce uniform standards for networks, for terminals and for production. We are there to create a network of superhighways and we are also being called upon to promote cooperation between the hardware producers, the content providers and the network operators.

Information highways without content are like a motorway without vehicles, and this then brings us on to our demands of politicians. Politicians must ensure that we have the necessary economic latitude. We must do away with any sort of obstacles to trade.

The content-providers, whom I represent, need this area in which they can express themselves. Cultural diversity and pluralism must be guaranteed by competition, not by regulation. The way to cultural diversity and pluralism can only be achieved if we have competitive and effective media undertakings. We need global rules and open markets in Europe and throughout the world, not only for the technical infrastructure but also for competition between the content-providers.

Next — and this is a particular point for the content-providers — we need reliable copyright protection. Right-holders, producers, editors, artists, need to ensure that in the digital era their rights can also be protected. Only in that way will you get qualified content production in the future. In GATT, in the TRIPS Agreement, a number of principles have already been established. These must be implemented, but TRIPS must also evolve. Current principles of copyright must be adjusted to the new digital era with new exclusive rights for producers, editors and creators.

Furthermore, alongside the general framework, we also need to have the necessary technical rules on control of use and this is only possible by creating a new copyright management system — a very daunting task but one which we must address.

In addition, you politicians must ensure that the editors, the publishers, are the ones who shape the market, not those from outside. Editors, publishers, with their responsibilities, with their social awareness, must have clear access, with discrimination, to these media markets.

Also, there can be no question of simply adding up national and European rules, because this would simply bury the whole system in red tape. A purely technical definition of radio diffusion would be inappropriate. Online banking or teleshopping are simply not in keeping with those concepts of the past.

Finally, personally, after this call for freedom and deregulation, let me say the following. We, the media-makers, and you, the politicians, must also attach the utmost importance to general principles of protection of society, protecting young people against violence, pornography, and racist programmes. We must allow freedom of choice and we must also do everything we can to guard against discrimination on religious and, say, political grounds.

Our credo is social responsibility with entrepreneurial success. These are not opposites. On the contrary, they complement one another.'

Dr T. C. Bearman

'I believe we have a unique opportunity at this conference to begin to improve the understanding of human knowledge around the world. I think we can increase human understanding through the sharing of knowledge and the culture of our different countries. We have access now to the records of many different cultures in the libraries, the archives, the museums, the galleries of our nations and of our communities. The opportunities presented for education from the very youngest children to the very oldest of our senior citizens are endless.

In my own country, my daughter in a public school is able to communicate with students around the world in their language. She is learning about cultures, improving her own understanding, and we would like to see this opportunity available to children in all countries. We have opportunities to share not only written, but oral traditions as well through the new technologies.

I believe that the global information infrastructure can do internationally what Andrew Carnegie did for American society in taking public libraries to every small community in America. The global information infrastructure can do this and provide all of us with a unique opportunity for increased human understanding, for lifelong learning and for further cooperation.

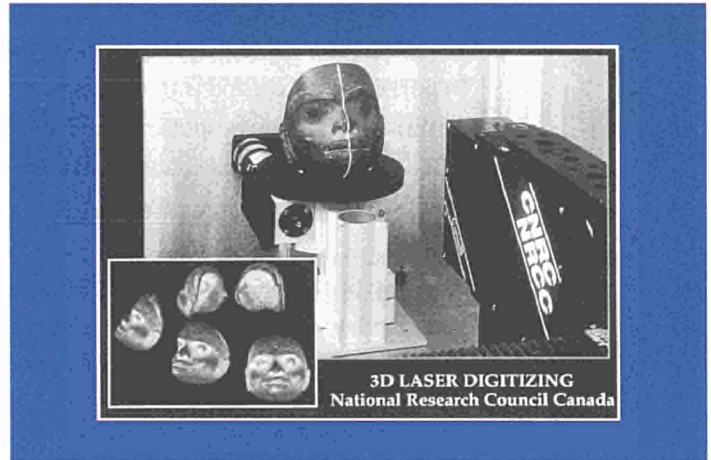
I look forward to working with my colleagues over the years ahead on the applications, particularly in the areas of libraries, museums and galleries. Thank you very much.'

Dr L. Brichetto Moratti

'I will try to say what could be a new role for the public television services in the building up of this new information society.

In fact, it has been said before, but I think that it could be of interest to say it again. Liberalization will increase opportunities to users but, in fact, there could be a risk of unequal access and a risk of information illiteracy. I think that in this framework the role which could be played by the public television services is important, because it can be a sort of living guarantee rather than an anachronistic protective measure to balance the market drives and the needs of the society. So I think that we can try to find out in which areas we can help the building of this new information society, and in reality I find three possible ways and three possible areas.

Mr De Benedetti has mentioned before three areas: the individual, the business area and institutions. I think that the public television service could be a link between these different needs, and this is an area in which our public television services could play a leading role.



There is another area in which I think that all of us in public television services must think of a new kind of approach. In this international cooperation I think that we could be of some help in order to build on this new information society, giving a more systematic approach to the international approach on some new services and new products, new programmes. The idea is to create a sort of databank to make all the new ideas, all the new programmes, all the new services flow which can help to create a better society and a better quality of life.

Moreover, it is the approach of the concept of the global society which must preserve the specific cultures of different nations and different peoples, and in this way I think that a new approach, new cooperation, new collaboration, could be of some use. These three different areas give rise to the idea of creating a permanent table of consultation of all the public television services which I think could help a lot towards creating this new information society, balanced, as I said before, between market forces and the needs of society.'

Dr T. Sekimoto

'I personally consider that multimedia means multi-information media combined with multitransmission media. Multi-information media is self-explanatory, covering

telephone, text, images, high-definition television and the wide-ranging areas to be covered by this.

Secondly, the multitransmission media are relevant to the optical fibre system, with satellite communications systems, and with radio. These are multimedia, composed of these two elements, and for this digitalization is essential.

On a personal note, in 1965 we developed a digital satellite communications system. That was more than 30 years ago — and I am personally aware from this experience that digitalization is going to be very important. I think of multimedia as composed of four components. One is networking. The network is very important. The second is the terminal. “Set-top box” is being discussed very widely, covering personal computers, word processors, CD-ROMs and facsimile machines, video-on-demand, applications and so forth. The “set-top box” terminal is going to be the second important component.

And the third one, which is more important, is something which has already been discussed, which is applications covering businesses, individuals, local government entities, national organizations, international institutions and so forth. Applications cover education which was already touched upon in the exhibition centre.

Our company, NEC, has on display multimedia conferencing by children, interconnecting with primary schools around the world. This is but one example of this application.

But the fourth element is very important — I would like to emphasize that here — which is information content, because information content is essential to appeal to consumers. Unless we can produce creative and attractive information content, we will not be able to do enough business in this area — attract individuals, businesses and government organizations, be it by images or data. The challenge for us is to develop just such creative information content.

In doing so, the comment that we have to bear in mind is about intellectual property rights. Certainly such rights should be respected but also too excessive respect of intellectual property rights would hinder the use by the users of various applications. When NHK wanted to obtain the copyright of intellectual property rights of the Beatles, John Lennon had already passed away, but Yoko Ono was the successor to his rights and NHK had to take a lot of trouble and time to locate where Miss Yoko Ono lives. I think in this sort of example we can see very clearly that we should strike a good balance between protecting intellectual property rights and using them in a smooth and effective manner.’

Dr H. Hultzsch

'I would like to add, very briefly, two elements to the discussion.

The information society, to my understanding, is very much related to the innovation society. Actually it is a society of speed, of competitive speed but also a society of fun, and I would very much add the word fun to what we are going to generate. But we all lack usage of these elements of the information society and its tools.

We, the world of management and politics, are actually classified in three categories. On our business cards, the class 3 manager carries his name, function, the company, the telephone number and the fax number — that is category 3. Category 2 carries, in addition, the electronic mail address — that is, let's say, more innovative. Category 1 carries, in addition, the video-telephone number. Those of us who have actually used the multimedia telepresence tool in our business or private environment know that the speed of consensus by visual communication is significantly greater than just using the now 100-year-old verbal communication mechanism. So we, the people who are responsible, need to promote the usage of information technology and innovation speed in our world through information technology.

The world is in this way categorized into four elements. I call them telepresence, telecooperation, telecommerce (that is where we get most money from, to make our welfare and our life) and, most important, regarding the social aspect, "tele-togetherness". With this tele-togetherness and the three other elements we are actually generating what we should call the global city, or the global metropolis. Certainly, we all believe that this will be accomplished only, I emphasize only, with competition and deregulation. But, we need rules, we need rules when we guide our automobile on the road — we need guidelines as to how this competition will be run. We also need fair competition to overcome inherited loads and burdens of the past.

To summarize, evolution has always been better than revolution.'

Mr N. Araki

'There was a major earthquake in Japan on 17 January and Kobe and the area surrounding the city of Kobe experienced a major disaster. Immediately after the earthquake, the telephone and telecommunication systems were paralysed. However, as these systems recovered, people became much calmer and settled. This demonstrated the fact that communication has a major meaning and significance for people's daily lives. Although major damage was suffered, there was early recovery of, for example, on-line systems in the financial institutions such as those of the banks, and this resulted in security or a feeling of security for the people in this area.

As we move towards the 21st century, we need to establish a seamless information network on a global scale by overcoming national boundaries and by cooperating with each other in order to overcome the differences of culture and language. Achieving greater access to information and realizing diversified communications will not only result in enriching people's lives but would guarantee solidarity among people based on the common values they share, especially under difficult circumstances. We have taken to heart the lessons of the disastrous earthquake.'

Dr E. Pascale

'The information society — the global information society — is a fascinating topic. It can mean a myriad of things if you use your imagination, but I think we have already entered into this new society.

What is it in reality? I think it would be very difficult to give a firm definition, but what I would like to do would be to try and bring into every place of work, into every home, information, images, data which can be freely exchanged by everyone. I think that is what the information society actually means.

Now, if that is the case, then I think the problems of standardization and interoperability are absolutely crucial — it is vital if this global information society is to develop and become a very widespread reality. In the United States, the national information infrastructure is working very hard on this, I think, and I feel the United States are a few years ahead of Europe. I think we in Europe need to catch up. I am not saying it is wasted time but we are somewhat behind.

So, I would like to suggest that we in Europe establish a task force in order to try and align our standards of exchange of information, as we have done for computers, and establish some kind of forum with the United States and Japan, because I think that is the best way of actually achieving this information society.

Let me just mention GSM telephones. This actually was achieved by the manufacturers, the operators themselves. It is extremely successful throughout the world and this was done by people who for years have been involved in standardization.

Now, the convergence of this information society with developments in telecommunications has created new problems and we need to address these problems by working even more on the problems of standardization and interoperability.'

Dr H. von Pierer

'When looking at demand, I think we realize that it is the citizen who stands centre stage. What does he expect of the information society — which, at the moment,

remains a pretty abstract term — one which also inspires him with concerns and fears, fears about the future, fears about employment and jobs?

Therefore, I believe that it is necessary that we take steps very rapidly to allay those fears and I think the best way of doing that is via the pilot projects which are planned. I also believe that these pilot projects are necessary because in Japan, in the USA, in Europe, in the individual countries in Europe, we know that behaviour and reactions will differ. We are looking at different cultures, we are looking at different histories and because of this wide diversity it is necessary that we initiate these pilot projects at various different places. Something that will give the man in the street something to go on, something to work with.

I am not thinking, first and foremost, about video-on-demand, rather I am thinking about projects, in particular, in the world of health care. I think it is a quite incredible idea that a specialist in a hospital in the United States can examine an X-ray from a hospital in Italy, or France or Spain. If we can act in that way, if we can find solutions rapidly, then I think the information society will be accepted that much more quickly.

Other areas are links between universities and research institutes, or education — something that Mr De Benedetti focused on in his statement — education and training indeed. Therefore, it is important that we get such pilot projects up and running as quickly as possible.

Now Mr Spindler said that there would not be a single highway, rather there would be a whole series of them, but it seems to me that although we are constantly using the term “highway”, that may be a little bit misleading. That we cannot have, to use a different metaphor, a future where we create a whole series of different railways, railways that could take German trains in Germany but French trains in France and never the train would meet! We need to ensure that they do link up to one another properly.

So, as Mr Pascale has said, we must move rapidly on to interface standardization. We are not saying that this is something that has to be laid down by the State — on the contrary. Nor do I feel that we need to invent new bodies. We have bodies that have done work on this in the past: the GSM example that Mr Pascale quite rightly mentioned. We have ETSI as well. Therefore it seems to me that from this conference we should issue a call for as rapid a standardization of interfaces as possible.'

Theme 2:

What are the responsibilities and tasks of public authorities?

Chairman

'Now, I wish to address the responsibilities and the tasks incumbent upon governments — the public powers and public authorities. You have, to some extent, already pleaded in favour of deregulation, allowing competition to apply in full. Obviously, respecting the laws of competition would need to be addressed as well. I have seen recently that certain accusations have been levied against certain companies on the grounds that they were exercising a monopoly.

But at the same time, together with deregulation, you want to have proper rules established to allow for the protection of privacy, proper intellectual property rights — somebody mentioned copyright — I think we are getting on to very difficult ground there — but also the need to provide proper protection for young people in terms of what can be seen and what kind of access can be obtained via these information technologies. So I would be grateful if you could go into this dilemma of deregulation on the one hand, and establishing rules of the game on the other.

I would like to put a question to you which crops up quite often which is sometimes used as a way of opposing competition and deregulation. I am going to put it in very succinct terms.

Who is going to pay for access to basic services being available to everyone at a reasonable price? Now that leads us on to the definition of a universal service and the difficulties encountered in certain countries. There have been some successful operations in some countries, some of the countries from which some of you come. So this is extremely important. Many of our citizens, and our politicians indeed, are opposed to deregulation because they feel that universal services, public services, will no longer be guaranteed to everyone at reasonable prices.

So I think this is the challenge to you today. We would like to hear what your views are on this. I do not want to play devil's advocate but we do have some experiences in some countries which have been successful, and I think ministers will be all ears to hear your views.'

'As was mentioned earlier by Mr Araki, a disastrous earthquake was recently experienced in Japan. The damage to our communication facilities was quite bad but we are now putting in an all-out effort to restore those facilities. During the month of January we were able to restore some services for all the residential subscribers covering some 100 000 lines for temporary usage, but from now on these restoration efforts will proceed in accordance with our long-term, fully-fledged restoration plans.

With respect to the development of [global information infrastructure] GII, which of course is the theme of today's meeting, I believe that it is important for each country first to develop its own [national information infrastructure] NII, and based on this viewpoint I would like to share with you Japan's approaches to NII development to set off the discussions for this part of the session.

Japan, having established a vision of realizing an advanced information and communications society, considers that it is important to develop infrastructure and applications in a synchronized manner, and for the government to create a favourable environment, and for the private sector to make the necessary investment. We believe that should be the division of responsibilities or roles in establishing such infrastructure facilities. In building the basic infrastructure, our efforts to develop an advanced electronic transmission network through digitalization and fibre-optic installations have almost been completed, and we believe our next focus is to concentrate on the enhancement of subscriber networks.

In the coming era of multimedia communications, all media information will converge and quantum leaps in the volume of information communications are expected. Therefore, I believe the development of advanced subscriber networks should basically proceed on the basis of installing optical fibre all the way up to the user's premises, because this allows for the ability to increase transmission capacity by factors of two digits or even three digits. I think, therefore, that this kind of infrastructure is clearly different from traditional infrastructures, such as roads and railways and I would like to call this a kind of "super" infrastructure. As you are aware, apart from copper, of which the supply of resources is limited, the raw materials needed to manufacture optical fibre exist in almost limitless quantities throughout the globe, and therefore optical fibre is also superior as a solution from the standpoint of global resource preservation.

So using optical fibre communications as the basis for communications and also drawing on the lessons we learned from the great earthquake, our challenge ahead is the development of integrated subscriber networks which can accommodate various kinds of media, including satellite and mobile.

Now, with respect to the government's role in developing optical systems that will constitute the basis of subscriber networks, the government plans to provide official support through such new programmes as low-interest loans to private companies during the preparatory period until the year 2000. Such incentives will encourage early nationwide development of an end-to-end optical system covering the entire country before the ultimate target date of 2010.

We at NTT also plan to promote the development of these nationwide optical subscriber networks by the year 2010, and, as our immediate target, we plan to introduce these systems mainly to business districts by the year 2000, thereby achieving a 20% optical coverage throughout the country. An important factor in proceeding with this plan is achieving maximum cost reductions in optical subscriber systems, and R&D activities for this purpose will of course be very important. I believe the results of these activities can greatly contribute to the enhancement of communications services in developing countries where serious efforts towards the development of network infrastructures are not starting.

Let me now offer a few words on the development of applications which constitute a second pillar in promoting NII development. Perhaps the most fundamental caveat in developing applications is to avoid scattered uncoordinated activities by those players engaged in providing multimedia services, namely terminal equipment manufacturers, information-providers and communications-carriers like us. Instead, we should have united and coordinated efforts which involve users as well, and such efforts will promote the mobilization of shared ideas and combined wisdom. It is important for the government as a big-scale user with a lot of impact to promote information communications in public services, and for the government to develop and introduce such applications.

Let me share with you some of the specific activities going on in Japan. We have already initiated some test beds to promote the development of applications. First, as a public trial project, we have a government and industry cooperative project for a broadband ISDN pilot test. We have another experiment which is examining the convergence of communications and broadcasting. Furthermore, there are experiments in enhancing the scientific information network to promote the smoother flow of scientific data and information in Japan. Now on the private sector side, we at NTT, since last year, have started a joint trial use of multimedia communications as a test bed to carry out various studies with our users and also with terminal equipment manufacturers and information providers. These are built around three frameworks — high-speed computer communications, multimedia for general use and also CATV video transmission.

So these are the three frameworks that we are working on and we have national research institutes, universities and private sector companies, a total of 127 organizations carrying out or participating in this nationwide project. We have, I think, distributed to you some more detailed information concerning these projects, which I hope you will read at your leisure.

Concerning the creating of receptive environments for these various applications, I believe that there are three major challenges. One is reviewing the regulations and systems or institutions. Secondly, guaranteeing open access to networks and thirdly, protecting intellectual property rights.

It is essential to review thoroughly existing regulations and institutions or systems that are not amenable to the introduction of new services which are developed through various new technologies, which converge communications and broadcasting, and also new applications in fields such as remote medical diagnostics and distance learning that should be promoted. It will also be necessary to create appropriate standards to ensure intercom activity and interoperability to guarantee open access of networks.

Also, appropriate steps must be taken to protect intellectual property rights in ways that will maintain a balance between the protection of owners, on the one hand, and unfettered exploitation of such knowledge on the other. From the standpoint of protecting users, ensuring both personal privacy and data security are really fundamental issues in building open information communication networks. In our company we are aware of these issues that I have just mentioned, and we have just started to hold more concentrated or focused discussions. I believe that concrete discussion and studies in international forums such as this are also very important.

Lastly, there was the question raised by Chairman Delors concerning the responsibilities and tasks of public authorities, which is the theme of this session. This is, of course, very important, but in addition to this, I would like to add that the experience we have accumulated in preparatory activities aimed at NII development in Japan, and the following two points are also equally important, as I noted earlier.

The first is to establish a national vision considering the needs of each country and, based on that, to identify and share an international vision of GII. Also, the second point I would like to mention is that this effort should involve integrated and synchronized development, both infrastructure and applications simultaneously, and based on this shared vision of GII objectives I think we must all work together in cooperation.'

Mr P. Bonfield

'I am speaking on behalf of myself but also for Sir Ian Vallance, who was originally scheduled to talk here this morning. He is unfortunately ill, so you are going to get a mixture of somebody speaking from the computer industry and somebody from the telecommunications industry. So at the moment I am converged.

I think the first thing I would like to say is that in Europe it is very clear that the liberalization of the telecommunications regime is really fundamental to building an

information society and building it very quickly. I think that we decided then that time is of the essence, and I agree with Carlo that we are really facing a revolution. But I think that, as with all revolutions, they clearly cannot be centrally planned. Governments really cannot control revolutions and they cannot be accurately modelled — they must be market-driven. And it struck me as being very strange when I was looking at this.

Fifteen years ago the idea of market liberalization and allowing the market to drive our telecommunications businesses was really quite an odd thought, because then the clear view was that telecommunications costs were definitely reduced best by vast economies of scale and therefore monopolies were definitely the best way to do it.



We got that pretty fundamentally wrong, and that was only 15 years ago, so I think we have got to figure out now what we could get fundamentally wrong at this time. I think that overall we have got to be very clear that we must let the market drive it, and not be too fixed in our ideas.

Secondly, of course, I think that a lot of these things should be driven politically in neutral. We are talking about things on a global basis and they must be put together on a consistent base, but not

on a political base. It is also, I think, very clear that technological progress is something that we cannot foresee, and I agree with Mike Spindler.

You know the situation now of everything being digital, which is going to produce applications that we do not yet know about, and we cannot get into a situation in which any of the regulations that we put in place now stop that innovation in the future. We have got to be as open-minded as we possibly can be, to allow some of these new innovations to take place over the next five or 10 years. So regulations, I think, must not be used deliberately or otherwise — because sometimes we do not even know what we are doing when we set them — as a barrier to either trade in services or the creation of innovative services that we cannot even yet perceive.

We have also clearly got to make sure that the access is on a non-discriminatory basis. I think that a lot of the work that has been done so far proves that this can be done. A lot of the activity now in the World Trade Organization is being pursued to that end and they have got a pretty tight timescale — I think by the early part of 1996.

I would like to re-emphasize that the best way to drive this revolution forward is for governments to understand that in the end it is the customer's choice that is the major driver in all of this. I think that we have only to look around the table here or ask the citizen in the street in Tokyo, or Frankfurt, or in London, or in New York what they want. They want choice, they want competition and they want it to be cheaper; and I think that what we have seen previously is that choice does mean competition, and competition does mean economy-scale, and it becomes much more cost-effective for everybody.

The opportunity on the open access I feel is less of a concern than maybe some people think. Experience in the liberalized markets in the world has shown that the opportunity for access has been maintained. You can now have equally good telephone systems in Scotland as you can in London, so it does mean that if you push forward on liberalized services, as long as the regulator is efficient and outward-looking and is looking towards the customer, that type of service can be provided and people are not locked out.

The final thing, and I agree with what was said before, is that a lot of people out in the street do believe that this new technology could be a job-killer; and I think that we have got to show everybody that in fact IT does create jobs. It is true — I think of Carlo's numbers in the United States and elsewhere — we can now show people that this revolution will create jobs. It is going to be different, there is going to be a lot of change but it will fundamentally create jobs.

And then I suppose my final thing — if the governments get all that right — that they do regulate, if they make sure there is open access, and that they keep a light hand on the regulations so that they do not kill off this innovation — the final thing is that investment in new technologies improve efficiency. I support, as most of the business people around here will probably agree with me, that all of our governments cost too much money, and they should reduce the cost of running the governments by investing in productivity tools, which is what we do every day of the week.

So I would expect that the governments not only can operate as the regulator and the controller of the new efficient market but must embrace this new revolution themselves. I would suggest that they all set themselves a task of reducing the general cost of administration by 10 or 15%, which is what we all do every year, pass that on to business and the consumer in terms of lower taxes, they can then go out and buy all this new stuff which will increase the demand, and this would I think be a very good step forward which is relatively easy to do. So these are my observations, gentlemen.'

'The information society first includes communications networks, information appliances, information in creative content and software in applications. The market-place, rather than government planning, will produce the broadest selection of high-quality, low-priced, innovative products and services for the GII. Broad market participation must be the goal — market participation across the industries and national borders without restrictions based on national origin.

Our call for competition in open markets is not rooted in the traditional private sector embrace of free market theory. Our views spring specifically from the transformation of the industrial age to the information age, with its new requirements for creative freedom, private initiative and extraordinary risk-taking.

Development in new technologies is taking place so rapidly and dramatically in the telecommunications and computer sectors that future attempts to control these industries through government planning and tight regulation will seriously impede the GII. Within the computer industry, the lightning speed of technological change makes a mockery of long-range, centralized planning. For example, as you all know, digital computer power relative to price is increasing tenfold every three and a half years. Who is wise enough to predict and plan the future in this volatile technology environment?

Competition is the driving force for innovation. Liberalization of the telecommunications sector is only one of the essential steps. Our discussion is not only about telecommunication. As many other industries converge for the global information infrastructure, including computer hardware and software, cable television, cellular and the content industries, we want to make all of these industries more competitive. We must be careful not to extend traditional regulation of the telecommunications industry to other GII sectors such as the information, computer and software industries.

We stand on the threshold of unprecedented improvement in all aspects of people's lives and for society. The key to that progress is information and the GII will be the primary platform for the information age. I believe that countries that do not welcome competition and open markets will cause a new and tragic condition — I call it information starvation. While maybe not as deadly as malnutrition, it will stunt: it will stunt children educationally, it will restrict adults economically, it will limit patients medically, it will damage local businesses competitively and constrain people culturally.

By contrast, those countries that allow demand in their nations to be served by the global market-place will discover that their nations and their businesses will become more competitive, their people will become better educated and their workers will become more capable of participating in a global workplace.

Now governments obviously have important roles in the GII. Peoples, and institutions, must trust the GII and they must feel safe using it — dealing with the issues of intellectual property, privacy, security, for example, will require updated laws in our respective countries, and intergovernment leadership and cooperation will be essential. My colleagues and I, from the private sector understand our responsibilities to create world-class products and services at reasonable prices, our responsibility to expand our markets and generate investment capital — and that will produce the GII.

I urge everyone here from the private sector to work in partnership with your own governments, as needed, to help create competition and open markets. This is the only sure path to deliver the real benefits to real people in every corner of the globe.'

Mr M. Roulet

'Each of us sitting round this table is only too well aware of what is at stake with information technologies, aware of the remarkable opportunities that they represent for our countries. For the first time in industrial history, the potential of IT far outstrips our capacity to use it, so how can we speed up the process of fully using such potential? How can we harness these capacities to our technical, social, cultural ambitions?

Now, as several speakers have stressed, it is clear that the various players, the investors, need to have some sort of stable and foreseeable regulatory framework — one, moreover, which will encourage them to invest. It is clear, moreover, that in a systematic and organized way, market forces must be set free.

And with that in mind, I would say that I believe that the European Union is approaching this in the right way. First of all because the European Union has decided on total deregulation. Perhaps I could mention in passing that it is the only group of countries so far which has adopted this principle of total deregulation with a timetable, with a framework, and at a pace which is in the process of taking shape.

The problems are very clear, of course. Interconnection, interoperability, the means of awarding licences, the problems of a universal service that you, Mr Chairman, underlined. The level at which this would operate, the mechanisms that would be used, and I think the most recent proposals from the Green Paper represent the right way of addressing these very complex issues. I believe that the pace of change is also appropriate, given the complexity and diversity of the Member States of the European Union.

You have asked the question, however, about which regulatory mechanisms should be set in place. I would say, first of all, that these mechanisms should be focused on what is actually necessary in order to provide for equitable and fair competition. We are looking here obviously at problems of interconnection and also the

problems of bottlenecks. We believe that neither constraints nor artificial barriers should be thrown up in order to compartmentalize the various segments of the global market, what I mean is, no barriers between the telecommunications market and the audiovisual market, for instance.

As we can see, technology means that on the same networks now you can disseminate services which at the moment are marketing through different networks. Since this is now possible, I think it would be most harmful if we were not to take full advantage of it.

Then, another hallmark of these regulatory characteristics is that they should not prevent the necessary strategic restructuring of the players on the market. These alliances, these cooperative ventures, are not just between players in the same area but also between protagonists in different areas — industrialists, operators, service companies, content-providers and so forth. Finally, these mechanisms will clearly have to be flexible, adjustable and to a certain extent pragmatic.

Now, Chairman, I am sure that you, like myself, will have been struck by the fact that in the first part of the discussions today on demand, we heard a very wide range of statements, but it was difficult for people actually to tie down what such demand would mean in practice, above all, if we are looking for solvent demand.

I think, therefore, it is clear that we want to avoid ending up in a chicken and egg situation. We need to see to what extent we can adopt an approach from the side of the networks and the infrastructures.

We all recognize that optical fibres, ATM-type technologies are, in the medium term, probably what the basis will be for these new services, which is why we need things like the ATM pilot project, the forum for the year 2000. So I think we need steps in order to promote this type of initiative. I note, for example, that the full framework programme for the European Union has also set space aside for this sort of initiative. Proposals have been made — I do not need to repeat them. However, even as of today, I would underline the possibility of what can be done by using ISDN-type systems.

Now reference has often been made to the French videotex system, Minitel. To my mind, commentators have tended to concentrate too much on the terminal, whereas the basis of it is the transpac network. Thus, in the European Union, we do have the ISDN medium-band system which, with personal computers, already provides for a number of new services, some of which are on display in the showcase in Brussels today.

I would also stress the importance of bringing services together in such a way as to commercialize them, invoice them, via platforms. If you take the French videotex system, I think one of the reasons why it has been so successful is the kiosk system

which provides for invoicing some 22 000 services via a single platform, and I believe that these platforms are one of the keys to the future.

Finally, it is important to stress the need for partnership between all the protagonists. The telecom operators, the industrialists, the service societies, but also, if I talk about partnerships, I am thinking in terms of a newer type of partnership between content companies and operators on the container side. This is new, but it is clear that it is an area where partnerships must be found so that together, in a pragmatic way, we see what the best way is of providing such services.

Finally, Chairman, let me stress the need for standardization. By that — obviously I am thinking in terms of technical interfaces, notably interfaces which will leave systems as open as possible — I would also stress the importance of functionality and ergonomic standardization.

Reference was made earlier to GSM which has, I think, been a resounding success. France Telecom was very much involved in that, in particular when trying to develop interfaces which would make it possible to use subentities. However, users regret the fact that the keys for accessing the national system are different from those available to the industrialists. So on these earphones, on PCs, we need to come up with a system of keys so that if you change from one country to another it is that much easier for you to access the different services which are available there.

As we recognize that, quite apart from the demand solvency side, there is also a very serious issue of making these new services accessible to our populations at large: first of all, because we want to avoid a split society, but above all, because we want people to consider accessing as natural an action as possible, which is why simplifying the man-machine interface, improving the ergonomic side of things, adopting a universalist approach to ergonomics will, I think, hold the key to future success in this area and indeed, as elsewhere, the European Union, by its market size, could pave the way.'

Mr T. Miki

'From the standpoint of an industrialist, I would like to say a few words. As was mentioned, this information society aims at creating a high standard of living for people and also to enhance competition in the market-place. Therefore the important thing is that as the Chairman mentioned earlier, demand becomes a key.

It is critically important and the users create the demand, so users' interests come first. It is not the interest of the operators or the carriers, and I think this should be the very important starting-point and basic premise. In this information society and to promote this kind of society, users — any kind of user — should have the different kinds of information that they wish, any time, any place, at low prices and to be able to obtain such easily.

To put it more simply, as was mentioned in the standardization discussion, ease of use and low price — it boils down to those two elements. So users should take the initiative — the activity should be user-led.

And then comes the role of the government, the main theme here. In our country, Japan, the word “multimedia” is going around very much but nobody really knows exactly what that means. We do not see concrete forms of multimedia. What we see is that in the industrial area, industrial use, we see a lot of perhaps multimedia-like applications but in other areas, consumer areas, we do not see any.

So, the thing to be done is to divide this into three areas — public use, industrial use and then consumer use. I think we can divide this into three sectors and among them public use, where the merit derived from multimedia is largest. This public use should be the trigger to set off the activity in the other sectors and they can connect to the industrial use areas, which already, as I said, are active, and that in effect can lead to more activity in the consumer usage area. I believe that the governments of the different countries have a very important role to play to encourage that.

To make that possible, as I mentioned earlier, interconnectivity and interoperability must be secured. It is inevitable that we make sure that the information infrastructure is seamless. Therefore let me emphasize that interoperability, interconnectivity, are indispensable and are to be pursued in international harmony. We have the businessmen here in the round table, as I say, and I think of course the private sector should lead this activity, but then we do need the back-up support from the governments of the countries. Such support is extremely important.

Another issue is to have a good effective, competitive regime in place. A private-sector-led activity with healthy competition is important. From the industrialists' side it is competition, from the users' side it is their ability to make choices — I think that is what the overall picture should look like and in that context competition is important among the private sector, but again government has a role to play to create that kind of competitive environment. Again international harmonization should come into play to create the favourable kind of environment for competition that I just referred to. Fair rules must be made. Deregulation should be promoted to avoid monopoly and oligopoly. I think that would lead to promotion of competition. Also by having flexible regulations we can accommodate users' needs.

Of course regulations will change, depending on what the technology and the market trends are. We see specific examples of that trend in the United States and we do need minimum rules or regulations — of course the basic principle is perhaps no regulation, freedom — but perhaps flexible minimum regulation is required to create the kind of favourable environment that I am talking about.

Also there are tax systems and other institutional systems that must adopt information systems more actively, and again I think government has an important role to play in these respects as well.'

Mr R. Phillis

'Our theme in this session is the role of public authorities and I hope you will allow me to expand that to make a few comments, not simply on the role of government, but also on the role of public service broadcasters. Others have already mentioned, in this session, the importance of government in allowing a situation where competition can be fostered, where access can be ensured, where compatibility of systems is important and, indeed, reminding ourselves of the importance of maintaining standards of the services that actually are made available. So I do not wish to comment further on those. I would simply endorse the remarks that others have made.

My second point, I think, is to emphasize the importance of government as major users of the superhighways, particularly in the fields of education — a point to which I wish to return — in health and in social security. Obviously governments in all of the nations represented here have a very major role in creating the infrastructure that we are referring to, and I wholeheartedly endorse Dr Pascale's suggestion that at least within the European Union we must tackle the issue of having a common information infrastructure.

But if I may, I shall return to the issue of content-providers, because I believe that broadcasters, programme-makers, whether public or private, and publishers, have a very major part to play. I agree with Dr Moratti that public service broadcasters have a very particular role to play across all types and ranges of programmes, but especially in the field of education — and whether that is the educational needs of schools, colleges, universities, whether it is educational or training needs in the workplace, whether it is learning and self-development of the individual, there is a very major input to be made by the content-providers. I think the opportunities of the superhighways, in terms of interactivity and self-learning, are huge. But there are two problems, I believe, for government.

The first is to address the question of avoiding the emergence of information-rich and information-poor, both within our own countries and our own nations and, secondly, on a global landscape. Clearly the opportunities are huge, but how do we ensure that access in educational terms to this information is made available to all, both within our own societies and across national boundaries? There is a question, I think, as to the extent to which our governments are prepared first to cooperate and second to ensure adequate funding. But cooperation between broadcasters, publishers, programme-makers, is also essential.

Within Europe, I am delighted to say, some of the public service broadcasters are cooperating in the field of radio networks and the possible educational and training

benefits. But if I just comment on television: in Britain we do have an established Open University which broadcasts by radio, by television, and which is supported by printed publications. Some of us in Britain are wondering whether the concept of educational networks could not be extended more widely, not simply within Europe, but to wider audiences still — which finally, Mr Chairman, brings me to a comment on the importance of protecting our individual and national cultures.

I know there has been proper discussion about whether quotas or whether protectionism is relevant — they are areas of proper concern. It is, however, my own very strong belief that the way in which individual, national, and cultural identity will be preserved will be by ensuring that there is adequate investment in local production, whether that is in printed material, in radio programmes or in television services or multimedia interactivity. I think we have a responsibility to ensure there is adequate investment in local production, in the services that may be made available to the information superhighways. I happen to believe that part of that is ensuring that there is adequate funding for public service broadcasters, in particular types and areas of programme production.

But one thing that we do know is that as the superhighways are built, there will be a huge demand for content and there will be an even greater demand for quality and relevant content in the programmes and services that are made available. We can fulfil that need. We can perhaps enrich each other's cultures by the transfer of such content provision. It also happens to provide a very strong export opportunity for those of us that are able to sell and export our programmes and our services, not simply within Europe, but clearly on a worldwide basis.

Mr I. H. Asper

Outside of the comments just made by Mr Phillis, I believe I am the first private sector broadcaster to comment. Our company is a conventional terrestrial television broadcaster, covering networks in Canada, Australia, New Zealand, Chile, and we have other interests. I would like to say if I can be of any help on the subject the section you are on, that we in Canada are quite well along in this process, in the development of an information highway.

We have peculiar needs which are common to many of the members at the table — our needs being not only for information, education, but also some serious, cultural, social and economic needs because of the nature of our country. Fortunately though, we have been able to build a rather fascinating and effective information highway such as it is, while still having competition and achieving our cultural goals, the two not being mutually exclusive.

Content is what we are concerned about and I would like to address those who think in terms of the international superhighway — to you, Mr Phillis, who commented on the urgency of relevant and local content on the highway. Of course it is something very dear to the hearts of Canadians and New Zealanders who fight

in a sea of signals from above to retain some indigenous view of themselves, because we are still in the process, in many of those cases, of nation-building, bringing ourselves together. But the subject we are dealing with now, and I am glad to address it, is the role of government.

I think we have a tendency to overestimate the consumer demand for some of the toys, some of the applications that all the technology can create, but that is the risk of those who want to provide those services — it should certainly not be governments.

My concern, Mr Chairman, is that our political leadership is both behind consumer thinking and behind technological capacity. It is not unusual for governments to follow rather than lead, but in this case governments, I think, should be encouraged to step forward and recognize that they are trying to govern in a communications world, trying to regulate a world which no longer exists, as I think some speakers have made reference to earlier. And so I would encourage this Conference and you, Mr Chairman, in your report, to begin the process of developing an international agenda for addressing the role of government.

How can we create this infrastructure, this superhighway in a sea of conflicting, and a nightmare of complexity, regulation and law? Obviously I think we should all — certainly in the private sector we would, I think — encourage governments to revisit their limitation laws on foreign ownership, because we are going to have to invest in each other's components of this highway, to massage, to create the cooperation, the environment of cooperation that clearly must exist, unless we all close our borders, which we do not want to do.

Foreign ownership restrictions have been an impediment to the advancement of the highway. Competition in carriage to ensure diversity as we in the smaller countries have had to do, to ensure that our cultural goals can be achieved, one way or the other. And yet, I think internationally we should be considering in the law-making side, a revisitation of the diverse voices speaking to each other — what is the reasonable restriction on concentration of ownership, cross-ownership of the media. The two are in juxtaposition and I think the G7 can give leadership here.

Clearly, the unarticulated aspect, but one very much on everybody's mind here, is an equitable distribution of jobs that will flow from this new technology. I certainly agree with the speaker who said that the Europeans should not be concerned that the introduction of new technology will see a destruction of jobs, but see where the new technologies have been de- or re-regulated, to talk in 21st century terms, have created more jobs, not less.

The classic example is New Zealand, the smallest country — one of the smallest countries in the world — which nearly went into bankruptcy in 1985. It deregulated completely — and has created an enormous percentage of new jobs, enormous new taxes, but quite successful. You should really, Mr Chairman, invite

our colleagues to look at the economic revolution that took place in New Zealand when they discovered that it was okay to have 100% foreign ownership of communications, telecommunications, broadcasting, radio — and they did not turn into Australians!

Mr Chairman, I do not want to take too much time but I do encourage the thought to be left that all the infrastructure components, the legal, the regulatory ones, mean the redefinition of copyright, because copyright is not just something that belongs to an author or a performer. Copyright now must be internationally redefined to include the content-scheduling, the content packaging, which the law does not currently recognize.

The desirability of hardware universality will require the negotiation of international treaties and those should be recommended, so that the consumer of country A does not wind up spending thousands of his currency on obsolete equipment, because universality and competition changes that. Indeed, we should also encourage the revisitation of all of our laws which are aimed at fair competition, but in fact which prevent it. The competition laws must be revisited so that people can do business internationally in this area without fear of breach of law.

And finally, with the greatest of respect to those who I know here are State broadcasters, one must bring into question — we private sector people have to ask — why are we required to compete against State-owned commercial content providers when we pay the taxes that subsidize the billions that go to these organizations? And I do not say that with malice because we are doing very well, thank you very much, but, I do think we could do better.'

Lord Blakenham

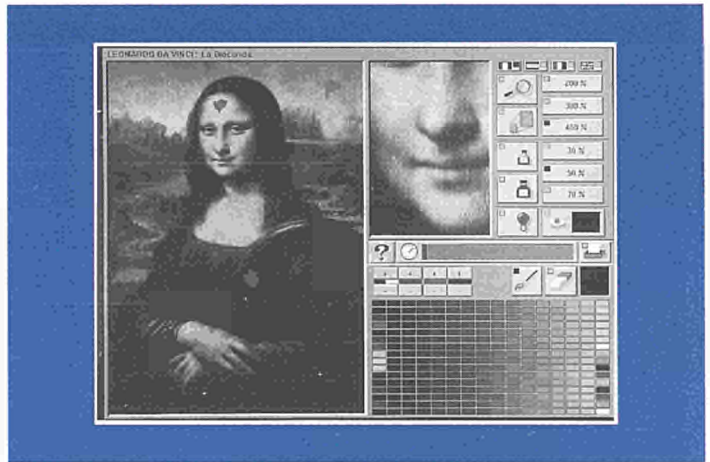
'The Economist reminded us today that in the early days of the motorcar it was necessary for a vehicle to be preceded by a person carrying and waving a red flag. This did not exactly unleash the full potential of the motorcar, and it was a situation that persisted for a number of years.

I think that rules are needed, but they have got to be as simple as possible and on the side of liberals. They will need to cover, as Mr Asper said, media ownership and cross-media ownership, and at the moment that is illogical throughout the whole of Europe. They have obviously got to cover intellectual property rights and copyright for which new measures of protection will need to be established, and this is not an easy question, because how can off-shore repackages of other people's products be regulated?

The manufacturing costs of the network pirates will be small. They will buy the data once, repackage it once, and resell it as often as they can. What is more, they will be very mobile. They will not have stocks, there is no need for even a ship with an antenna in the North Sea, and so there will have to be investment by the law

enforcement authorities in countries round the world and it will be needed perhaps on a similar scale, in due course, to that which is needed to detect and deter crimes against physical property.

The European Union, in theory, offers the kind of framework needed for the regulation of the information society, but ensuring its effectiveness in practice will mean adapting the European Union to the new media, not the other way round. Responsibilities for different facets of the media industry are scattered across at least five directorates of the European Commission, and this has made regulatory initiatives hard to implement and even harder for companies to keep track of. Greater centralization and coordination could be introduced but, as I have already said, I do not think that is the right route. The alternative way is to seek better coordination across the European Union by concentrating more resources specifically on the needs of the information society and promote closer integration of the different directorates that govern it, and I suspect this is exactly what Mr Bangemann is doing. So I would very much support that.



Finally, I would like to agree with what people have said on education. To enable children to get to grips with the information society, we must educate them in an information and multimedia environment. We have been talking about the classroom of the future for many years, but almost everywhere that future is still far too distant and unclear. Education companies have the capabilities to produce and deliver multimedia and online education material but school systems worldwide lack the funding to adopt them. This means that it is the richest schools and the richer parents that actually buy the equipment, and those who are dependent on a State school do not have it, so I am sure government spending on education is going to be very important to avoid the two-tier society which has been referred to.

So, in summary: keep the rules simple, cover media ownership and intellectual property rights, enforce those regulations and spend more on education. Thank you very much, Mr President.'

Theme 3:

How to organize international cooperation at a global level

Chairman

'We move on to the next theme: international cooperation. This was referred to implicitly but not explicitly when we talked about the rules. We had to ask whether it should be regional, national, or whether we should be going immediately to international level.'

Mr L. R. Wilson

'The assignment that you provided me was to discuss, and I quote: "How to organize international cooperation at a global level" — in five minutes! No five-minute discussion, I might say, could attempt to address all of the considerations here, let alone provide a road map. At the end of my brief remarks I will, however, pose four questions for us to consider.

As a businessman I am confident that we can readily agree on the need for a more open, less-regulated, market environment as the best catalyst for the investment and infrastructure required to provide the broadest possible choice and range of services for consumers. Equally, we recognize that sensitive policy and social issues are involved — principles of universality and privacy, concerns about intellectual property, cultural content, encryption, interoperability — just to name a few.

Following our discussion on policy and regulatory issues, Mr Chairman, however, one might well ask how much, or what type, or form of international cooperation would be necessary if the role of national governments were indeed to be less, rather than more, interventionist. The dramatic spread of Internet now accessed by more than 25 million cyberspace cadets is just one example of what is happening in the absence of regulation. No central control, self-policing, a fully-distributed network. Anyone with access can provide or receive virtually any content, any service, any time.

As a practical matter, however, I believe that we will, in fact, need to push proactively international agreements. Arguably, therefore, the task ahead will call for an unparalleled level of international cooperation. At the moment, individual countries

or groups of countries such as the European Union are wrestling with establishing their own policy frameworks for telecommunication at their own pace.

In organizational terms, Mr Chairman, the question you posed, therefore, is how to ensure the harmonization of these national deliberations and national policies with global considerations. There is much important work already under way, for example, on trade and telecom services at the WTO and on standards and spectrum allocation at the ITU. The analytical work of the OECD on competition and regulatory policy and on the effects of information technology on employment can also be extremely valuable.

Multilateral approaches are essential, but multilateral institutions do not build global infrastructures — they harmonize the rules, they create the policy environment and seek to establish an appropriate and level playing-field for private sector builders and service providers. But multilateral organizations cannot do these things in a vacuum. They need specific goals or objectives, and they need leadership. We need to ensure that in their deliberations they keep their eyes on the needs of the information society.

We are not looking for bodies to regulate or control every move along the highway. Rather, we in private enterprise want a set of coherent and consistent ground rules which will enable us to build the global infrastructure. Investments require certainty and predictability.

In the first instance, therefore, organizational success requires a clear statement of purpose. The core principles and the pilot projects emerging from this conference are an important starting-point for the development of broader international cooperation. But we need to go beyond principles — we need to reach for the highest possible degree of consensus on the goals to be achieved and not a minimal floor of tolerance.

My first question, therefore, Mr Chairman, is: can we agree on such a statement of purpose or goals to provide appropriate guidance to multilateral organizations? If the principles being discussed at this meeting are endorsed by the G7 leaders' meeting in Halifax later this year, as suggested by Mr De Benedetti, that will certainly help give focus and priority to the organizational effort.

This leads to my second question. Are there other ways in which the urgency or priority of the task could be asserted? Existing international organizations such as the ITU, the WTO and the ISO have the international membership, the mandate and the resources to work towards greater international cooperation at a global level.

My third question, Mr Chairman, relates to their ability to achieve progress. Should these existing multilateral institutions be strengthened, better focused, or streamlined to better coordinate the effort?

My fourth question, Mr Chairman, relates to how we, as businessmen, can help ensure that the necessary priority is sustained and progress is achieved in these international cooperation efforts, and that we do not end with more, rather than fewer, barriers to getting on with the job. In other words, how do we follow up to what is taking place here today? Should we, as businessmen, consider establishing any special mechanisms to monitor or prod the process? Should meetings like this be repeated on a regular basis?

Answers to these questions and others will help determine how we organize international cooperation to ensure that private enterprise can drive the development of the global information highway. What is certain, is that the potential benefits are enormous and warrant the strongest possible partnership between governments and the private sector.'

Mr E. Davignon

'I think the first remark that I would like to make is — and I think it is significant — that to my mind it seldom happens that one begins discussing a question before squabbles arise. I think it is a very important occasion where we are discussing part of the unknown because we are so convinced that it is, as many of us have said today, of a revolutionary nature. In our own capacity as responsible leaders we would be absolutely stupid not to try to decipher what is in front of us. We know it will be fragmented, different, but it is absolutely essential that we do not let it become contentious as long as we can discuss it. It is quite seldom — because Carlo said that we all know that a defensive strategy is the wrong one, but it is usually what we always do — I think, basically, because technology has shown that it is global by nature, and the Internet example has clearly indicated that technology knows no boundaries.

The second remark that I would like to make is that time is short. We all know that there are underlying disagreements and great difficulties, and you have mentioned some of them — but I think it is possible to deal with them as long as we can have an equivalent development in our areas of the world. If there is a big difference between what happens in North America, the European Union and Japan, we will be forced back to the traditional way of trying to deal with these problems, which has not been a total success in the past, as we well know. So, what is the framework and what should we try to do?

My last caveat is that, after having accepted that we are dealing with something new, we absolutely must avoid trying to go back to what we already know, and trying to organize from there. That is our big challenge and I think that we must recognize it. So while we all agree that we do not want more regulation but less, it is really basically about how we try to outline the framework which will be conducive to facilitating the developments which are required both at the level of the State, at the level of the people, and at the level of the industry. I think that is an essential point. So I totally agree that if we do not set out what our goals are, we will, I am

quite sure, be sidetracked by all the details before we really try to establish what we want to do.

That is why I still prefer the concept of an information society to a more limited concept of the infrastructure. There would be no information society without infrastructure, that is for sure, but if you only debate infrastructure problems I think we will get it wrong at first, because I am not sure yet that we have the architects who decide what is absolutely essential at the moment. I think we could lose all the elements of the social aspects of change which, if we are not extremely careful, will impede the speed of development that we require. So certain goals — and I believe that at this stage we can establish simple goals — will be difficult to implement, but they will keep our thinking in line with what we want to have, and I think that is essential.

Secondly, in these circumstances, leadership is of the essence. If we really want to be absolutely sure that all the questions have been properly studied in detail, that the risks are being assessed, then we will certainly not achieve any of our goals. So what does leadership mean? And I think here we have to assess what the actions are where leadership can be shown by the different participants in our challenge. Really at the State level? If there are not pilots at the State level in relation to education and these very fundamental elements, it will be very difficult to overcome resistance to change. Leadership at the level of internationalization? What are the minimum ground rules?

We will have complicated questions, foreign ownership and so on and so forth. We have to deal with that. We will not be active if we do not deal with interoperability and interconnectivity, dealing with what we are trying to achieve and not the theoretical problems which can arise. All the questions relating to intellectual property have to be addressed now and not when we run into them, because that will unavoidably create the barriers that we want to eliminate.

About existing organizations, I am not sure, because I believe that we need first to establish, at the highest level, what we want to do. International organizations, like all organizations, are only as good as the mandate they receive. If they receive no mandate, do not ask an organization of 140 countries to try to work out a compromise and decide what they should do — it is totally impossible. It is easy to blame them but it is not very effective when you are looking at what needs to be done.

My last point. What can business contribute? Business can indicate what would be helpful for it to make things go forward fast. Business may not agree on all points, but it certainly bears a responsibility to set out, not the agenda but its contribution to the agenda, and I think this should be informal. I think if one tries to establish a business forum which is formal it will fall into all the pitfalls of any formal organization. We will have secretariats which will write papers and will discuss with other secretariats and we will lose the focus.

And so I would simply come back to Mr De Benedetti's suggestion that our small organization of European round-table industrialists will continue our work, but it is quite certain that if we continue with our work our agenda will be too limited. It will be the agenda of the European Union. We do know that it is not without importance — we are not bashful, we are not full of complexes — but we know that we will miss some things.

So what I can do is simply to repeat what he said, that this small working group is open. If some of our colleagues from North America and Japan would be interested in participating in this, it is totally informal. What you write is not going to send you to gaol or get you into litigation of any sort. We would think it useful and if the G7 would feel that it would be useful to have a small action programme for Halifax, we will do it in all humility, knowing that we may be wrong in many courses but that it will be worthwhile to try to push the thing forward.'

Mr C. Sirois

'Yes, thank you, Mr Chairman. I would like to extend this question of international cooperation beyond the G7 to include developing or rapidly developing countries. We have spoken about demand, but for many of those countries demand simply means to be within walking distance of a telephone — far less sophisticated demand, then.

Now, I do not think we can talk about altruism here. That is not normally a characteristic of the private sector, rather it is by self-interest that we must develop this area. It is also not a question of there being insufficient private capital — that is not preventing the development of infrastructure in most of these countries, rather it is first and foremost a political problem.

What we see all too often is that where there is a clear regulatory framework, a foreseeable one, the money comes in wherever country lies, be it in South America, South-East Asia or wherever. Furthermore, I think the G7 countries can have a dynamic effect mobilizing, galvanizing those countries.

Above all, however, I think the best way of proceeding is via pretty specific, detailed projects which give examples of how we can cooperate in practical terms with those countries and regions. By doing that, I think we can bring pressure to bear on the politicians in those countries in order to get them to change tack and enact legislation more likely to attract foreign capital.

Now, we know that the superhighway will be used for selling goods and services as well as for entertainment, which is a very good thing, of course. I think it will be used also, above all, for disseminating knowledge throughout the world. Therefore, I think it is important that we combine efforts in order to disseminate scientific and technical reviews from all our countries on a multimedia basis, the idea being to replace rather than reproduce paper publication.

Now, of course, a number of conditions have to be met first. We must consult the publishers concerned, for two reasons. First of all, in order to safeguard their interests, we must have an effective system for invoicing, charging and for copyright protection, but, secondly, because the publishers will play a vital part in terms of reviewing, revising articles, and so forth. We are talking, first and foremost, about the quality of the information on the information superhighway. We also have to provide for fair and non-discriminatory access to the information highway.

Furthermore, it is important that we bring in the national bodies responsible for circulating articles, information. They know what their customers need and could doubtless provide the service-providers with the necessary information. Then we need to bring in hospitals and others who could undoubtedly benefit from access on demand to scientific knowledge throughout the world. It would obviously be easier, more effective, if they could guarantee use of an electronic transfer system. We therefore need to see what types of funding are available for this type of system — cheaper rates for developing countries, with a particular system of charging the duties to be paid.

Next point, we also need to remember that the global information highway is not just a new means of transferring information. Rather, by having a cooperative project as I have mentioned, we could see the full potential of this. Multimedia would involve high definition, picture, image, text, animation. Furthermore, above all in scientific and technical areas, it would be easier to overcome language barriers — databases could then be developed and tacked on the digital bases of the system. Therefore, by implementing such a project we could create a whole series of different undertakings.

Now none of these are necessarily new ideas, but I think they can be given a broader echo by today's Conference. We need to give free reign to market forces but we also need to do the groundwork, pave the way by laying down a number of general aims and objectives. To my mind, by acting in this way we could demonstrate to the developing countries what the information highway can mean to them in terms of transferring knowledge to their universities, and also in terms of very tangible results, such as telemedicine. All of this would have a knock-on effect, a snowball effect, encouraging the politicians to adopt a more positive approach which would therefore lead to the inflow of new capital and building of new infrastructure.'

Dr M. Tronchetti Provera

'My colleagues have underlined before the experience of the United States and the United Kingdom in liberalizing, privatizing the markets, and mainly the telecommunications market. That experience has shown that new jobs can be created, consumer and competition can be protected and granted, local monopoly can become more profitable. Everybody knows that Europe is late. In my opinion the time has come to create an authority, at European level, able to capitalize on

the experiences that have been made in the other countries and to help the single different countries that are traditionally in difficulties — to overcome the local culture and to enter into the new world able to compete. It is a difficult process but I think that without any European coordination, it will be difficult for Europe to become competitive, and it will be a real danger for the European Community to be the last area ready to be competitive in a major field of development.'

Mr J. L. Lagardère

'I think there is one fundamental truth: international cooperation, and as our American friends like to say, it is global. Now, the multimedia and this new civilization which is emerging calls for the support and the cooperation of everyone. Could I just speak on behalf of my good 50 000 people — 10 billion turnover — roughly 10% of what is represented here around the table. We are about 50, I think, so I would say I am a sort of average citizen here.

Now this group is actually built on two pillars, both equally important — high technology and communication, in other words, the hardware and the software. The high technology stretches from defence, which was the basic building block in the West, and this is an area where the most has been spent. It ranges from space, services, to telecommunications and lots of other things. For the software, we are talking about education, information, entertainment. In other words, newspapers, magazines, books, radio, television programmes.

Now both of these pillars are in the Matra Group, which was created after the war, and then Hachette, which was created in 1928 and is probably one of the oldest of the companies represented here.

My testimony today is simply to indicate how much multimedia is becoming a priority in our overall strategy, because it is certainly the cradle of future coordination between hardware and software, but it is also the pathway to the future. We, as heads of companies, have obviously to support investment in areas which are promising for the future.

Now if we look, in the industrialized world, at those sectors where we are likely to get two-digit growth, there will not be very many sectors which we can identify. I mean, in the automobile industry, growth is virtually zero. You can only obtain growth by moving to the countries in the East — large countries in the East — but for our particular area I think growth will certainly be in two figures.

In terms of hardware we are going to move much more towards spatial techniques for multimedia and telecommunications for multimedia and the audiovisual as well as for multimedia. However, what is more important, I think, is the content rather than the hardware. In this area I have tried to globalize our activities.

Let me just give you one example — encyclopaedias and reference books. We have one group of encyclopaedias in French, one in English and one in Spanish. Now a few years ago, I would have thought something like an encyclopaedia, which is an international area of knowledge, would be something which would be very much developed. Well, that is not the case. The paper encyclopaedia is becoming what is called in the US a “dinosaur” business.

But at the same time we have this development of the electronic encyclopaedia on CD-ROM. Today the CD-ROM is not the highway but the car, and I would say nothing is sadder than a highway without cars. This is even sadder for those who have built the highway and who are waiting for the tolls to be paid so that they can recover their investment.

Today, in the area of multimedia, the cars are built and a lot is being done in terms of the manufacture of these cars. These cars are the text, the games, the entertainment which is translated in electronics into CD-ROM — interactive CD-ROMs. They are available. To some extent they are simply being stored in a garage at the moment, but I think the first highways are set up — the online services. We have Europe online with the participation of our German and British friends, and in the future we will be participating in the superhighway, the larger highways, once they have developed.

In conclusion, let me say that the content, in other words the programmes, will be the decisive factor in determining the success or failure of this new multimedia civilization. The success of the highway will depend on the number of cars driving down the highway and these have to be international cars. I think it is on that point that we need to focus and this is where we need to be creative and innovative.

Let me finish by saying that the head of a company always finds it interesting — he wants to make more profit — in other words, he has to preserve a material interest — it is always interesting for him to make sure that his strategy coincides with virtue. In this instance I think virtue dictates that we have to prepare the generation of the 21st century. Young people today who are coming to the end of their studies are quite at ease using a computer — in fact they are more at ease with a computer than a piece of paper. They can play around with the keyboard of a computer but they are less happy perhaps turning the pages of a book. Now what we are doing in this multimedia civilization seems to be as important for the future of the human race in the 21st century and beyond as was the printing revolution by Gutenberg a few centuries ago.



'Let me say that I came here pleased with the level of principles that I witnessed in writing and have since heard espoused here, and on which we all agree. I have heard a repetition of those principles today from many of the participants and many have gone beyond the level of principle to practical detail and suggestion, and I commend that.

Many institutions and ideas — that were high-principled — have failed on the basis of execution. Mr Wilson pointed out that "the devil was in the details". I think execution and implementation are key issues here which we have not spoken about to any great extent, and perhaps we have no leverage on organizations to do so, but I think the bottom line here, of all of our discussions, really goes to the issues of open markets and competition.

Deregulation does not equal competition. Deregulation does not produce competition. Declaring competition does not make it so. Declaring that competition will exist at a given point in time does not assure its reality. Tens of hundreds of barriers exist and must be eliminated before competition can infiltrate here to foreclosed and monopolistic markets — they are cultural, they are economic, they are social, they are behavioural and they are all understandable.

I have frequently said that I would not have missed the past 10 years in my business in the United States for anything in the world, but I would never do it again because it is difficult. It requires much change, behavioural change; it requires a lot of pain.

Now Mr Davignon mentioned leadership. I think political and corporate leadership is an essential requirement as we get to the execution and the implementation of detail. Some level, in my opinion, of transitional regulation, is required.

We must be smart enough to know when to deregulate once the transition is completed but we must have some kind of market test. We need criteria, we need measurements, we need a matrix, we need — as I think Mr Davignon suggested — measurable goals. We need to know how to measure when competition and open markets really exist, and I have seen no evidence of that discussed here today.

Political courage is an essential. A willingness to disrupt the vested interest which has worked to the advantage at least of these groupings over the years, but underneath all that it seems to me that there has to be a fundamental belief that competition will work. It will work for the consumers, it will work for the people we all represent, whether in the political environment or in the business environment.

Dislocation will be absolute. It should be expected. A reallocation of jobs will occur, pain will be felt. I am pleased to say that all of that is, in my opinion and in my experience, a short-run phenomenon. But in the long run, experience has

demonstrated time and time again that markets will expand, investment will increase, prices will come down, consumer choices will expand, job creation will expand, commerce will grow, economies will expand, if competition and open markets are the rule of the day, but there must be an abiding belief and faith in the benefits of competition, both by the political leaders and by the corporate leaders who are operating in this environment and trying to execute this change.

Time is of the essence, as has been suggested on so many occasions here during this conference, and I believe it is time to get on with it. I do not know what follows this particular conference or organization, and as I suggested earlier, we have nothing other than our persuasive suggestions in terms of any legitimate organization or structure, but I do think, going back to Mr Davignon's suggestion, that we do need measurable goals to which we could all agree and "matrix", so that we can know when competition and open markets exist. There is much to do between now and any suggested date in any particular country, which is the promise of when markets will be open and competition will exist, and I think it is important that we find ways to move ahead.'

Mr I. Okawa

'Twenty-seven years ago I created a business in the field of software. Eleven years ago I purchased Sega from Paramount Pictures Corporation. I never thought that Sega Enterprises would grow as much as it has in the recent years. It has become much larger than the parents and it is much more well-known than the parent company. I am anyway happy that my child has actually surpassed me, but at the same time I am rather overwhelmed.

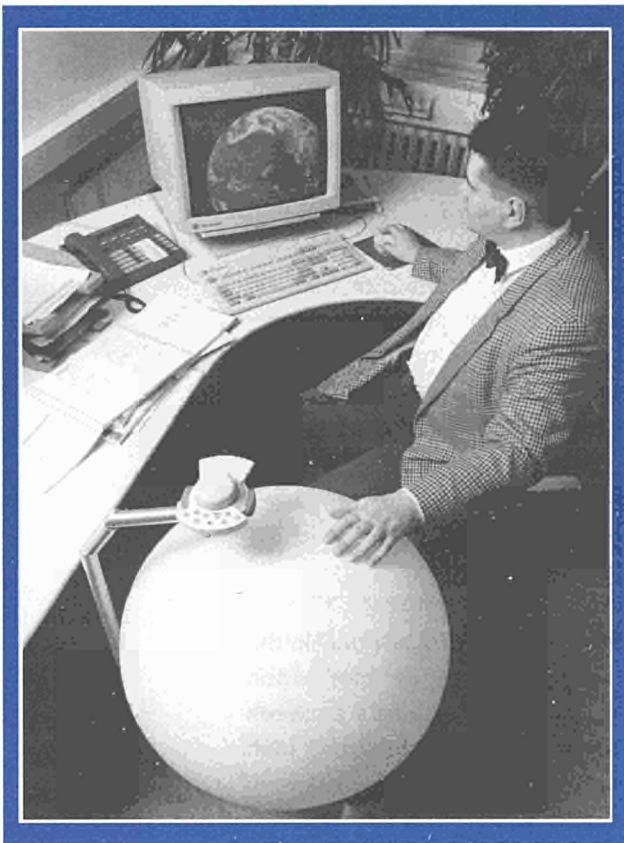
The reason for this is because the flow of information has expanded, not only in the field of business but to the individual household. In the age of information modernization, senses and emotions are dealt with. I think there is a fight between the strong adult and the weak child. In the farming society there were strong men fighting with weak women. In the industrial society there is a challenge between people in general.

I was wondering, maybe we could create a younger version of G7. Young people from the G7 countries can come up with many fresh ideas. They are not bound by different values that tend to beset us, and these people may make a major contribution to Gills of 10 and 20 years later. I think they could make many contributions because they could be something we cannot conceive of at present.

Information is something that was indispensable during the major disaster of the earthquake we experienced, and communication played an important role. There is a considerable role to be played by information and communication as collaboration on a large scale expands. "Virtual" will be the key word of the future. There are virtual companies which are being widely used at present, and we are moving to a "supportalist" business. There may be a need to reconsider companies,

or the concept of companies in the past, and we need to be able to establish an ability to ensure safety and security of communication.

Intellectual property is another area that we need to enhance. We cannot have too much protection because that may hinder the development of the developing nations. So we need to look at many aspects of intellectual property, especially in view of the developing nations. Western schools of thought have led the world in the past and one of the successful results is the creation of networks, but then there are special ways of thinking peculiar to the East which could be combined with these occidental thoughts.



Culture, management, education and religion can be stimulated through these dialogues. GII could make a major contribution to the development of culture. At the same time, by sharing information and by knowing more about each other we can arrive at world peace without wars. Since I am involved in business, I am at present carrying out an experiment in education.

In Japan there is a saying that "practice makes perfect". There are discussions which come first — the content of the infrastructure — or some would say that you have to really think before you actually take action, but I think it is important that you get accustomed to doing things by actually experiencing things yourself, and this is especially true for network communications.

You know that to confirm my thoughts, I personally gave personal computers to 10 000 employees of my company. They are all

connected by network and this is an in-house experiment to find out their needs. Employees' families can utilize these personal computers freely and I am very hopeful that new ideas will emerge from this experiment.

Through enjoyment, much energy can be created. Individual potential could be realized through education in the future. By creating the world of amusement through computers we were able to obtain the agreement of consumers in the past.

We need to overcome language barriers through these kinds of means in the future, as we have done in the past. I have a firm belief in these technologies, and we hope to be able to create ideas and games and images that can be enjoyed by people all

over the world. In my company we are also trying to develop machine translation systems. Maybe through this opportunity we will be able to collaborate with the advanced translation system of European countries, and this may make a contribution to the GII system in the future.'

Theme 4:

How to confront the potential risks inherent in this new technological revolution

Chairman

'We shall conclude by looking inwards and seeing what we can do to confront the potential risks inherent in this new technological revolution. First of all, is there not a danger that the gap will widen between the richest and the poorest countries? I would not say between the North and the South, because this term which is misused at so many international forums is totally inappropriate.

How can you compare an African country which has not taken off at all with Malaysia or Indonesia on the other hand? There are two Souths, if you like. In Niger there is one telephone line per 200 inhabitants, in the US 47 per 100 inhabitants. So, are we going to let these risks develop in such a way as to widen the gap or, as Mr Sirois suggested, could we not seek means which would allay these countries' fears of an even more desperate future? Is there not a risk that, as at Copenhagen with so many different issues on the agenda, everything would simply boil down to entrenched positions on the North and the South?

On such occasions people all too often simply dig their heels in, with the result that lengthy and useless papers on common platitudes are churned out. There is a risk, however, and the question is: can the rich countries reach some sort of agreement among themselves in order to offer the poorest countries genuine prospects?

Secondly, in our own countries — looking at things from the point of view of workers and consumers alike — will there be equal access to the opportunities offered by the information society? Mr Davignon has stated quite clearly that he prefers the formula of the information society with a clear social content. Others have also addressed the question of cultural diversity and the fact that it should definitely be safeguarded. Could I express doubts — because I think I and others need to have our fears allayed on that?'

'Information technology is changing the whole world profoundly. To a large extent this new world will be created on the basis of a powerful information infrastructure, an enormous network of networks, open to everyone in the world for them to connect with each other and have access to many diversified information resources linked up with it. The knowledge and skills of the new world will rely on the community of interests made up of those who are interested, knowledgeable and ready to cooperate in a great variety of fields, and who are served and fostered by this information infrastructure. A great deal of worldwide collaboration on a variety of issues is required for planning, constructing and operating this information infrastructure, as others have mentioned earlier in this session. In view of this enormous power and potential, it is also necessary to be extremely careful when utilizing this powerful tool for the good of humanity.

In my introductory remarks, I would like to touch briefly upon some of the important issues for harmonizing this information infrastructure with society. The issues are: developing information resources, securing integrity, creating jobs, promoting user-friendliness, indigenous culture, and encompassing human resources development.

The first point — developing information resources. Information resources, including libraries, museums, databases, publishers and broadcasters, are unevenly distributed round the world. In general, we find more information resources in developed countries than in developing countries, and more in metropolitan areas than in more rural districts. The information infrastructure — which covers the whole world — will even out existing differences. Extensive utilization of this type of technology will permit a variety of information businesses to use a portion of this information infrastructure to fit everyone, as a client will have access regardless of where he or she is located. Books converted in digital form will be stored by electronic libraries that permit clients to retrieve automatically, browse and print out the content at their terminals. Likewise digital exam corrections can be retrieved and displayed or printed out at the client's premises. So our society is obliged to support the goals of a great many information businesses and to encourage the utilization of global skills.

Point two — securing integrity. Information comes to us from very diverse sources, even when it is such a surprise route as single information infrastructure. Everyone can post things by transmitting information at will, using electronic bulletin boards or electronic mail. Thus, it has become extremely difficult for the users, who are increasingly information-dependent, to judge the reliability and quality of information. Therefore, information services should exert a great deal of care in gathering and handling data to maintain authenticity of information. When information includes the background, knowledge or activities of individuals, it does impinge on privacy and confidentiality. In so far as possible, such information should

be gathered only for very compelling reasons, be kept only as long as is necessary and be guarded diligently against reuse.

Point three — creating jobs. As a result of the current change and the information-oriented industrial structure, not only skilled workers in industrial plants but also office workers and sales persons are being replaced by computers, and are losing their jobs. On the other hand, enormous opportunities are being created in the area of software production, since much new software is needed to improve productivity in traditional industrial areas and to support knowledge-dependent products and services. Educational training which allows a smooth shift of the labour force from declining to emerging areas is crucial for such a change in industrial structure. In view of the enormous amount of software needed for structural changes, however, software production has to be shared on an international basis. Information infrastructure will permit workers to produce software away from their offices and to cooperate with their colleagues across national boundaries.

Point four — promoting user-friendliness. In the past decade, performance and productivity among work-sharing and service industries have been improved significantly by automation. However, strangely enough, automatic systems and services tend to become less and less friendly to human beings. In the future when our activities will be more closely knit by information infrastructure, technological information and policies will have to be targeted to promote user-friendly interfaces. If we do not follow such a course, automated services will continue to deteriorate in quality or will, at best, be viewed as a kind of necessary evil.

Point five — indigenous culture. Information infrastructure has been very useful and will be even more useful for humans in learning about the cultures of different communities. However, exposure to different cultures brings both advantages and disadvantages. On the one hand, it helps our community to understand the culture of others, and by selectively borrowing from these, a community will be able to enhance its own culture. On the other hand, if one community is exposed to a powerful culture and absorbs it without discrimination, the cultural identity of that community will be lost. Taking full advantage of the power of our information infrastructure, an effort should be made to strengthen the indigenous culture of individuals and communities and to encourage artistic, literary and scientific creations.

Last point — enhancing human resources and development. The progress of an information infrastructure and the success of social development depend heavily on the quality and quantity of available human resources. Computer games and personal computers are changing the lives of the young. They do not merely watch the screen but actively interact with computers. This participatory interaction with computers leads to a new form of learning by opening up a world of structured thought and behaviour in the course of an activity that is both pleasant and rewarding. The information infrastructure will provide opportunities of sharing the

high cost of preparing instructional programmes and will permit teachers to give advice to individual learners away from classrooms.

Another problem which needs to be addressed is the alarming rate at which knowledge is becoming obsolete, due to the fast pace of scientific and technological progress. Continuing education, or the refreshing of knowledge and skills, should be provided more systematically at the initiative of the public authorities; universities and other educational institutions should be expanded and reconfigured to accommodate this. The information infrastructure will play an important role in this respect by supporting such educational programmes as the “University of the Air”.

Mr Chairman, the global information infrastructure now being viewed is a novel infrastructure unprecedented in our history in its power and implications. It is changing our life dramatically and will change it further. It is changing how and where we live and what we do. Our world has become a world of many diverse communities of interest having far-reaching insight and problem-solving ability. The relative effort in building a global information infrastructure will strengthen communities of interest and in turn, communities of interest will help the growth of the global information infrastructure in harmony with society. This synergism will bring striking advances in our way of life and our legacy will live on, in the history of civilization.’

Mr C. O. McCaw

‘In addressing the risks of the information technologies and what has come to the world through the inventiveness of other human beings, we recognize that Deputy President Mbeki last night framed very well both the risks and the opportunity inherent.

Through the brilliance of content-providers throughout the world, ideas are flowing today one-way to people both in developed and underdeveloped nations, where people see ideas but are unable to interact with them because the network is not bipolar — it does not allow access back for the interaction and the maintenance of diversities of cultures. The poor people of many of these countries, therefore, see the advantages of industrialized society but cannot be a part of it without dislocating their countries, either moving to cities or ultimately moving to industrialized countries. This presents a tremendous risk, I think, to the world, that the basic stability of nations will be unseated.

The opportunity is to create an infrastructure which, on a decentralized basis, allows people, wherever they are, to participate in the process. We recognize that, as both by wire — and in most of the world not by wire — because the world’s population is too diversely situated for fibre optic wires to be carried everywhere. But clearly, the opportunity now is for us to take advantage of the tremendous power of the ideas that are flowing to people throughout the world.

If we can build networks which are flexible and allow, at very low cost, both the rich and poor of the world to have access, I think there is a great opportunity to restabilize societies and allow people to live, prosper and work where they are today. Again we have seen both the environmental and social negatives of forcing people to move into cities in order to get their economic benefits.'

Mr J. Ollila

'Mr Chairman, let me make a couple of very brief comments on this fourth theme for our discussion. My first comment would concern the issue of employment and the impact on employment of the information society. I think we are dealing with the same kind of concerns and fears that have taken place over the last 150 years — every time a new technology has been introduced into our society. At the same time, we have an overwhelmingly clear track record as far as the impact of technology on our societies is concerned. Industries have developed, societies have prospered because of the introduction of new technologies. I think we, as businessmen, have a special responsibility of really identifying and making clear for outside society what the impact and the potential of the revolution that we are experiencing really is.

I would only like to highlight an example — which I think is a very good example — of what is happening here. My own country, Finland, where my company mainly operates, was an agricultural country some 30 years ago, and 15 years ago 4% of exports were information-technology products. Last year, that percentage was up to 18%, and the impact of that export creation to jobs in the society is obviously major. The structural change and the positive impact, I think, have been very clearly highlighted by a lot of you. Why has that happened?

It has happened, in my opinion, because Finland has one of the most competitive telecommunication and information technology markets in Western Europe. That particularly involves telecommunications but there is also a lot of emphasis being put into deregulation of other aspects, and this had led to the industry becoming prosperous and jobs being created.

There is another interesting point of view which gives a background to this development, and that is that Finland is a country where the number of Internet users, per total population, is the highest in Western Europe, something that I think our authorities were the last ones to identify, because this is a grass-roots phenomenon which certainly has not been supported by special measures, or subsidies, or whatever. So, there is a revolution taking place and its impact is positive, and this has to be highlighted in such a way that misconceptions do not arise concerning the impact on employment.

My second comment would follow very much on the lines of what Greg McCaw said concerning the opportunities, or the threats to the developing countries, which I think is a major issue that we have to tackle, even if we are here in a G7 meeting.

The way I see it is that the global information infrastructure and the information society being created through that infrastructure is a major opportunity. If done right, if implemented right, if the proper investment can be put forward, it will drive growth, give another opportunity for the developing countries and really be the first major opportunity in the postwar era to have a jump-start in economic development, which during the last five or 10 years, I do not think has met anybody's expectations.

The key here is to give proper opportunities to the masses of people in those developing countries, and education is the main thing that has to be addressed. Education is the only means by which the potential of the information society will materialize to numbers of people and make the whole process start from the grass roots. I think, as Mr Davignon said earlier, leadership comes into play here as well. It is not a question of putting up subsidies or regulating things, but the political and business leaders have to demonstrate leadership to make this happen.'

Dr L. Ramqvist

'Mr Chairman, we have all agreed the apparent importance of standards, yes, but should we not be a little more brave? I think this meeting should press for more competition within standard-setting, because standards could turn into bureaucracy and obstacles. Let the free competition work also within standards, and let the winner be the winner globally. So, ladies and gentlemen, let us work for a much more flexible standard, so we will have a prerequisite for a dynamic GII for the future.

My second point is investments. I would like to comment on general investment policies. I speak from experience as a telecom supplier. We supply 120 countries in the world and I am sorry to say the policies and practices that are affecting us and other international corporations are often restrictive and not conceived to help finance the GII. There are impediments such as lack of national treatment, screening of foreign investments, market reservations, performance requirements, and I could go on like that — not to speak about the excess for government export-financing. So, ladies and gentlemen, could we not say that the time has come for us to recognize the foreign investor as a corporate citizen with full and equal rights, to be treated no less favourably than national companies? Thank you, Mr Chairman.'

Mr P. Lescure

'Competition is too much of a pleasure for me to refrain from commenting on it, particularly as looking around the table I was just trying to place myself in the hierarchy and I had to realize that I am no doubt the smallest economic entity in this august assembly, which is jointly reflecting on a future which is extremely exciting and satisfying if we think that we can attain the objectives.

As Mao Tse-tung once said, simplicity is revolutionary. Now over the last 30 years this is the first time that I think we can see revolutionary technology actually arriving when we expect it. For years we have been talking about the future and we have often failed to see things which had been forecast actually happening, but this time the rendezvous has materialized, and so everything which was talked about 10 or 15 years ago we can actually see being translated into reality, into the day-to-day life of our citizens. All this is known and being applied.

Now revolutionary simplicity means that if everyone is actually to benefit from the revolution, then everyone must be on an equal footing. We cannot turn our back on progress. If we turn our back on the information highway we would be creating unemployment and might be increasing the mortality rates, because we would not have the same access to skills as our neighbours. So where there is competition you have trade, and there will be competition between those who are the most successful — it is true that there will be incredible access to civilization if you can be plugged into multiple information sources, international libraries. I would be able to have access to the literature of the world. I can have access day and night. But those who will enjoy the best show will be the most powerful — the ones who can most readily use this technology. Those who are the most represented here — I think are over-represented compared to those who are going to actually produce the show — that is not unusual but perhaps a proportion of this over-representation is composed of the representatives of technology.

Now my company is a pay-TV company. The French are often accused of being hesitant in terms of international relations on the grounds of cultural specificity, but I do not think I am open to that particular criticism because we are present in Germany, and we also cooperate with the south of Europe, and we have the same decoder from Seville to Hamburg. We are also present in Poland. We have an excellent example there of a country which is crying out for the same level of industrialization and access to modern means, but there is a slight economic problem. Now we are also in Africa and the problem there is a bit more acute. It is all well and good to talk about accessible prices for the highway but we will have to pay if these people in these continents are to have access. Now these were fairly simple comments and, I think, representing the views of the consumer, but perhaps ministers who may have listened to us will be able to reflect further on this.

Now I would simply like to reiterate the conclusion of Count Davignon. I think he was making some absolutely fundamental points. Whether one is French or not, I do not think it is a question of fighting for quotas. I mean, this may last for a few more months, I do not know, but it is almost completely counter to progress and trade. Mr Phillis this morning, I think, talked about encouraging or even obliging the major European operators to produce, and there should be some obligation there. I mean, production is not running counter to nature or running counter to trade. I think we should insist on that, we must adjust our regulation, moving away from defence to health because I think we are creating a new area, a new space. Europe

is all well and good but in its dynamism, Europe must be in a position to benefit from this revolution as may other areas in the world.'

Mr G. Levin

'First, let me speak about the challenge to cultural diversity. It is my strong conviction that the vast increases in the capacity of the new delivery systems that we are discussing will very much encourage cultural and language diversity, that open access will indeed encourage increased flows of new cultural works, and that the new networks that we are describing will allow greater selectivity in programmes in services to meet individuals' language tastes and cultural preferences. I know in our own experience, when we constructed the first fibre-rich broadband pipe in the United States, there was a tenfold increase in the number of specific cultural services that we saw arise in New York City — so that this challenge I think can be met, because we are opening up individual control and choice.

Secondly, the risk of a two-tier society, the risk of creating information aristocracies. I think it is clear that the information infrastructures have the potential of giving access to all citizens for what is really the richest source of knowledge, art, learning and information. I know that education and training will become richer and more accessible, particularly when we enhance computer and information literacy skills, and that competition is really the key to having affordable wide-ranging services. Here again, in the United States I think we are developing a policy where there will be an exercise to interconnect all the schools and libraries in our nation so that, as in the case of print, with books and magazines, video and electronic information will be publicly available.

At the same time, the kind of regulatory policy that encourages competition will enable us to have low-cost basic services so that those who are least able to afford it will have access to this information structure. And then the gap between the industrialized and developed countries: I think it is clear we must reach the 4 billion people who do not reside in the G7 countries and that with the right kind of access these countries can harness the educational, scientific and commercial resources to their benefit, particularly if we have the right regulatory freedom to provide competition. The developing countries I believe will be able to leap-frog the technology that has existed perhaps more slowly in the developed nations.

Finally, Mr President, just a general comment. I believe that the cooperation between the private and the public sector which is manifest in this particular meeting should serve not only to create and develop the information society that has been, I think, eloquently articulated today, but there is a strong motivation on the part of the private sector, on the part of business, not just to make money, but to use this information society to develop a better society for everyone.'



Conclusions from the Chair

Chairman

'With one eye on the clock I must draw our morning's discussions to a close before we move on to join President Santer and Vice-President Gore for lunch. When the governments of the G7 in Naples decided on today's session, my idea from the word go was that ahead of the ministerial gathering we would organize this forum of business and industry. I am very glad we have done so, although I greatly regret the fact that time was not available to you to convey your message.

I think your main message is a message of humility to ministers and politicians — a body to which I still belong, even though I am retired. As I say, out of a spirit of solidarity I still feel I am one of them. A message of humility, because any politician, any civil servant, is expected to have ideas about the future, produce scenarios about possible future developments. Our citizens want that, our voters want that, our consumers want that. At the same time, however, you have said: be careful — we cannot say now what the information will look like in 10 or 15 years. There is enormous potential, rapid development and yet, as Mr Davignon said, we need guidance, we need leadership to steer our path through this unknown territory with all the risks but also all the opportunities which it offers. This is the fundamental paradox for the ministers, of course. On the one hand they need to explain to public opinion what is possible and allay their fears while, at the same time, they must help you to create the best possible environment in which scientific and technical progress can flourish, in such a way as to generate maximum welfare and benefit for all.

With that in mind, therefore, I think the organizers' idea of setting up such pilot projects is an excellent one. The spread of such projects will bring innovation to the close attention of all concerned. This is where the innovators and the creators must get together. It is with that in mind, indeed, that the European Commission wishes to create a sort of bureau of innovations to be brought to general knowledge.

As for the substance of our discussions, there are three main ideas I would like to offer. First of all, on the economic and technical front, and three reflexions on society itself. At the risk of sounding horribly banal, your main concern is for flexibility and competition. Let competition flourish in order to encourage innovation. Furthermore, as you have said, all too often "the devil lies in the detail". There are hidden rules which do represent a genuine impediment to your work. That is a very clear message which you have all conveyed and which I feel, I must,

therefore, repeat in this concluding summary. Some of you have said we must deregulate, but at the same time we have to reregulate in order to protect privacy, young people and copyright.

My second headline, if you like, is internationalization. As we have heard often enough, this technology by its very nature is global, so globalization is not some diabolical notion drawn up by mere ideologists. Rather, globalization is at the heart of this technology and to say "no" to that would be like denying the fact that the sky is blue, or that rain can fall from the clouds. We have to recognize that even though all the pieces of the jigsaw are not yet in place, that is the framework, and we have to take that into account immediately, whether we are talking about investments of partnership — a very important issue which many of you have underlined — whether we are talking about standardization, or whether we are talking about the general ground rules.

It seems to me it may be easier to invent general ground rules at international level than at national or subnational level, because we have to, given the process of technological change. In a world hedged around with all sorts of uncertainty, none the less this is what we must do. Therefore, discussions must be initiated immediately, at that level, in order to ensure that we are up to the international challenge of this process of change. A national problem cannot be dealt with at district level. An international problem, therefore, must be explained internationally even to those citizens who are not quite sure how to react to the flood of images which they are constantly confronted by: a combination of fascination combined with a fear of a loss of identity and roots. You who are creating this should never forget it.

It seems to me new information technologies must be reinserted into our policies on development aid. Mr Sirois, in particular, indicated a number of very promising avenues. Let me quote this in two ways.

If tomorrow the new information technologies in the poor countries were kept for the urban society alone, it would simply widen the gap between the urban and rural world, which is already one of the main obstacles, not only to economic development but political stability in those nations. If, therefore, these technologies can be made available, perhaps in simplified form, to villages, rural society, I think that will be a vital step forward. Secondly, an idea put forward by Mr Shimon Peres: we thought that alongside the Middle East peace process, we could create some sort of economic community between Israel, Palestine and the Arab States — and I thought of a community of water, energy and infrastructure. It is very difficult actually to achieve this in spite of Casablanca and other conferences. Mr Peres had another idea. Why not give every young Arab a computer in order to give him a level of education, basic education, a knowledge of the world which would enable him not only to realize his own potential but also to understand the principles of liberty, peace, tolerance and understanding? Therefore, there are multiple examples.

And it seems to me that I have not seen a book which says: "this is the way new technologies could transform our conception of development aid".

Then, on society, I have just kept three ideas. First of all, information and education. There is education as a mean of access to the information society and there are the new information technologies as a means of education. On the former, which is really the most important, I think we must take our hats off to the English language. Education, learning and training. "Learning" is a quite remarkable term, one that cannot be easily translated into French. Normal versions in French have all sorts of pejorative undertones. Whereas, if you talk about "learning", it means that someone enters society and learns by seeing others, watching others, seeing what is happening in the towns, watching television, playing with their computer, and it is this notion of lifelong learning which is so essential, something that we must become used to, that our young people must become used to if they are to live and prosper in this society.

Now I have stressed learning. I am not trying to understate the importance of education or training in specific and general terms. Education is an area that I have a particular knowledge of. What we have seen is that a good general level of education makes you better placed to master these new technologies, more so than training.

Then, new information technology as an instrument for education. Many of you have spoken of this. Many of you have come to see me in fact in order to explain what you are doing, Mr Allen, Mr De Benedetti and others. Thanks to your input we were able to produce the White Paper for the European Union. What is happening in the market is far more important than anything one might read in books, but we recognize that this is a vital instrument. Interactivity, the involvement of pupils, not simply watching a screen but actually participating actively in this educational process. To learn what humanity has already learned about itself is possible. This is a very fruitful field which is open to us and where we also have interest in exchanging our ideas and our experiences.

Second element, on cultural diversity. Whether you have allayed my fears does not matter. As far as I am concerned, what you have not yet managed to do is allay the fears of many ordinary people and many politicians as well. Now interesting things have been said. More investment in local production was suggested by one of you as a means of maintaining the diversity of local, regional and national cultures. I think that certainly is an idea to be developed, not least to cool down the current dispute between the US and Europe. And secondly, there is interactivity, also a vital notion so that someone who receives a global culture can none the less understand and translate according to his traditions, his roots, his family and local environment.

And thirdly, in terms of society, and I stress this because I know this is going out live. I heard from you only optimistic words in terms of employment. I have not heard a single person suggesting that the bottom line with new technology would be less, rather than more jobs. This, I think, is something that we must remember, develop, and take steps to ensure that it can take place. To my mind, however, this is of vital importance in our countries in Europe certainly, where there are concerns about the levels of unemployment which remain unacceptably high and which are not only related to technology.

To conclude, I have kept two proposals which I am sure will also have caught your attention and which I hope may be of assistance to you in the future. First of all, the proposal for a round table whereby the working party on information technology, our working party, would be opened up to American and Japanese businessmen so that with Halifax in mind, your views, your summary conclusions, can be put before the Heads of State or Government in July.

Secondly — and here I really am passing the ball on to the ministers — the whole question of consensus, the issue is internationalization and how we approach it. As Mr Davignon has said, the ISO must work, the OECD must also do so, the WTO must get itself up and running, but none of that will be enough unless we have a sufficiently high degree of consensus, a challenge which can only be met if we set clear objectives. My personal wish, my personal hope, is that in Halifax, after the preparatory work taken up from this weekend, the Heads of State or Government of the most industrialized countries, without forgetting the rest of the world, will set some elementary and fundamental objectives for the success of the information society so that we can overcome impediments which will enable its development, which would enable the game of free enterprise and creativity, while at the same time providing reassurance to our populations, and creating this positive environment that you seek. Now they of course will not wish to shout this from the rooftops because the future is too uncertain. They will have to do it with humility but they certainly have to commit themselves to this. If there is a risk to take — indeed politics is all about risk — it is to set these objectives so that all of you, creators, workers, everybody can embark upon this new society with all the trump cards in your hands.

I would like to thank you for your contributions.'

Annexes

*Additional texts from the G7
Ministerial Conference*

Annex I

Conclusions of the G7 Ministerial Conference

Following the remit of G7 leaders at their Naples Summit in July 1994, ministers from the G7 countries and Members of the European Commission met in Brussels on 25 and 26 February 1995 at the G7 Ministerial Conference on the Global Information Society.

A shared vision of human enrichment

Progress in information technologies and communication is changing the way we live: how we work and do business, how we educate our children, study and do research, train ourselves, and how we are entertained. The information society is not only affecting the way people interact but it is also requiring the traditional organizational structures to be more flexible, more participatory and more decentralized.

A new revolution is carrying mankind forward into the information age. The smooth and effective transition towards the information society is one of the most important tasks that should be undertaken in the last decade of the 20th century. The outcome of this Conference shows that G7 partners are committed to playing a leading role in the development of the global information society.

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 participate fully in this process as it will open opportunities for them to leap-frog stages of technology development and to stimulate social and economic development.

The rewards for all can be enticing. To succeed, governments must facilitate private initiatives and investments and ensure an appropriate framework aiming at stimulating private investment and usage for the benefit of all citizens. They should also create a favourable international environment by cooperating with the relevant international organizations such as the WTO, ITU, WIPO, ISO, and OECD.

***Our vision can only be realized
by means of collaboration***

G7 partners are resolved to collaborate on the basis of the following eight core principles in order to realize their common vision of the global information society:

- (i) promoting dynamic competition;
- (ii) encouraging private investment;
- (iii) defining an adaptable regulatory framework;
- (iv) providing open access to networks;

while

- (v) ensuring universal provision of, and access to services;
- (vi) promoting equality of opportunity to the citizen;
- (vii) promoting diversity of content; including cultural and linguistic diversity;
- (viii) recognizing the necessity of worldwide cooperation with particular attention to less-developed countries.

These principles will apply to the global information infrastructure by means of:

- promotion of interconnectivity and interoperability
- developing global markets for networks, services and applications
- ensuring privacy and data security
- protecting intellectual property rights
- cooperating in R&D and in the development of new applications
- monitoring of the social and societal implications of the information society.

An information society devoted to the people

Policies aimed at a rapid and successful transition to the information society must ensure the highest possible levels of participation and avoid the emergence of two classes of citizens. Universal service is an essential pillar in the development of such a policy strategy.

The creation of jobs and improvement of the quality of work are of paramount importance. The policy process must be backed up by collaborative research at an international level to investigate the impact of information and communication technologies and services on employment.

The information society should serve the cultural enrichment of all citizens through diversity of content reflecting the cultural and linguistic diversity of our peoples. The private sector should therefore develop and build information networks with abundant capacity to accommodate a wealth of information, both locally produced and that developed in other regions and nations.

The knowledge-based economy demands greater openness and creativity in schools and universities, and the acquisition of new skills and adaptability through lifelong training. An open approach to education that combines local and national cultures and promotes mutual understanding between our citizens is required. Access must therefore be tackled at its roots by providing citizens with the tools to learn in an information society. Advanced multimedia information services can meet such requirements while complementing and enriching the traditional education and training systems.

The information society is a new, complex and abstract concept and as such it requires considerable effort in promoting public awareness and understanding.

G7 partners are determined to ensure that the information society addresses the needs of citizens. They have committed themselves:

- **To promote universal service to ensure opportunities for all to participate**

By establishing universal service frameworks that are adaptable, they will ensure that all citizens will have access to new information services and thus be able to benefit from new opportunities. They will evaluate the impact of information services and technologies on society using existing organizational resources. Strategies to prevent marginalization and to avoid isolation will be developed.

- **To study the impact of the information society on jobs**

They encourage the OECD to complete its work on the effects of information technology on employment. In addition, the OECD is invited to launch a complementary study on the employment impact of information services. Academia, government and the private sector should expand their efforts to assess the impact of the information society on the economy, trade and the workplace. Research on employment effects will provide valuable input for policy decisions.

- **To serve cultural enrichment for all citizens through diversity of content**

Citizens should be provided with access to all content, including a strong presence for indigenous cultural products and services. Diversity of content, including cultural and linguistic diversity, should be promoted.

● **To encourage private sector development of information networks and provision of new information-related services**

They will pursue worldwide cooperation in encouraging the development of a global information infrastructure to stimulate the creation of an abundant capacity to accommodate and to enable a diverse mix of content for all citizens.

● **To pursue adequate education and training**

They will exchange information on new ways of educating, training and retraining. Information technology training should be integrated into the regular school system. The development of vocational training on information technologies will facilitate the adjustment of workers to structural and organizational changes throughout their lives.

● **To improve the understanding of effects on the quality of life**

They will encourage projects and joint actions, in particular to demonstrate the possibility of flexible and better quality of work, improvements in health care, educative leisure, urban development and greater participation of the disabled in society.

● **To foster public support by raising awareness and understanding**

They agree to exchange experiences on the best means to raise public awareness and sensitivity towards the global information society.

● **To encourage the dialogue on worldwide cooperation**

They call on industrialized countries to work towards the participation of developing countries in the global information society.

Current regulations need to evolve

The regulatory framework should put the user first and meet a variety of complementary societal objectives. It must be designed to allow choice, high-quality services and affordable prices. It will therefore have to be based on an environment that encourages dynamic competition, ensures the separation of operating and regulatory functions, as well as promotes interconnectivity and interoperability. Such an environment will maximize consumer choice by stimulating the creation and flow of information and other content supplied by a wide range of service and content providers.

Open access to networks for service and information suppliers and the mutual enrichment of the citizen through the promotion of diversity, including cultural and linguistic diversity, as well as the free expression of ideas, are essential for the creation of the global information society.

Competition rules need to be interpreted and applied in the light of the convergence of new technologies and services, market liberalization and encouragement of new entrants, and growing global competition. Competition

authorities should not prohibit the emergence of global players. Productive forms of cooperation to promote economic efficiency and consumer welfare should be allowed while shielding against risks of anti-competitive behaviour, in particular risks of abuse of market dominance.

G7 partners are therefore committed:

- **To ensure citizens' access through universal service in the respective markets**

This will require consultation on both the scope and the means of providing universal service, especially with regard to its financing, while ensuring that the development of networks and the provision of services can be carried out without undue burden on any actors.

- **To open up markets to allow the development of global systems**

This is to be accomplished by pursuing liberalization of services, infrastructure, equipment procurement and investment, within an appropriate framework. Special emphasis should be given to the negotiations in the WTO, notably on such sectors as basic telecommunications, which are important to see concluded successfully by April 1996.

- **To pursue the interconnectivity of networks and the interoperability of services**

This is to be achieved through the promotion of a consensual standardization process which is market-led and which encourages open interfaces. Cooperation amongst all actors should be built on private-sector-led dialogue aimed at identifying critical interfaces. This should be backed up by swift tests and trials to identify appropriate standards corresponding to the critical interfaces. Accelerating the standardization process conducted by international bodies will contribute to developing timely and market-responsive standards. Mutual recognition of test results should be pursued. This process will be backed up by developing global test beds.

- **To provide open access to networks for service and information suppliers**

It is agreed that open access to the global information infrastructure and the people that it serves is essential in order to encourage firms to provide services, create new jobs and provide mutual enrichment to the citizen through the promotion of diversity, including cultural and linguistic diversity, as well as free expression of ideas. This should take place in all countries within a framework which will prevent abuse by dominant actors.

- **To implement fair and effective licensing and frequency allocation**

For fair and effective allocation of scarce resources, transparency needs to be assured by means of promoting objective selection and awarding criteria. Further cooperation, notably under the auspices of the ITU, should be pursued in the field of frequency band harmonization, particularly for international mobile and personal

phone services. International dialogue on the development and the implementation of global mobile and personal systems is encouraged.

● **To allow for productive forms of cooperation while shielding against anti-competitive behaviour**

This will require that competition and regulatory authorities meet at regular intervals in international forums such as the OECD and other relevant bodies to exchange information and views about the evolving regulatory process and the application of competition rules. Cooperation on the enforcement of competition rules should be encouraged while paying particular attention to the confidentiality of commercial data. Work towards a multilateral framework is welcomed. A first step in this process would be for competition and regulatory authorities to provide an accurate description of their regulatory framework.

Protecting privacy and personal data alongside the safeguarding of plurality of opinion play an essential role in maintaining citizens' confidence in the information society and thereby encourage user participation and strengthen competition and market access.

Only if security of information is effectively guaranteed will individuals or organizations take full advantage of information infrastructure. Citizens and society should be protected against criminal abuse of the developing networks.

Providing high levels of legal and technical protection of creative content will be one of the essential conditions to ensure the necessary climate for the investment needed for the development of the information society. Thus, there is a need for internationally recognized protection for the creators and providers of materials that will be disseminated over the global information infrastructure.

G7 partners will increase efforts to find creative, technological and policy solutions:

● **To protect privacy and personal data**

The protection of personal data requires that national as well as regional data protection provisions are defined and properly enforced and that international cooperation and dialogue are encouraged.

● **To increase information security**

Authorities should work collectively to increase the reliability and security of national and international networks. This will be achieved by developing security principles that are commensurate with the risk and magnitude of harm.

● **To protect creativity and content provision**

Measures will be developed through national, bilateral, regional and international efforts, including the World Intellectual Property Organization, which will ensure that the framework for intellectual property and technical protection guarantees

that the right-holders enjoy the technical and legal means to control the use of their property over the global information infrastructure.

***Interactive applications
will change the ways we live together***

Information and communication technologies will present new opportunities and challenges in the way we access and disseminate information and content. Interactive multimedia services and applications are the most visible components of the information society. Their emergence and eventual penetration at all levels of society mean rethinking and restructuring the traditional communications methods. This will create a change in our environment and the way we live together. Sharing experiences on emerging applications would provide us with an understanding of their impact and benefits. Public authorities have an important catalytic role to play in the promotion of research, applications and generic services. They can also further initiatives in the development of applications in areas of common public interest. International cooperation on joint projects provides an opportunity to demonstrate the benefits and uses of the information society.

G7 partners recognize the impact interactive applications will have on society and are committed:

● **To share experiences on emerging applications**

An inventory of major applications could provide knowledge of new and emerging employment sectors. Information on impediments to the realization and dissemination of new applications will be exchanged.

● **To act as a catalyst for the promotion of research, applications and generic services**

They will increase cooperation efforts in selected joint projects of common interest, especially on basic technology, including interconnectivity, interoperability and human interface for universal services. Comparable opportunities for participation in projects will be offered.

● **To promote joint projects to demonstrate our commitments**

They use the opportunity of this Ministerial Conference to identify 11 selected joint pilot projects (see below). The participation of other partners is encouraged. The projects selected aim at demonstrating the potential of the information society, at contributing to solve various important issues for realizing the information society and at stimulating its growth, in particular in relation to job creation, while involving all actors concerned at all levels, and in any country.

They call on all interested parties to join as soon as possible, so that wide cooperation and projects can be effectively initiated by the time of the Halifax Summit.

G7 pilot projects

Executive summary

G7 members along with the European Commission decided to take the opportunity offered by the Ministerial Conference being held in Brussels from 25 to 26 February to identify a number of selected projects where international cooperation could be an asset. These projects would aim at demonstrating the potential of the information society and stimulate its deployment. The projects will be undertaken initially by the partners but are meant to be open. The participation of other partners, including international organizations, is encouraged.

Further refinement and investigative studies will be undertaken in order to define, in further depth, the project contents and their implementation framework.

The work undertaken in G7 pilot projects thus far has been based on joint deliberations and consensus on theme areas identified to be of common international interest for the information society. These selected themes were then rendered into more concrete project proposals through formal and informal discussions and meetings. Further refinement of the proposals and studies of implementation scenarios are still required for all the projects considered.

It is expected that the consequences of the joint action in this area will provide a concrete contribution to the requirements of the global information society and will demonstrate its potential for the well-being of all citizens.

1. Objectives of the action

The key objectives for the launching of pilot projects for the information society are:

to support the goal of international consensus on common principles governing the need of access to networks and applications and their interoperability;

to establish the groundwork for productive forms of cooperation among G7 partners in order to create a critical mass to address this global issue;

to create an opportunity for information exchange leading towards the further development of the information society;

to identify and select projects of an exemplary nature having tangible and clearly understandable social, economic and cultural benefits which will demonstrate to the public the potential of the information society;

to identify obstacles related to the implementation of practical applications serving the creation of a global information society;

to help to create markets for new products and services, where appropriate.

2. Principles

The main principles guiding the selection and implementation of the theme projects are the following:

to have clear added-value for the development of the information society by:

- increasing the effectiveness of information exchange,
- launching common actions,
- initiating cooperation at a global level;

to give meaning and content to the concept of information society for the citizen, taking into account their cultural and linguistic diversity;

to stimulate cooperation amongst different players: industry, academia, administrations, public authorities, etc.;

to avoid the creation of new bureaucracy or institutions;

to have as a general rule any expense covered by existing programmes;

to have included open access as an integral part of its design.

They are open to non-G7 countries as well as public and private organizations, including international organizations and standardization bodies.

3. The selected theme area projects

The following are a description of the proposed themes selected for initial implementation. Other theme areas of common economic and social concern, such as applications for senior citizens and people with disabilities, are being pursued and opportunities for other cooperative projects studied.

(i) Global inventory: to create and provide an electronically accessible multimedia inventory of information regarding major national and international projects and studies relevant to the promotion and to the development of the global information society. An assessment of social, economic and cultural factors impacting on its development will also be undertaken.

(ii) Global interoperability for broadband networks: to facilitate the establishment of international links between the various high-speed networks and test beds supporting advanced applications.

(iii) Cross-cultural training and education: to provide innovative approaches to language learning in particular for students and for SMEs.

(iv) Electronic libraries: to constitute from existing digitization programmes a large distributed virtual collection of knowledge of mankind, available to a large public, via networks. This includes a clear perspective towards the establishment of the global electronic library network which interconnects local electronic libraries.

(v) Electronic museums and galleries: to accelerate the multimedia digitization of collections and to ensure their accessibility to the public and as a learning resource for schools and universities.

(vi) Environment and natural resource management: to increase the electronic linkage and integration of distributed databases of information relevant to the environment.

(vii) Global emergency management: to encourage the development of a global management information network to enhance the management of emergency response situations, risks and knowledge.

(viii) Global health-care applications: to demonstrate the potential of telematics technologies in the field of telemedicine in the fight against major health scourges; to promote joint approaches to issues such as the use of data cards, standards and other enabling mechanisms.

(ix) Government online: to exchange experience and best practice on the use of online information technology by administrations on the establishment of procedures for conducting electronic administrative business between governments, companies and citizens.

(x) Global market-place for SMEs: to contribute to the development of an environment for open and non-discriminatory exchange of information and to demonstrate, particularly through electronic data interchange (EDI), the interoperability of electronic and information cooperation and trading services on a global scale, for the benefits of SMEs.

(xi) Maritime information systems: to integrate and enhance environmental protection and industrial competitiveness for all maritime activities by means of information and communication technologies including applications in the area of safety and the environment, intelligent manufacturing and logistics networks.

Annex 2

Opening address by Jacques Santer, President of the European Commission

'Your Royal Highness, President of the European Parliament, Mr Deputy President, Ministers, Ambassadors, ladies and gentlemen,

It is with great pleasure this evening that, on behalf of the European Commission, I open the G7 Information Society Conference.

I believe that this conference has the potential of going down in history as one that marked a real change in the future of all of our societies. We are indeed proud to host this event. Not just because this conference is combining a unique tandem of the public and private sectors working together and charting the way forward, which is well illustrated here tonight where the whole cross-section of the information society is represented. But also and above all, because in the next two days we have the opportunity to set in train a process that can, indeed should, provide in the near future a quantum leap in the quality of all our lives, everywhere on the globe.

Not just the quality of the lives of those of us in the developed countries, but of all mankind, rich and poor. What we are aiming at is to construct a truly shared vision of human enrichment.

The development of the information society must be truly global, open to all, benefiting everyone. It must offer the opportunity for developing countries to leap-frog in technology terms.

That is why we felt in the European Commission that it was so important to include in our conference and in our deliberations a major political figure from a country which is not yet as developed as those of the G7 partners.

I am particularly pleased to welcome among us the Deputy Executive President of the Republic of South Africa, Mr Thabo Mbeki, who will be addressing us later on this evening. We are greatly honoured, Sir, by your presence, and I know I speak for all Europeans when I say that we in Europe are deeply touched and in great admiration of your country's transition to a truly democratic system of government — for which we wish you every success.

I would also like to pay tribute this evening to the organizers and contributors to this conference, all of whom, public and private sector alike, have worked extremely hard to make a success out of this event. First of all, I would like to thank, on behalf of all the G7 partners, the Belgian Government for their hospitality and making available the Palais d'Egmont. Secondly, I am particularly grateful to the President of the European Parliament, Mr Klaus Hänsch for agreeing that an essential part of the conference, the exhibition and press centre could be set up in the Espace Léopold in the new European Parliament buildings. We are deeply appreciative of the European Parliament's involvement and support in making this conference a success. I would also like to thank the Ville de Bruxelles for their immense help and support. And last but not least, I would like to mention the vision and determination of my predecessor, Mr Jacques Delors, who triggered the growing European political, economic and cultural interest in the dynamics of the information society. As you are aware, he is chairing the round table of business leaders tomorrow morning.

Dawn of a new age; the new industrial or socioeconomic revolution whatever description we choose — the information society is now upon us. This is not intergalactic pipedreams, nor futurologists running wild! The truth is that the technology is now available and available at economic prices. It is therefore both the present we are considering and our future.

The demand for the services of the information society appear unlimited. One recent estimate, for example, suggests that the multimedia industry in Japan will grow sevenfold by 2010 — surpassing the auto industry in revenue and numbers employed. In Europe the ITC market is growing by over 5% year. What politicians and the private sector have to agree on, are the principles, the conditions, the guarantees and the rules that will allow the creative talents of our entrepreneurs to develop the services for all our citizens, for our businesses and for our governments.

I believe that the development of the information society also offers the European Union a unique opportunity to advance our own competitiveness and the well-being of our peoples across all of our continent. It will provide a real stimulus to our economies in the near and medium-term as the completion of the single market did in the 1980s.

But for the information society to succeed it will require integrating the information society into all levels of our society. What this means in practice is integrating new ways of working, new health-care techniques, coping with new traffic systems, new educational methods and opportunities, new training and skill requirements, new multimedia services, new ways to better manage the environment and our natural resources. In essence, therefore, the information society requires closer integration, participation and solidarity and all three of these basic building blocks are those which the European Union is not only familiar with but history shows, very successful at developing. We are in an era, which Peter Drucker describes as one

where "... knowledge has become the resource rather than a resource. This fact," he says "changes fundamentally the structure of society. It creates new social and economic dynamics. It creates new politics ...".

But there is also another aspect of the information society that should be very attractive for us Europeans — and that is that the information society, if properly managed, offers a wonderful opportunity for our creative talents, for our younger generation and our European cultural diversity to flourish and bloom. The information society is perhaps too often perceived as a homogeneous concept. But to be successful its services will have to be heterogeneous, adaptable, respectful of, and open to the cultural differences of all peoples. The flexibility and speed of modern information systems, of course, allows this. The challenge for the European Union is to create this unity from our diversity.

I believe, as I said on Tuesday, that we in Europe are condemned to succeed with the new information society. This is because the development of the information society will not pause for a "half-time break and a cup of hot water", like Astérix and Obélix in the midst of battle, whilst the laggards catch up. No, the choice is to be in the advance party at the front — or to be nowhere and face astronomical catch-up costs in the future. By then it might even be too late. However, we must have convincing responses for our citizens in order to meet the potential risks inherent in this new technological revolution, namely:

- how to prevent the erosion of cultural diversity;
- how to avoid the creation of a two-tier society;
- how to address the future impact on employment;
- how to avoid a widening gap between developed and developing countries.

On employment, I believe there will be many new opportunities in the future — but they will be those requiring different skills and talents. So we must work together as a matter of priority to ensure that there is a successful transition helping people to transform their old skills into digitalized new skills relevant to the new information society market opportunities of the future.

Ministers from the G7 partners will be working from Saturday afternoon onwards, on a set of common core principles that should be applied to tomorrow's global information society. I am confident they will include the promotion of fair competition and private investment, the adaptation of the regulatory framework and the provision of open access to networks. They will also emphasize the need to ensure universal service and equal opportunity for the citizen, taking into account cultural and linguistic diversity and recognizing the necessity to pay particular attention to less-developed countries.

But, as I have said, the scope of the information society and its benefits are not just for the élite corps of politicians, expert regulators and company chairmen. We need the highest possible levels of participation. We need, as Vice-President Gore has recently said, the "... universal service goal of ensuring that all members of society are able to share in the benefits of an advanced information infrastructure which is fundamental to the development of the global information society ...". We need to create awareness and carry our societies along, not kicking and screaming, but with common sense, broad consultation, and consensus and by reacting sensitively to the impact of the information society on jobs and our societal structures.

I said at the beginning of my remarks, ministers at this conference will also have the benefit of the conclusions of the round table of business leaders who meet tomorrow morning. It is, of course, the private sector which will be making the investments that will ultimately allow the information society to succeed, hundreds of billions of ecus and dollars will be needed which is why it is so important we all agree on the basic ground rules.

For the benefits to be fully realized competitive conditions and market access will have to be fair and markets more open to future developments of the global information society. Finger-pointing will not work in this context — every country has some skeletons in its cupboard — some larger than others. Only if market access and competitive conditions are perceived to be comparable, effective, fair and stable will private capital investment be mobilized at the required frequency and intensity. Liberalization of services, infrastructure, procurement and investment conditions are therefore essential elements for global success.

But let us not forget the other key issues we must resolve together — such as interconnection and interoperability, fair and effective licensing and frequency allocation, the protection of privacy and personal data, and the crucial issue of protecting intellectual property rights.

Ladies and gentlemen, the showcase at the conference exhibition is a tribute to the inventiveness and cooperation of the private sector to this conference. I am looking forward to visiting it tomorrow with Vice-President Gore and Deputy President Thabo Mbeki — a hands-on experience that I am sure will be invaluable for us to learn about the potential and power of the New Age information society. I would like the international business community to continue working together after this G7 Conference is over — helping us to map out the road forward with concise, practical proposals.

It is, of course, with the cooperation of the private sector, that I hope the G7 partners will agree this weekend to launch 11 pilot projects — open to all countries in the world — that will trigger and catalyse or even adjust the dynamics of the global information society.

My hope and my belief is that these projects — ranging from cross-cultural education and training, electronic museums and galleries to a global emergency-management system or a global inventory on the information society — will enhance peace-making in the world. I hope that they will reinforce our democratic systems by increasing communication, openness and transparency within and between our countries. They may well change the political process for example through a more “interactive” electorate! In this respect the European Commission has just launched “Europa” on the Internet network to provide information about every aspect of the European Union. So these projects can enable our citizens to do more, know more, and take decisions based on a broader knowledge base. They can provide a meaningful contribution towards increasing competitiveness, productivity and employment — thereby creating an electronic *agora* or marketplace for the world’s innovators, entrepreneurs, marketing experts, researchers and end-users. Put simply, they can act as a multiplier for the development of the global information society.

Your Royal Highness, distinguished guests, let me close my remarks this evening by wishing you all a successful, stimulating, path-breaking G7 Conference. Let us advance our joint aims in a spirit of cooperation. Let us build this new revolution together.

I would like to conclude my remarks with an elegant quotation from Ilya Prigogine, a Belgian Nobel prizewinner. He said as early as 1979 that:

“... Le temps est venu des nouvelles alliances, depuis toujours nouées, longtemps méconnues, entre l'histoire des hommes, de leurs sociétés, de leurs savoirs et l'aventure exploratrice de la nature...”.

The time has come.
Thank you.’

Annex 3

Welcoming address by Klaus Hänsch, President of the European Parliament

'Ladies and gentlemen,

I am delighted, as President of the European Parliament, to welcome you this weekend to the Parliament's building where the exhibition centre and the press centre of the conference are located. I hope this setting will be favourable for some rich and fruitful work.

This gives me the opportunity to thank the President of the Commission, Mr Santer, for his invitation to take part in this conference on the information society.

The topic of the information society is, beyond all doubt, one of the most important, if not the most important, of the last years of this century. It affects every aspect of life in our societies. It is impossible to separate the economic, social, technical and cultural aspects: they are completely interdependent.

The fact was clearly understood by President Delors when he submitted the White Paper on growth, competitiveness and employment: the Union has been working for several months on its implementation. The European Parliament, for its part, has already adopted a report on the subject (on the initiative of Mr Herman, who is here among us today).

Last week, in Strasbourg, Parliament held a debate specially devoted to the present G7 Conference, following which a resolution was adopted.

Our societies, after the disturbing effects of a long economic crisis, are now once more beginning to set themselves a goal, and are recovering the energy needed to build their future. I here wish to insist more particularly on two points:

- the extraordinary development of information technology calls for the definition of new rules;
- unless we take careful measures, and despite the optimistic predictions, the information society will prove to be no improvement on today's society.

The history of Europe has traditionally been characterized by protective legislation governing the means of communication, mainly for reasons of security and limited availability: the finite nature of the existing channels of communication meant that they had to be primarily used for public utility services.

That era is no more. The means of communication available today are ever more numerous — radio frequencies, television channels, computer networks, telephone networks, and so on. It follows that, as far as technology is concerned, we are already in the multimedia age.

This technological fact has immediate economic implications. No enterprise can now survive and develop on the basis of its national market alone. Costs have become so high that companies have to be able to operate beyond traditional frontiers.

The Union is one of the world's biggest trading blocs: it has no fear of competition provided it is fair. As you know, the Union is the world's most open market.

I imagine that all of those present are in favour of open markets. We should not forget however, that the Uruguay Round did not yield an agreement on the essential aspects of the information society.

The aspects of intellectual property (in particular authors' copyright, derived rights and artists' rights), the audiovisual industry, telecommunications infrastructures and services, and the protection of privacy and personal data: the European Parliament has, in its resolution, called on the G7 to set up a standing committee with a view to keeping these problems under review.

The economic aspect naturally leads on to the cultural dimension of the information society. The European Parliament, speaking, I believe, for the Union as a whole, refuses to treat information as just another commodity.

Politics have to define a legal framework which will permit market development while simultaneously ensuring universal access to information and preserving pluralism.

This is absolutely vital, albeit difficult, to reconcile.

Firstly, access to "information on information" must be available to all. In a world where information is becoming of strategic importance, everyone must have access to knowledge, free of charge and know where to obtain it.

The European Parliament therefore supports the idea of a universal and free entitlement of all citizens to be informed of the existence and location and conditions of access to the information provided by networks. Such freedom of access is crucial in the fields of education, health and culture.

Secondly, both the protection of privacy and public security imperatives must be guaranteed in law. Universal access to as much information as possible is desirable provided it does not violate these two principles. Legal measures and technical mechanisms should be devised in this connection.

Thirdly, the two rules of world trade must permit the development of interchange in the area of information. Every enterprise should have access to the different markets of the world's continents. This must, however, be on the basis of fair conditions and reciprocity: for instance, the European markets in network infrastructure, basic services and applications should only be open to third countries if they offer the same opportunities in exchange.

For similar reasons of equity, the Union supports the notion of international standards: the standards laid down by the ISO (International Organization for Standardization) should apply universally.

Fourthly, it is essential that there should be a legal framework with a view to preserving pluralism in the information society. Europe is particularly sensitive to the question of language diversity, which is a cultural asset and part of our identity. I do not believe that technology will in itself impose a single language, even if I am trying to speak in that language this evening.

I believe, rather, that it is both possible and necessary to integrate the notion of cultural diversity into our positions on the new technologies. The existing software and communication products often fail to respect this need for diversity (as in the case of the Internet).

As the President of a parliamentary institution representing the peoples of the Union, I am naturally keenly aware of the potential impact of the information revolution on politics and democracy in our countries.

Numerous leading personalities have been invited to this G7 Conference, including prominent figures from the business world.

I hope you will none the less allow me to express my regret that this conference is overwhelmingly centred on the economic aspects of the information society. There are no representatives of labour here, nor is there anyone to speak for creative artists or for the interests of education, the environment, regional policy or public health. Even so, none of those areas is of secondary importance for the information society.

I am not one of those who believe that technical progress inevitably brings social progress in its wake. Nor do I believe that technical progress is necessarily a threat and a danger to society. I am neither blandly optimistic nor gloomily pessimistic: I believe that technologies are what societies make of them. There is room here for the actions of human beings, societies, economic agents and politicians. The

extraordinary changes we are living through should be understood as calling us to our responsibilities.

I am therefore suspicious of expressions such as “electronic democracy”. There has never been such a thing as “mechanical democracy” or “electrical democracy”. It is true that multimedia technology can help us to breathe new life into democracy; but it cannot be a substitute for democracy, nor will it mean anything without practical action in society and the commitment and participation of the citizens.

If legal guarantees are devised to avert any risk of a “big brother” situation, and if universal access is guaranteed to prevent a split between “haves” and “have-nots”, if, and I say if, these two conditions are met, then a democratic step forward will have been made and representative democracy will have been enriched.

On the other hand there are the risks of a two-speed information society.

Who will have access to the new facilities offered by technology?

Who will be in a position to benefit from the enhancement of democracy?

The information society must not be reserved for an élite. In each of our countries, we must ensure the full participation of public institutions and associations in the development of these technologies, running parallel to the market. At world level, we must encourage the participation of the developing countries.

Ladies and gentlemen, the European Parliament has great expectations of this weekend's conference, which may mark an important step forward on the road to an information society which will also be that more democratic society to which we aspire. If this is to be so, we must avoid technological fantasizing and make an effort to respond to the real needs of our societies, that is, the need to combat unemployment, to preserve peace, to enhance liberty and justice.

We need and will have modern information technologies. What we do not need is an information society but a society where people are free and tolerant, and where they can live as human beings with dignity in peace and social justice.

Thank you.'

Annex 4

Keynote address by Thabo Mbeki, Deputy President of the Republic of South Africa

'First of all, I would like to express our profound appreciation to you Mr President, to the European Commission and to the G7 Ministers present here for inviting us to address the opening session of this important conference.

We also bring to the conference the greetings of our President Nelson Mandela who, similarly, asked us to convey both the best wishes of the people of South Africa to the conference and our gratitude that you selected our country to sit in on your discussions.

We believe that by this act you sought to make the critical point that entry into the information society is not reserved for the G7 members and other developed countries, that the debate about the information society is of relevance to all humanity and therefore cannot ignore the position, the needs and role of the developing society.

With regard to information and communication, we are all witnesses to an extraordinary technological revolution which offers ever more powerful and astonishing capabilities, affecting, primarily in the developed world, traditional patterns of work, public opinion, entertainment, education and so on.

These technological developments once more serve to highlight, emphasize and further enhance the disparities between the developed and the developing countries.

All of us present in this room know that, for instance, access to basic telephony is far from being a reality in many parts of the world.

More than half of humanity has never made a telephone call. There are more telephone lines in Manhattan than in all of sub-Saharan Africa.

We also see similar disparities within our own country — between the developed and the underdeveloped parts of our society. In the city of Durban, for instance, telephone penetration among white households stands at 75%. In contrast it stands at 2% as far as black households are concerned.

Given these disparities, it is clear that bringing the developing world on to the information superhighway constitutes a colossal challenge.

We have to address this challenge, nevertheless, if we are to promote economic growth and development worldwide, consolidate democracy and human rights, increase the capacity of ordinary people to participate in governance, encourage resolution of conflicts by negotiation rather than war and do what has to be done to enable all to gain access to the best in human civilization, within the common neighbourhood in which we all live.

In our own country, having recognized the critical importance and role of information and communication, we began, before our elections last year, to take an intensive look at this whole area, including the question of further building our information and communication infrastructure.

As a result of these early studies and discussions among the various stakeholders in our country, the construction of this infrastructure has been determined as one of the important policy objectives of our reconstruction and development programme, which aims to achieve the fundamental and all-round renewal of our society.

It is of course very true that the new democratic government has a whole range of pressing problems to attend to. These include such issues as job creation, housing, provision of clean water and adequate sanitation, education and health care.

It is, however, also clear that we need a vastly expanded and modern information and communication infrastructure to help us address these concerns, which helps to emphasize the urgency of attending to what, at first glance, might seem to be something to which we should give less priority.

Let me therefore state five principles which guide our own approach to these matters of communication and information which this conference is discussing.

First — the information infrastructure must serve as a means to support our goals of reconstruction and development. In this context we are convinced that information and communication technologies constitute an engine for economic development.

As such, these technologies will, among other things, encourage growth within our boundaries and facilitate the further insertion of our economy into the global economy.

It is obviously on the basis of a growing and dynamic economy that we will be able to address, on a sustainable basis, the pressing needs I have mentioned.

The second principle I would like to mention concerns the region of southern Africa.

We strongly believe that any initiative, the purpose of which is to build and modernize our information and communication infrastructure, must be situated within the context of the needs of the southern African region as a whole.

Regional integration is the key to our approach and is an objective which all the peoples of our region have seized upon because it is both possible and necessary. This must also encompass the area of information and communication.

The third principle I would like to mention is that we must adopt a global approach. It seems clear to us that building our information and communication infrastructure is a multifaceted proposition in the sense that it encompasses economic, financial, technological, social, cultural and moral aspects.

Consequently, the solution to these problems must itself be global in nature, cutting across the traditional segments of the information and communication industry and bringing within its scope social and cultural concerns.

The fourth principle concerns the issue of content. Like all developing countries, we are very keen to acquire and grasp the technologies which enable people and institutions to access astronomical processing, storage, retrieval and delivery capacities.

But we are also extremely interested to ensure that we are not mere importers and consumers of a predetermined content. Rather, we also want to be producers and exporters and therefore active and significant participants in the creation, production and formulation of content, including news, educational and cultural programmes, games, movies, songs, etc.

To give an indication of what we mean by all this, we believe that the modern communication technology we are all talking about must help us educate our children, particularly in the rural and other underdeveloped areas of our country, teach our medical workers and parents how to care for babies, train our youth and eliminate distance and infrastructure imbalances which act as a barrier in providing these social services.

The fifth principle we would like to mention concerns the issue of international cooperation. It is again quite clear that the building of our information and communication infrastructure offers a unique opportunity to enhance international co-operation.

As we have said, we believe that this initiative must be global in nature and involve a great variety of actors, from investors, financiers and manufacturers to operators, educators, artists and so on, drawing into the global project both the domestic and

the international, both South Africans and the peoples of the world, both ourselves and the participants at this conference.

Our late entry into the democratic world order has given us the opportunity to take on board exciting new concepts about governance. I refer here in particular to what is described as the participation of civil society in such governance.

As we draft our new constitution and establish new institutions of government, our eyes are focused on the concept of what we have described as a people-centred society. This requires that the people themselves must be empowered to intervene in the decision-making process.

For this to become a reality, the masses must be able to read, to write and to count and be informed on a global basis, that is to say, not only about the plans of government, but at the same time about the situation in their immediate neighbourhood.

The people must not only be the recipients of communication from the rulers, but should also be able to make their voices heard within the committees in which the rulers sit.

We believe that this radical expansion of the frontiers of democratic participation cannot but enhance the legitimacy of the democratic State, tap the initiative and intellect of millions of citizens, limit any tendency towards arbitrary rule and reinforce social stability and peace.

None of this can be achieved without recourse to the information and communication infrastructure we have been talking about — hence our keenness to move in practical ways towards joining the information superhighway.

Without, in any way, overestimating our own capabilities, and in the context of what we have said about the integration of the region of southern Africa, we believe that South Africa can act as one of the bridging societies with regard to the realization of the common objective of bringing together, in a mutually beneficial way, the interests, the assets and the aspirations of the developing world and the technological and financial capacities that reside in the developed world.

In this context, I would like to say that our government is already considering various concrete proposals relating to the information and communication infrastructure.

These proposals include the possibility to lay a fibre optic cable encompassing the whole continent of Africa, the extension of the telephone network to rural and underdeveloped areas of South Africa, and a project sponsored by an international consortium which addresses our information and communication needs on a global, rather than piecemeal basis.

In all these instances, we would look forward to the participation, on the basis of partnership, of the private sector represented at this conference.

At the same time, we would require that this critical international involvement should link up with our own domestic production and communication capabilities, while also encouraging and enabling the participation of small and medium[-sized] business.

Undoubtedly, the concrete discussions that will flow from these initiatives will bring to the fore the important regulatory question which is one of the items on the agenda of this conference.

Among other things, adequate regulatory frameworks would have to address the all-important issue of ensuring that the developing world does not enter the information superhighway as a second-class road user.

For instance, where the flow of information and cultural products on the information superhighway will originate mostly from the developed North, this naturally becomes a cause of concern to relatively less media-intensive cultures.

I strongly believe that censorship and control are not an appropriate way to deal with these worries.

The best insurance against the swamping of people's cultures is the re-invigoration of their creative spirit and universal appeal.

We, in the developing world, have much to contribute and the superhighway should usher in an era where this contribution ultimately binds humankind closer together and enables all to shape our common destiny.

This leads me to the last point I would like to make.

We believe that this initiative, which has brought us to Brussels, needs to be followed by another one, bringing together a cross-section of the developing world together with the G7 group and the European Union, in recognition of the global information and communication challenge, to exchange views on such questions as strategy, finance and international coordination.

We trust that the distinguished President of the European Union, our host on this occasion, will find time to consider this proposal and perhaps agree to sponsor what we believe would be an important and necessary encounter.

I am certain that our own country, if called upon, would seriously consider the possibility of hosting such a conference.

Please accept our best wishes for the success of this conference and our thanks for your attention.

Thank you.'

Annex 5

Keynote address by Al Gore, Vice-President of the United States of America

'My friend, James Burke, the historian, tells a compelling tale about the last information revolution and the changes it wrought.

Over 500 years ago, not far from here in Germany, a goldsmith who had bungled a sure-fire money-making venture by getting a crucial date wrong, was looking for a way to mollify his business partners. He decided to use his goldsmithing skills to mould what became known as movable type and to use the type in his new printing press to print the one book he knew would sell — the Bible.

In this case, the Gutenberg Bible.

Now, inventions rarely spring full-blown from one brain, totally without precedent, Gutenberg's invention is no exception.

After all, movable metal type had been invented in Korea 200 years earlier. But conditions conspired to keep that first movable typeface from spreading. Confucianism prohibited the commercialization of books and Korean royal presses would print only classical Chinese literature, not the more popular Korean literature.

By Gutenberg's time, there were better conditions: better paper, better metals and eyeglasses. And Europeans were ready for a cheaper way to copy books than using scribes who charged for one copy what a printing press would charge for a thousand.

The result: not only books, but enlightenment; the scientific revolution; the Age of Reason and the political revolution symbolized the document I am sworn to uphold some 200 years after its drafting — the Constitution of the United States.

All, in a way, from a goldsmith's mistake.

What lessons can we draw from Gutenberg's spectacular success? Let me name two.

First, our view of the future and our ability to exploit and develop a new idea are always constrained by the circumstances we find ourselves in at the moment. Yes, Gutenberg had a great idea. But he is given credit for revolutionizing our culture because he exploited his new idea at a moment when the circumstances were conducive to the rapid spread of print technology.

Second, change is incredibly hard to handle, manage and predict — or, as the physicist Neils Bohr once said “Prediction is very difficult, especially when you are talking about the future”.

We gather here today to chart a path to the future — at a time when prediction is as difficult as ever, but also at a time when our circumstances are clearly conducive to the rapid spread of a new capacity to process and communicate information that will benefit all humankind. It is a path that will take us from our shared vision to a new reality. Just as human beings once dreamed of steamships, railroads and superhighways we now dream of the global information infrastructure that can lead to a global information society. But our dream today is not fundamentally about technology. Technology is a means to an end. Our dream is about communication — the most basic human strategy we use to raise our children, to educate, to heal, to empower and to liberate.

In its most basic form, communication is the transfer of information from one human being to another. Information, in turn, is the raw material of knowledge, and knowledge sometimes, if we are lucky, ferments into wisdom. And of course, in all of our countries it is by now a cliché to note that the information revolution now in its early stages will ultimately transform our concepts of both communication and information.

The changes wrought by Gutenberg are our common heritage. The changes we are here to discuss will become our common legacy. Today I would like to outline some principles that the Administration of President Bill Clinton believes ought to determine the kind of legacy we leave.

Last year in Buenos Aires I attended the first World Telecommunication Development Conference to present the United States’ vision of a global information infrastructure that will promote robust and sustainable economic progress, strengthen democracies, facilitate better solutions to global environmental challenges, improve health care and, ultimately, create a greater sense of shared stewardship of our small planet.

The Buenos Aires Conference adopted a set of basic principles we believe are the building blocks of the GII:

- private investment
- competition
- open access
- universal service
- flexible regulations.

These principles have been central to the discussions about the GII in bilateral, multilateral and regional forums, most recently at the APEC meeting last week in Vancouver, but also at the Summit of Americas meeting in Miami last December and in memoranda of understanding between the United States and both Russia and Ukraine.

They will be central here in Brussels, at this meeting, proposed by President Clinton, and graciously hosted by the European Union under the leadership of President Santer and former President Jacques Delors. For the first time, more than 40 representatives of the private sector are formally participating in this conference. They and the hundreds more who are participating informally are demonstrating at this conference an impressive array of applications that signal to the world that the G7 nations are committed to leading the development of a GII by their example in word and deed.

The very act of holding this conference is in keeping with the advice given to dreamers long ago by Mahatma Gandhi: "You must become the change you wish to see in the world."

Moreover, moving forward aggressively on a GII is the best way to deal with concerns highlighted during the G7 jobs summit in Detroit last year. At that conference we confronted the central dilemma facing every government: how do we make sure our economies provide enough jobs?

The initial OECD jobs study outlined the connection between jobs and what we do here. Those nations best able to adopt the new technologies for a knowledge-based economy have been the best at creating jobs.

The fact is that government policies based on faulty assumptions that try to block change or protect the status quo have themselves become job-destroyers. This time we have a chance to get it right. We can open markets to create job opportunities. We can use education and training to enable more workers to adapt to the new workplace.

The liberating effects of these new technologies have been clear around the world. Satellite stations brought medical advice to those tending to the suffering in Rwanda. Radio and TV broadcasts in South Africa promoted the role of voting in a democracy. Wireless technologies are allowing emerging nations to leap-frog the expensive stages of wiring a communication network — for example, in Thailand,

where the ratio of cellular telephone users to the population is twice that of the US.

The effects are also visible in education. One of the biggest handicaps for those who want to learn has been distance. In Washington, the Library of Congress is a wonderful place. But we must ensure it becomes a tool for, let's say, a schoolgirl from my hometown in Carthage, Tennessee, 600 miles away.

Already, distance education is helping some citizens overcome geographic difficulties.

In Japan, over 100 institutions are linked by computer and satellite, with some 150 000 students currently enrolled.

In India, there are five open universities and more than 35 distance learning programmes in conventional universities.

And in Canada, the Knowledge network delivers courses to adult students living on islands in British Columbia.

In France, the newly-discovered cave paintings in Ardèche, almost impossible to reach in real life, are accessible on the Internet to scholars, teachers, and most important, children.

The Clinton Administration is committed to the goal of connecting every classroom, every library, every hospital and every clinic to the national and global information infrastructures by the end of this decade.

We must provide our teachers and our students with the same level of communications technology that shipping clerks, construction workers and government officials use every day.

Information technology is a critical element of economic policy. But there are great obstacles.

How do we begin the hard work of turning the obstacles before us into opportunities?

First, by focusing squarely on those who will drive the demand for information products and services: the users.

User demands will define the market-place.

Competition to serve the users will speed up innovation and cost-effective deployment of new technologies. Private investment in diverse technologies will mean new sources of capital and expertise for rich and poor nations alike.

Computer networks have created whole new, rapidly growing markets. These networks help small and medium-sized enterprises from both poor and rich countries to become more effective competitors in world markets.

In the United States, our spectrum auctions have speeded up the licensing of personal communication services and are leading to the creation of hundreds of thousands of jobs in the next several years — one indication that communication is a source of economic change and growth, not just the result of it.

The GII will not be created in one place at one time by any one group. It will be the product of cooperation among governments, industry and citizens on a global scale.

But how do countries with widely varying needs, cultures, and technologies cooperate?

First, by acknowledging that the fruits of our cooperation should be open access to markets for all providers and users of creative content and information products, equipment and services.

For the competitors in the 21st century global economy, there is no substitute for being in the market-place and providing the users we represent [with] the greatest variety of products, information and services for the least cost.

Second, building the GII is going to require robust competition. And you cannot create robust competition by excluding competitors, whether those competitors are at home or abroad.

It is vigorous competition — which means global competition — that creates jobs.

And so I say on behalf of President Clinton, let the message of this conference be clear: we support competition in open markets that allows any company to provide any service to any customer.

What concrete actions must we take to realize that goal?

First, we must drop our barriers to foreign investment together. For more than 60 years the US has had limited restrictions on foreign investment in certain telecommunication services. In this respect, we are going to change and change this year. Whether by new law or new regulation, we intend to open foreign investment in telecommunications services in the United States for companies of all countries who have opened their own markets.

But we also recognize that the information society demands more than a piecemeal approach. The governments represented here and others have a historic opportunity to open telecommunications markets around the world in the negotiations within the General Agreement on Trade in Services. The deadline for these negotiations is April 1996.

Let us resolve to meet this deadline to remove our investment barriers together.

Second, let us develop and enforce effective intellectual property rights for the GII. If our content-providers are not protected, there will not be content to fill the networks and give value to services.

Third, all parties should participate in the development of private-sector, voluntary, consensus standards through the existing international organizations, such as the International Telecommunications Union, the International Standards Organization and the Internet Society. The creation of truly global networks will require a high degree of interconnection and interoperability.

Governments are not the best arbiters of technology, and government intervention risks encouraging adoption of standards that are either ultimately inferior or inappropriate to demands of the market.

Our vision of an information society is one in which the most valuable resource — information — is also the most abundant.

My hope is that the open exchange of ideas of all sorts and the greatest access possible for all citizens to the varied means of communication will stimulate creativity.

Global communication is not about conformity. Some fear that in losing the distance between ourselves and others we lose our distinctions as well. But communication is about bridging the differences between nations and people, not erasing them.

It is about protecting and enlarging freedom of expression for all our citizens and giving individual citizens the power to create the information they need and want from the abundant flow of data they encounter moment to moment.

Communication is the beginning of community. Whether it is through language, art, custom, or political philosophy, people and nations identify themselves through communication of experience and values. A global information network will create new communities and strengthen existing ones by enriching the ways in which we do and can communicate.

Ideas should not be checked at the border. We have much to learn from each other and we should follow practices and policies that incorporate, not exclude, the greatest diversity of opinions and expressions. We all gain from the exchange of

cultural viewpoints and experiences that occur when open minds engage each other.

At the same time, users of the GII want and will demand privacy. When you ask Americans about information technology, it is their biggest concern. We must protect the privacy of personal data and communications.

Governments and industry need to work together to develop new technologies, new standards, and new policies that will provide the necessary security and privacy protection.

Of course, in order to protect privacy and financial transactions and enforce intellectual property rights, the GII must be secure and reliable. The OECD should continue its leadership in the area of computer security.

Fortunately, technology and human imagination keep providing us with new opportunities to enhance our communication capabilities. Take, for example, non-geostationary satellites. They hold remarkable potential, especially for remote or thinly populated regions, and for societies eager to reap the benefits of 21st century technology, even before completing expensive land-based networks. These advanced technologies can provide everything from basic telephone calls to remote medical diagnosis. Like the Internet, they have the potential to knit together millions of people in different locations and situations — and do it economically.

Every one of the low earth orbit satellite systems — and, in addition, the intermediate-orbit Inmarsat-P affiliate — is multinational, and each satellite consortium welcomes and actively seeks out the participation of both developed and developing countries. Of course, each nation retains the power to determine whether the LEOs may serve it. But countries that license these international satellite consortia help their business communities become more competitive in the global economy and provide their citizens beneficial satellite services.

Our purpose in meeting here together is to advance our common goal of a global information infrastructure that will bring to all countries the benefits of a global information society.

Our challenge today is to create the commercial, technical, legal and social conditions that will establish the foundation for the GII.

As we work across our common boundaries and oceans to build a GII, we cannot think only of today's debates about wireless or satellites; we must perform our work in the service of a global vision that can be realized in every community and village in the world.

I began by talking about Gutenberg, whose voyage of discovery has influenced the lives of every person on this planet.

His was not an easy voyage. There were sceptics and enemies; when his financial backer took 12 Bibles to Paris the book-dealers took him to court, arguing that so many identical books could only be the work of the devil. His work challenged his society to change.

And they learned what we cannot ignore: that we cannot choose to delay or deny the future; we must make ready for it.

There is no better way to prepare for the future than to make the best of the present.

That is why a shared vision is so necessary. We have now a great opportunity to see the world in a new light and to rethink the way it operates and the way in which we should operate within it.

I have outlined today the concrete steps we must take to embark on this new voyage of discovery. Empowered by the movable type of the next millennium we can send caravans loaded with the wealth of human knowledge and creativity along trails of light that lead to every home and village. I thank you for your devotion to this vision and look forward to our journey together.'

European Commission

**G7 Ministerial Conference on the Global Information Society
Round-table meeting of business leaders**

Luxembourg: Office for Official Publications of the European Communities

1995 — 102 pp. — 17.6 x 25 cm

ISBN 92-827-4094-3

Price (excluding VAT) in Luxembourg: ECU 10

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