



Geneva, 10-17 October

Telecom 99 + Interactive 99 Forum Reports

SESSION INF 2

Information Infrastructure Evolution

Chairperson:	Prof. François Fluckiger, Head, Networking Technologies, CERN
Keynote Speakers:	H.E Mr Leonid Reiman, Chairman, State Committee for Telecommunications of the Russian Federation Mr Terence Matthews, chairman and CEO, Newbridge Networks
Moderator:	Mr Dan Kiernan, Director Regulatory Affairs, Alcatel CIT
Panelists:	Ms Martine Lapierre, Vice President, Switching and Routing Division, Alcatel Mr Akira Arutaki, Senior Manager, NEC Corporation Mr Fred Sammartino, Director, IP Marketing, Lucent Mr Hyeong Ho Lee, Director of Routing, Technology Department, ETRI
Rapporteur:	Marie-Noëlle Sauvayre, Network Architect, R&D Equant

Topic

Convergence, globalization and new network/service technologies open new paths for building the information

infrastructure of the future. We are at the crossroads. The panel focuses on middle and long term evolution perspectives.

Summary

The panel has learned from experience:

ISDN did not come up to the initial expectations because it was not ambitious enough in terms of bandwidth.

On the other hand, ATM did not succeed at the edge because initially there was not enough bandwidth available at the access and so, it was not worth

investing in this costly technology. However, ATM found its justification in the core of networks. Today, ADSL could pave a new way for ATM at the access.

At the same time, IP succeeded both at the edge and to a certain extent in the core mainly owing to its simplicity.

Why make the infrastructure evolve ?

Mainly thanks to improvements in user access speed, new applications are emerging: Multimedia, unified messaging, VPN that require evolution in network services and thus, of the whole information infrastructure. New entrants in the telecommunications market (Competitive Local Exchange carriers, ISPs, content providers) also push for converged solutions.

New infrastructure model

A simplified infrastructure model was agreed upon by the participants:

In the core, the trend for transmission lines is DWDM with most of the functions currently performed at SONET/SDH level, little by little integrated inside optical components.

For at least the next 5 years, the core nodes will be a mix of IP and ATM, ATM being still used for deterministic network provisioning, traffic engineering and support of protocols other than IP. MPLS is still in its infancy but is promising regarding its traffic engineering capabilities because it can work in an IP/ATM integrated mode rather than a less efficient overlaid mode. However, the standardisation effort must progress before it can replace ATM.

The emerging components are Multiservice access nodes and Multiservice servers located at the edge of the network.

MultiService access nodes aggregate and handle all kinds of user terminals/protocols/devices. They are the interface between the user environment and the network.

These platforms are connected to (or integrated with) Access Servers where the intelligence of the network is located. This is where all functions for the association user/service are performed that is to say where the access of users to services is enabled and controlled. Examples of these functions are : call control, setting of QoS parameters, security functions.

These servers interface with the network edge nodes by the use of open APIs.

IP Hypes and hopes

Regarding IP QoS, participants emphasize the lack of convergence on the standardisation front but see IETF DiffServ initiative as one major enabler, even if not the only one. Regarding Voice over IP, panelists see also a convergence on a minimal basis there but do not think that IP signalling protocols under development (RSVP, H323, MGCP, SIP, SigTran) will rapidly be able to cover the same scope of services as those developed with IN (SS7).

Convergence of industries

This session concludes on the emergence of Application Service Providers that is triggering a shift in traditional carriers, network service providers and telecommunication manufacturers position. All network service providers are impacted either by simply adapting their network infrastructure for these new entrants or by positioning themselves as ASP.

SESSION POL 3

Global Access to Scarce Resources

Chairperson:	
First Keynote Speaker:	
Second Keynote Speaker:	
Moderator:	
Panelists:	
Rapporteur:	Prof. Christian Bovet, University of Geneva (Switzerland)

Session Report

This report is based on the discussions that took place during the session and on the papers submitted by the panellists. It is divided into three groups of remarks:

FIRST, it appears that in today's world actual scarcity is hard to find. Even when we identify situations where resources are limited (e.g. frequencies or orbits), it is very likely that there are technological or regulatory means that will help the industry to solve the problem. In other words, scarcity itself seems to be a limited item. In fact, some people wonder whether it really exists and

whether the term "finiteness" might not be more appropriate. This statement might sound provocative, but perhaps it is not so far removed from reality. Here is a simple illustration regarding domain names or numbering: numbers are always a scarce resource, but it is also always possible to change numbering systems, although we are all aware of the practical and technical difficulties involved in such changes. It seems that solutions of this type could apply indifferently to the telephone and Internet sectors. A more sophisticated remedy concerns the sharing of frequencies. In this field there is agreement as to the possibility, and technology seems to be both available and reliable.

SECOND, there is consensus about the need for intervention by national and especially international regulators in order to allocate – perhaps we should rather say "manage" – telecommunication resources. In particular, one should pursue the efforts initiated by the WRC-97 in respect of paper satellites and similar issues. Thus, administrative due diligence should be considered only as a first step. Regulators might find here a new function that will probably evolve in this post-liberalisation period. Harmonisation is certainly one of the main demands put forward by the industry; co-ordination and mediation may also become more important than they are today. This evolution might be quite rapid since it is likely to follow the pace of the market. Regulators will therefore have to adapt to the new environment. Nevertheless, it is also true that the traditional role of regulators as real administrative authorities handing down decisions will be maintained. Finally, once liberalisation is fully in place, competition will naturally act as market regulator in several fields, but the need for specific sector regulators will remain.

FINALLY, it is worth mentioning the conclusions reached in respect of the auctioning of spectrum resources. It is recognised that this procedure is not a panacea, but only one of many possible solutions. On the other hand, it is generally considered to be the most neutral, transparent and market-based measure. It should be conducted by an independent regulator; one might envisage introducing elements that would temper a pure auctioning process. An original proposal was formulated, namely that concessions should be granted to the candidate offering the lowest telecommunication rates; bankruptcy risks are, however, rather high in such situations.

The use of the licensing proceeds was also debated – in particular, where the latter relate to satellite orbits or spectrum. In order to take into account the fact that at present it is mainly developed countries that are able to participate financially in an auction procedure, it was proposed that a special fund be created or that equipment resources be shared with developing countries.

SESSION COM 6

Human Resources Issues

Under the overall rubric, the session was divided into two distinct sections: (i) The Corporate Priority and (ii) Empowering Women in the Developing World. These are reported on separately.

Chairperson:	H.E. Ms. Lyndall Shope-Mafole, Plenipotentiary Minister of Communications, Embassy of the Republic of South Africa, Paris (i) and (ii)
First Keynote Speaker:	Mr. Robert Verrue, Director-General Information Society, European Commission (i)
Second Keynote Speaker:	H.E. Mrs. Aissata Tall Sall, Minister of Communications, Senegal (ii)
Moderators:	Ms. Walda Roseman CompassRose International Inc. (i)
	Ms. Gillian Marcelle Vice-Chairperson, ITU Gender Task Force (ii)
Panelists:	(i)The Corporate Strategy
	Ms. Surinder Hundal, Director, Public Relations and Corporate Communication ICO Global Communications
	Ms. Mary Jane Peters, Assistant Secretary, CCAQ United Nations
	Mr. B.K. Syngal, Chairman, Reliance Telecom, India
	Mr. Jacky Tallec, Director of Human Resources, France Telecom
Panelists:	(ii)Empowering women in the developing world
	Ms. Oliva Acosta, Project Manager, Womens Human Rights Net (WhrNET)
	Ms. Alison Gillwald, Director, Link Centre, University of Witwatersrand, Johannesburg, South Africa
	Ms. Christine Maxwell, Member, Board of Trustees, Internet Society (ISOC)
	Ms. Carmella Rhone, Director General, Ministry of Commerce and Technology, Jamaica
Rapporteur:	Mr. Roger Eggleston, Secretary, CCAQ, United Nations (i) and (ii)

The Corporate Priority - Building expertise for the next Millennium

People matter most: a cliché that, for all its simplicity, embodies a wealth of current research¹ which shows that:

companies and organizations will succeed or fail depending on how they manage human resources;

in developing a corporate strategy, people are more important than the four other “p’s”: product, price, promotion of the product and the place where the product is sold;

people management is what keeps chief executives awake at night;

intangibles (talent, innovation and employee morale) are the critical drivers of corporate performance in knowledge and service-based enterprises.

These findings apply equally to the private and public sectors. All too frequently, the management of human resources in telecommunications as in other sectors has been a “cinderella” in a world dominated by profitability and financial management too often an afterthought on the Board agenda.

In his keynote address, Robert Verrue confirmed that the development of human resources is one of the most formidable challenges which affects telecoms and the IT sector, governments and other industry sectors alike.

The backdrop is clear:

the “digital” state is part and parcel of daily life in all continents; it can - and must - improve the standing of living of all the world’s citizens;

competition for resources is acute and is likely to become more so; there is a skills shortage - in the European Union alone the shortage of IT specialists, estimated at 1/2 million in 1998, could reach 1.6 million by 2002 unless necessary initiatives are undertaken.

If the IT sector does not take these initiatives, the information society will not bring the benefits it promises, enterprises will be subjected to technical bankruptcy; there will be geographical shifts in production, increased costs; thus severely influencing competitiveness. In short, there are great dangers ahead for the Information and Communication Technology (ICT) sector.

Robert Verrue listed a number of areas of current concern including:

¹ See end notes.

the failure to motivate and interest young people in the sector, to “re-school” workers and provide for life-long learning;

the failure to address the gender imbalance in the sector;

the lack of cooperation between private and public sectors in addressing these matters;

the lack of up-to-date statistics on what skills are lacking or are expected to be needed over time;

the failure of government to be proactive in setting a good example.

What can be done?

Robert Verrue and the panelists identified potential solutions in three interlinked areas; the educational environment, the work place and the repositioning of human resources management in the strategic management of IT companies, as follows:

in all countries, in all continents, the “digital school” has to become a reality; students have to have access to hard- and soft- ware, to learn how to use them and go on learning how to use “new” technologies (life long learning);

human resources management has to be given its rightful place in hierarchies; the HR manager is as important as the financial manager on the board or in an organization’s management team;

the workplace has to be made a centre of learning, re-skilling and creative encounter - a place where flexibility, adaptability and innovation are rewarded;

equally importantly, learning must be applied effectively and efficiently; in the next millennium, corporations’ Chief Knowledge Officers (CKO’s) or Directors of Intellectual Capital (DIC’s) will need to ensure the creation of a knowledge base which will include best practices, expert directories, market intelligence, knowledge gathering, and, most importantly, identifying knowledge skills and ensuring knowledge flow;

management style has to change; overly controlling environments have to be replaced by those which, through making creativity a goal, encourage younger people and women to stay in the profession; glass ceilings have to be broken; conditions of employment have to balance work and personal needs by promoting telecommuting and the like;

the “soul” has to be put back into the company; the “machine” must not become a substitute for human interaction;

intercultural differences which have negatively affected IT mergers in the recent past have to be recognized as positive forces which can be built upon to introduce change; companies have to become less ethnocentric;

recruitment to the IT profession cannot remain a matter solely of qualifications and length of experience; behavioral competencies have to become key measures in the assessment of candidates for selection and promotion, especially in moving from technical to managerial jobs.

Who can introduce such changes?

Such reform engages all the players in a cooperative compact, be they Governments, chief executives or international and national entities.

Together they must forge an Information Society which:

rewards the continuous learner;

provides citizens with accessible information and services when and where they need them through e-administration;

reallocates resources to support investment in ICT and training;

is more responsive to customer needs.

The Information Society for its part will:

stimulate economic growth and productivity;

create new economic activities and jobs;

improve educational opportunities, health care delivery and other social services;

improve access to cultural and leisure opportunities.

Action is required by these players **now**; without it human resources mismanagement will lead to bottlenecks and migrations of talented employees, jeopardizing the viability of companies.

(ii) Empowering women in the developing world

These messages about developing human capital in the industry were graphically extended to the global perspective by those addressing the second part of the session on the subject of empowering women in the developing world. And not only in the developing world. By example, the speakers extended the

debate to women everywhere, at least in the context of the IT industry.

Consider the following:

Women are traditionally marginalized; of the 1.3 billion people below the poverty line, 70 per cent are women. Two thirds of the world's work is done by women, yet they receive barely one-tenth of the world's income.

Men dominate the IT sector, even in countries where women are as highly educated.

Notably in Africa, but also in other continents, women have so much to do to meet their own and their families' basic needs that they neither have time to feel sorry for themselves nor even to question their lot.

Such were the dramatic descriptions of the state of the world's women brought forward by the second keynote speaker, Her Excellency Aissata Tall Sall.

Above all else, strategies are needed to improve the health and education of women in the developing world; a supportive economic and regulatory environment has to be created to nurture the start up of small enterprises by women.

How can IT help contribute to such improvements?

In response, the speakers returned to the refrain of the first session; **education, education and more education.**

Though here there was a change in emphasis. What is sought is not more training of those in the already male dominated industry which would only reinforce mind set, but rather training those outside the industry:

training for jobs using informatics;

training in technology skills,
programming, software development, etc;

training at the university level;

and, most of all, training of children - girls and boys - from the moment they are able to see a screen and touch a keyboard.

Yet, here again, Minister Tall Sall exposed a dichotomy faced by governments and regulators: Do we spend national income to build classrooms or do we redeploy these resources to give children access to the internet? The answer is particularly complex for governments in the developing world. What are and what will be the cultural expectations of societies? What value will be placed human interaction in the next millennium?

A second common thread between the two sessions also emerged - building collaborative partnerships between the players; governments, companies and international and national entities to bring women closer to the industry and the industry closer to women.

In Jamaica, for example, government and industry had forged a new partnership - within the context of a shared vision - which has made it possible for them to work together to put telecommunications at the centre of an information age technology that will drive the economy and empower all people - women and men alike. As a result, the service provider is investing heavily in the informatics industry in making telephone and internet access available to all those who live in rural communities.

The example highlighted another dichotomy. Privatization of the industry is the current clarion call; but privatization reduces the influence of government in the process - profit motive may replace concerns for rural communities unless, as underscored in the Jamaican example, the parties have come together to determine how potentially competing priorities can be brought into a shared vision.

Nevertheless, governments or other regulatory bodies have the power to intervene to increase the participation of women in the IT industry. For example, they can:

set requirements for the participation of women in the ownership and control of telecom operations;

base their evaluation and monitoring of competing operators *inter alia* on the extent to which those operators are supporting the recruitment, training and promotion of women;

set an example by placing women in positions where they can influence policy-making.

The gnawing concern remains, however, that such examples will not immediately benefit the mass of women - often illiterate - who are below the poverty line. How can the most marginalized benefit from the information society?

Regulatory intervention here requires more courage as the waters are little charted. There are nevertheless examples in a number of countries of targeting subsidies to women, whether in single-headed households or not, to provide them with access to telephony, emergency services, advice on children's health and the like. This has a significant spin-off effect in terms of overall national development as research confirms that by virtue of their role in the household, subsidies invested in women have a longer lasting benefit than those invested in men.

Moreover, technology enables women to work from home; this, taken together with use of the Internet,

helps reduce inhibitions to the technology itself. The Internet is gender neutral.

But at heart the issue remains that of empowering women who are, or who believe themselves to be, marginalized by, for example:

helping them, through IT, to solve problems where they occur, for example by providing them Internet access to find out how to look after a child with a fever;

providing them with information about how to earn money;

ensuring that they will have experiences which meet their needs for self-fulfilment; and in the process:

recording successes and repeating them

recording failures and learning from them and above all:

unleashing through informal ways of learning, the unique creativity which gives strength to women.

As Minister Tall Sall concluded: **Women missed out on the benefits of the industrial revolution; they must not miss out on those coming from the information revolution.**

End Notes

See for example:

Ernst and Young, Telecom 99 CEO Interview Presentation (summary Results December 1998).

Cappelli, Peter. *The New Deal at Work; managing the market driven workforce.* Harvard Business School Press, 1999.

Ulrich, Dave. *Human Resource Champions; the next agenda for adding value and delivering results.* Harvard Business School Press, 1997 and also an address by Dave Ulrich to a United Nations System Conference on Human Resources Performance, Competencies and Practices: the Vital Links, held in New York in July 1999 (Report shortly to be published).

Fitz-Enz, Jac. *The 8 practices of Exceptional Companies: How great organizations make the most of their human assets.* American Management Association, 1997.

Wharton School/Ernst and Young research program on Value Creation in Organizations, University of Pennsylvania, 1997.

SESSION COM 7

Telecommunications in the Service of Humanitarian Assistance

Chairperson:	Mr. M. Harbi, Head of the Strategic Planning, External Affairs and Corporate Communications Units, International Telecommunication Union (ITU)
First Keynote Speaker:	Mrs. S. Ogata, United Nations High Commissioner for Refugees (UNHCR)
Second Keynote Speaker:	Mr. M. Harbi, ITU
Moderator:	Mr. H. Zimmermann, United Nations (UN)
Panelists:	Mr. L. Price, International Amateur Radio Union (IARU)
	Mr. M. Wood, Ericsson
	Mr. T. Azzabi, Revue Communications

Introduction

Disasters strike their terror mercilessly across man-made boundaries, causing tremendous loss in lives and property. However, modern means of telecommunications, ranging from GMPCS to amateur radio, can help alleviate sufferings by being employed in disaster prevention and mitigation. These scenarios were vividly presented in a 3-minute video presentation directed by Mr. Harbi, the Chairperson of the session, and accompanied by the music of Pergolese's *Stabat mater*.

The Need of the Humanitarian Community

The first keynote speaker, Mrs. Ogata, the United Nations High Commissioner for Refugees, briefly introduced her agency and expressed her disappointment that there is unfortunately still the need for its existence. She then made a five-point appeal to the telecoms industry:

for simple, very reliable and cost-effective communication equipment, particularly satellite phones, VHF and HF radios and data transmission equipment, on a donation or cost-sharing basis;

for cheaper access to satellite links to be able to move information fast and reliably between the various points involved in large-scale humanitarian operations;

for greater access to the Internet in order to raise awareness of refugee problems and promote a more positive image of refugees particularly in Europe, reminding the audience that both Albert Einstein and Andy Grove (Intel) were refugees at some point in their lives;

for access to computer technology to launch education programmes for refugees. She was particularly keen on this project because refugees have potential and they must be given opportunities;

for support of specialized staff to develop the required systems and operate them.

Mrs. Ogata's call was echoed by a representative from TC2, a private company, who offered his company's help to achieve some of the aims but more interestingly proposed that a pool of mobile equipment that would fulfill the needs of rescue teams be put together by industry players and made available on request to HCR.

The International Efforts in Emergency Telecommunications

The second keynote speaker, Mr. Harbi, stressed that disaster mitigation and relief operations require strong cooperation among the international community. He explained that the work of the providers of international humanitarian assistance is carried out by relief agencies whose vital telecommunications are often hampered by various barriers. These barriers may take the forms of regulatory constraints, restriction on frequency use, delays in type approval process, and stringent licensing requirements, among others. Recognising these difficulties, the United Nations proclaimed the 1990s as the International Decade for Natural Disaster Reduction (IDNDR) and organized the World Conference on Disaster Communications in 1990. This was followed in 1991 by the Tampere Conference on Disaster Communications which for the first time proposed an international convention on emergency telecommunications.

Enter the ITU

Mr. Harbi then outlined the role of ITU in this area. The ITU World Telecommunication Development Conference (Buenos Aires, 1994), adopted its Resolution 7 on Disaster Communications requesting ITU to increase its involvement in disaster communications. This resolution was endorsed by the ITU Plenipotentiary Conference (PP-94, Kyoto, 1994) in its Resolution 36, which became the keystone in the development of the draft Tampere Convention on Emergency Telecommunications. In this respect, the ITU worked closely with the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and the Working Group on Emergency Telecommunications (WGET) which comprised of partners in international humanitarian assistance and telecommunication provisions, including the Secretariat of IDNDR and the International Red Cross and Red Crescent Movement.

Two other ITU conferences, WRC-97 and WTDC-98, also adopted resolutions urging ITU Member States

to give their full support to the adoption of the Tampere Convention.

In 1998, the Intergovernmental Conference on Emergency Telecommunications (ICET-98) adopted the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations. There are currently 45 signatories to the Tampere Convention. The latest ITU Plenipotentiary Conference (PP-98, Minneapolis, 1998) renewed Resolution 36, urging Member States to work towards the earliest possible ratification, acceptance, approval or final signature of the Tampere Convention.

The Tampere Convention

The Convention provides a legal framework for international telecommunication assistance in humanitarian relief. It sets out well-defined yet flexible terms for the provision, termination, repatriation and remuneration of international telecommunication resources used in disaster reliefs. It also defines the privileges, immunities and facilities of international emergency telecommunication workers. It encourages signatories to reduce and/or remove regulatory barriers against efficient deployment of disaster telecommunication resources, and it provides for the development of model agreements in such deployments. The most distinguishing feature of the Convention is that it allows "non-state entities" to avail themselves of some of the Convention's benefits when they are providing international emergency telecommunication assistance.

Saving the Lives of Those Who Save Lives

Mr. Zimmermann, United Nations Senior Humanitarian Affairs Officer in charge of emergency telecommunications, emphasized the plight of the humanitarian workers in the field who are constantly exposed to dangers. He urged for support of Resolution 98 of PP-98 concerning the use of telecommunications for the safety and security of humanitarian personnel in the field.

The Role of the Amateur Radio

Mr. Price of IARU introduced his organization and clarified that the radio "amateurs" were actually those who possess advanced knowledge in the radio art and science. They often play a key role in fulfilling the urgent telecommunication need of a community during the aftermath of a disaster. The IARU also strives for the introduction of an International Amateur Radio License which will greatly facilitate international telecommunication assistance for disaster reliefs.

The Role of the Private Sector

Mr. Wood of Ericsson pointed out that the private telecom sector has always taken part in assisting

humanitarian reliefs via telecommunication means, e.g., in Kosovo and more recently in Turkey and Greece. He expressed the hope that the private sector can further utilize the Tampere Convention in creating a "win-win" scenario whereby disaster-stricken countries will obtain acute telecommunication assistance without undue hindrance, while companies may explore new market opportunities in the restoration of telecommunication services.

The Role of the Media

Mr. Azzabi of Revue Communications also suggested that the media may play a more active role in both disaster preparedness dissemination and disaster readiness education, for example with respect to earthquakes.

Discussion / Summary

The session witnessed active participation from the audience members, with lively and constructive exchanges of views between them and the panelists. The Chairperson summed up the session with the following points for action:

The five appeals to the private telecom sector by Mrs. Ogata could best be worked out by holding a roundtable among the ITU, the aids agencies and the private sector to discuss the needs in details and devise ways top meet them;

That efforts toward the ratification and implementation of the Tampere Convention could use the support of private sector in, e.g., the development of model agreements for provision of telecommunication assistance;

that the current allocation of frequency for the amateur service should not be reduced by future World Radiocommunication Conference and that the an International Amateur Radio License should be introduced as soon as possible.

The Chairperson also expressed his satisfaction that although this session was held in parallel with two other very important sessions - IMT 2000 and E-Commerce - there were more than 200 audience members present in this session, testifying to the worldwide enthusiastic interest in the noble subject of telecommunications in the service of humanitarian assistance.

Follow-Up

As a result of the session, a follow-up meeting was organized by the chairperson and was held the following Friday at the ITU Stand. During the meeting, Ericsson expressed interest in establishing a framework of contacts to effectively provide telecommunication expertise for international humanitarian assistance. Furthermore, Ericsson is considering providing assistance in the development

of an ITU handbook on emergency telecommunications in conjunction with OCHA and the IARU.

SESSION POL 5 / INF 7

Mobile Communications - Opening & Policy Panel

The session included two keynote speeches and two different panels. The report covers both discussions without separating the panels.

Chairperson:	Mr. George Novelli, Inmarsat
Keynote Speaker:Panel 1	Mr. Christopher Galvin, Motorola
Keynote Speaker:Panel 2	H.E. Mr. Rafael Arial-Salgado y Montalvo
Moderator: Panel 1	Mr. Gérard Dega, Alcatel
Moderator: Panel 2	Mr. Peter André Stern, Telesystem International Wireless
Panelists: Panel 1	Mr. Bruno Decharme, Telesystem International Wireless, Mr. Howard Woolley, Bell Atlantic Global Wireless, Mr. Anthony J. Navarra, Globalstar.
Panelists: Panel 2	Mr. Enrique Fernandez, France Telecom, Dr. Irwin M. Jacobs, Qualcomm, Mr. Takashi Kawada, Matsushita
Rapporteur:	Mr. Arno Wirzenius, Teleplanning.
Keynote Speeches	Mr. Christopher Galvin, President & CEO, Motorola (United States)

The role of regulation is crucial: regulation sets the rules, and the rules define the outcome of the game. Technical neutrality is essential to give the players a level playing field.

The private sector is interested if the business environment is considered sufficiently stable and fair.

H.E. Mr. Rafael Arial-Salgado y Montalvo, Ministro do Fomento (Spain)

Ten years ago Spain was well behind most other EU states. Now Spain has moved to the forefront of European development, with numerous licences and competing operators. The main focus of the Spain policy makers has been to remove uncertainty about business environment.

Spanish policy makers are not sure what will happen to 3G. 3G licences will be issued by auctioning around March 2000. At least one of the (possibly four) licences will be issued for the European standard, in line with EU policies.

Panel Discussions

3G future

Voice will generate most of the revenue during the next few years. Generally 3G is a high risk undertaking. Thus the appropriate price level for spectrum cannot yet be set. The market is definitely competitive, but customer behaviour is not predictable. Expected killer applications were mentioned: high speed Internet, transport related applications, music, e-mail, e-commerce. Most presently known important applications do not need Mbit/s speeds.

Standards

Technical standards were considered the most important policy issues and were discussed in some detail. On one hand harmonisation of global standards was considered necessary, but on the other hand one single standard would not be an appropriate solution. Policies preferring one single standard were not considered desired. Especially the EU policy to support European based standards was questioned.

The situation with different standards will be solved especially by designing multi-standard and multi-band handsets. It is important that 3G standards are backward compatible to ensure cash flow for new networks and operators during the initial few years until 3G services have reached sufficient volume.

Auctions

Another hot topic was frequency and licence auctions (alternative beauty contests). Auctioning is transparent, and the panel was rather positive to auctions. Audience comments were less impressed.

Spectrum availability

All panelists (being industry representatives) stressed the need for more spectrum. On the other hand it was mentioned that "all available spectrum will be used". A regulator in the audience stressed the need for balanced allocation of frequency bands for different services.

Licensing

The panelists were unanimous that licensing differs considerably between countries because the national policy drivers vary considerably. Little competition favours existing operators, as new platforms and services such as 3G are add-ons.

Elsewhere also new operators enter the market. Competition for third and fourth licences is already intense, thus policy / regulatory decisions on restricting the number of operators seems not to be based on market realities.

Policy and regulatory matters

Technology neutral policies and regulation were stressed.

Numbering should not limit or restrict services. Even worldwide (satellite) or wide area services may sometimes be included in local numbering schemes, with an impact on services. Users have difficulties to remember long numbers.

Environmental issues

Environmental issues such as radio wave impact on brains, battery disposal problems, etc. were mentioned and considered important. Consumer awareness is rising.

SESSION INF11

Mobile Communications – Evolution to the 3rd Generation

Chairperson:	Mr. Robert Jones, Director, BR, International Telecommunication Union
First Keynote Speaker:	Dr. Bernd Eylert, Chairman UMTS Forum, T-Mobil (Germany)
Second Keynote Speaker:	Mr. Hans Snook, CEO and Group Managing Director, Orange plc., (United Kingdom)
Moderator:	Mr. Stuart Sharrock, Editorial Consultant, Telecommunications, Telemates Ltd., (United Kingdom)
Panelists:	Mr. Michael Stocks, GSM Association
	Mr. Leo Nikkari, UWCC, (United States)
	Mr. Jim Takach, CDMA Development Group, (United States)
	Mr. Kyung-Joon Chun, Samsung Electronics Co. Ltd., (Korean Rep. Of)

Yesterday the Mobile Communications – Standards session (INF.9) articulated a new spirit of co-operation amongst mobile communications standardisation bodies. Competition is no longer between proponents of different technology solutions. Competition has now been transferred to the market place. The panel in session INF.11 (Mobile Communications – Evolution to the Third Generation) represented this competitive market place. Panelists included speakers from the manufacturing community and the three major operator associations representing the leading 2G technologies.

The session demonstrated that a major shift of emphasis and approach has occurred. Co-operation between 2G operator groupings is now beginning to replace confrontation. All panelists welcomed the recent progress in the ITU's IMT-2000 process that has achieved a high level of harmonisation between previously competing technology proponents. The prevailing mood is now one of optimism. Concepts such as multi-mode and multi-banding are seen as facilitating a level of competition in the market place

that traditional telecommunications has never experienced.

Multi-mode and multi-band handsets are technically feasible today but producing them to a size and cost that meets customer expectations is a major challenge for the manufacturing community. Terminals designed for the high data rates specified for 3G will require an order of magnitude increase in processing capability. A subsequent order of magnitude increase in power consumption is neither technically nor commercially acceptable. Developments in semiconductor technology should eventually come to the rescue.

The CDMA-based technology adopted for 3G brings clear advantages in terms of power consumption and spectrum efficiency compared with the proposed enhancements to current TDMA-based technologies. But migrating to 3G involves significant network investment. Whether enhancements to 2G systems such as GPRS and EDGE could obviate the need to migrate to 3G was a major concern of the audience and the subject of much debate by the panel.

Two main drivers for 3G were identified: the desire to offer advanced services and the need for additional spectrum to meet capacity requirements. The relative and absolute strength of these drivers is very market dependent. Many operators will undoubtedly deploy 3G for regulatory or capacity rather than service considerations. Whereas the technological justification for 3G is clear -- enhanced efficiency for high data rates and spectrum utilisation -- the business justification is less clear. There is no universal business case for 3G, each operator must look to their own circumstances.

The panel suggested that 3G is essentially technology driven. No clear demand for mobile multimedia has yet been demonstrated in the near term but the capability is being provided and it is up to the human imagination to respond. But the panel warned that the 3G community should learn from the ISDN experience. It must avoid over-hyping promises on high data rates that cannot be delivered in the near term.

The main requirement articulated by operators faced with the transition to 3G is flexibility. Flexibility in network deployment and timing, flexibility in the choice of technology solutions and flexibility in business development. Prominent on operators' wish lists are modest up-front licence fees and technology neutral licensing. These conditions demand a degree of flexibility in the regulatory environment that does not yet exist in many countries. Achieving this will require a dialogue between operators and governments to be initiated. In emerging economies in particular, the panel warned that 3G operators must be allowed to build their business to avoid negative impact on developmental values.

The call for "regulatory sanity" in licence fees was also extended to spectrum management and pricing issues. It was argued that more imaginative spectrum management across the sectorial boundaries of civil, telecommunications, defence and broadcast could and should release more spectrum into the new world of radio communications. A less contentious suggestion was for an examination of technical options such as spectrum re-farming and re-use as well as techniques for integrating non-contiguous spectrum to see how they could enable more appropriate regulatory regimes and regulatory facilitators.

3G will effectively enable the wireless Internet. What is still missing is a sensible cost model for such a hybrid business. An urgent priority to help resolve this issue is to establish better communications between the technical and regulatory communities. The mobile communications industry needs to explore how new technologies can enable a more pervasive and flexible regulatory model that translates to the appropriate degree of regulatory oversight.

SESSION POL 6

E-Commerce Regulation

Chairperson:	Mr. Cyrus Nasserl, Ambassador (Iran)
Keynote Speakers:	Mr. Francis Gurry, WIPO Mr. Bruno Lanvin, UNCTAD Mr. Francisco Gomez-Alamillo, Anciet
Panelists:	H.E. Amb. Diana Lady DOUGAN, CyberCentury Forum
	Mr. Richard SIMPSON, Industry Canada Mr. Hoyt ZIA, Pacific Telecommunications Council Prof. Narayana JAYARAM, University of Westminster Mr. Sebastiano TEVAROTTO, Hewlett Packard
Rapporteur:	Mr. Bert-Jaap KOOPS, Tilburg University

Mr. Francis Gurry held that there is a general consensus that in the development and regulation of e-commerce, the private sector should lead. The question is: how? First, what institutions should lead the regulation of e-commerce? Four aspects should be addressed: there must be a more precise definition of the influence of the public and private sectors and of the combinations thereof, the weight of influence must be made explicit (if the EU speaks with one voice, it must count for a heavier one than a single state), inclusiveness must be safeguarded (with much attention for the least-developed countries), and the private sector must develop the capacity to regulate divergent interests. Second, what instruments are required in e-commerce regulation? One may look at technological solutions, e.g., anti-cybersquatting measures can be

technically self-enforced. Treaties are generally held to be cumbersome and too slow, but also national legislation can be vulnerable. One can look at “time-phased” or experimental legislation, which is periodically reviewed.

Mr. Bruno Lanvin stressed the need to look beyond the regulation of e-commerce. E-commerce is the first marketplace that is born on a global level,

so many issues must be addressed internationally. The problem is how to reconcile national regulatory differences - in general, businesses are better equipped for that than governments. Therefore, new legal, business and industrial models for regulation must be developed. Also, the focus of regulation must shift, since the objects of protection are changing (e.g., if products are distributed freely, the focus of tax regulation must shift from the product to other points of regulation). New types of cooperation must be found; governments must develop experience in e-commerce themselves before they can regulate it, and businesses must be involved in endorsing shared objectives. Mr. Lanvin ended with a “crazy proposal”: it is time to think of preventing the next global crisis, an information crisis. A Global Information Architecture, mixing public and private sectors, must be established, in a climate of mutual confidence in which all voices are heard. The sustainability of the information society will depend on its diversity.

Mr. Gomez-Alamillo focused on regulation of e-commerce in Latin America. After giving figures of e-commerce in Europe and Latin America, he highlighted some e-commerce trends: electronic agents and electronic markets, which lead to automated information collecting, decision-making and buying. There is a remarkable difference in the challenges for e-commerce regulation in developed countries and in developing countries. In the former, the major issues are trust, privacy, and developing a common legal approach. In the latter, the challenges lie rather in the availability of the infrastructure, in education, and in developing a legal framework as such. Mr. Gomez-Alamillo pointed out some e-commerce regulation references: the Global Business Dialogue on Electronic Commerce (GBDe), and the Sao Paulo Declaration.

Next, the panelists gave their views.

Mr. Richard Simpson stressed the need to engage civil society in the regulation process, besides industry and government. The government should play three roles: lead where needed, follow where possible, and get out of the way where necessary.

Mr. Sebastiano Tevarotto mentioned speed as the major issue, which will lead to a world of services personalised to the individual user. The government should not try to fix what is not broken, but rather ensure that fundamental rules are adhered to. **Mr. Hoyt Zia** considered privacy as probably the most

important issue in e-commerce. He explained the US cryptography policy, which shows that the government is going to be involved anyway, like it should. **Mr. Narayana Jayaram** worried about the possible absence of moral in the privatised information society - can large businesses establish the trust needed for e-commerce? He mentioned legal requirements of form (writing, signature) as an urgent issue.

From the discussion, it emerged that there is consensus that there must be some form of regulation of e-commerce, and that this should be jointly undertaken by the public and private sectors, with the latter in the lead. Regulation is not the same as government, while government is not the same as regulation: governments also play a role of facilitating e-commerce and being a model user of e-commerce. Views differ, however, on just what areas of e-commerce should be regulated, by whom, and in what ways. The discussion made clear that several issues need to be addressed, but at the same time that it is difficult to assess just how they should be addressed.

For instance, the issues of encryption and electronic signatures were often mentioned as areas that urgently need regulation, but it is not clear how these should be regulated. With encryption, there is a conflict between the need of users to employ encryption and the need of governments to access information for law-enforcement and national-security purposes. The panel gave no indication whether this conflict of interests can be resolved. Electronic signatures should be given the same legal status as traditional signatures, but it did not become clear whether this should hold only for digital signatures (made with public-key cryptography) or also for other kinds of authentication. Another major issue, jurisdiction, can be addressed through harmonization of laws (as happened with intellectual-property rights), but this is not feasible in all areas.

Also, a considerable gap emerged between the issues needing regulation in developed countries and those in developing countries. In the latter, the main issue to be addressed is the development of the infrastructure. The regulation of telecommunications, for that matter, is by no means completed. On the other hand, this may also be an opportunity for countries with hardly any infrastructure to jump to a modern, non-terrestrial infrastructure. Still, the digital divide between developing and developed countries was seen as a major concern in the global information society.

Finally, many views were given on the means and bodies to regulate e-commerce internationally. Should the process of regulation be left to develop out of itself, or should a specific body be established, with industry, governments and civil society, and if so, what voting power should each have? It was concluded that, although there are no single answers, the right questions are being asked about

where, when, how and by whom to regulate e-commerce. We must be flexible in answering these questions.

SESSION POL 7

International Trade Issues

Chairperson:	
First Keynote Speakers:	
Moderator:	
Panelists:	
Rapporteur:	Dr. E. Eugster

It has been two years since the establishment of the 1997 WTO Agreement on Basic Telecommunication Services that set about tele-communications liberalisation in over 60 countries. Now, we are all thinking about the lessons of that agreement and what directions the next round of WTO talks should take. Has the competition and investments brought about by the WTO agreement helped to reduce the inequalities between developed and developing countries in accessing information technology and services? What role should the ITU play in helping countries decide what regulatory schemes best fit their needs? What role should national regulators play in promoting competition and investments? These issues were debated in the session on International Trade Issues. The general consensus was that any WTO action must promote global competition and continue to respect the divergent experiences and needs of different countries to avoid lost opportunities.

The ultimate verdict on WTO agreements will depend upon the situation of different national and regional liberalisation initiatives. The session discussed the activities of the World Bank in leveraging private investment to help countries integrate into the world economy. But the inequalities between developed and

developing countries in accessing technology continues to widen. Finland, for example, has more Internet hosting

sites than Latin America and the Caribbean combined. In the European Union, the battle between increasing competition and safeguarding national jurisdiction continues. The 1997 WTO agreement has not been fully implemented. And European policy-makers are debating if the Internet and E-commerce should be regulated.

The small nations of the Caribbean are also on the road to liberalisation. With World Bank funding, countries in the area were able to create new legal and regulatory environment that promotes liberalisation. To date, the liberalisation efforts have resulted in a 50 percent tariff reduction. In Central Europe, the push to a market economy continues to be strong. But deregulation efforts must cope with

low GNPs, market distortions created by black markets and by changing governments that redefine the "rules of the game." In Pakistan, competition exists in wireless, but basic telephony service will not be liberalised until 2002. Here, regulators are faced with complex interconnection, pricing and spectrum allocation issues. As we heard, the issues raised by the WTO agreement are complex; requiring many countries to restructure their political and regulatory institutions.

What "regulatory" approach should the upcoming WTO discussions take? Clearly, technology is more sophisticated than in 1997. The convergence of voice, data and video, for example, is forcing regulators to deal with new content and ownership issues. Malaysia, for example, is one of the first countries to create a joint regulator for telecommunications and broadcasting.

One approach to help regulators and WTO policy-makers to understand these new industry dynamics is "benchmarking" international experience and promoting cross sector discussions. The active dissemination of information such as national case studies can help regulators and policy makers learn from the experience of others. It was also cited that such an approach would build up local expertise and require less external consulting services. And by promoting cross sector discussions, complex issues such as pricing and interconnection would be decided by commercial negotiations, with oversight by regulators. Such an approach can avoid the needless addition of more laws and regulations that may hinder competition.

To meet the needs of stronger information exchange, the session heard about the activities of the World Bank's InfoDev group which disseminates information about global regulatory developments. Also several participants hoped that the ITU could play a more active role in the study of regulatory issues while maintaining even closer ties with WTO.

The session agreed that the 1997 WTO agreement was a success; helping liberalise 90 percent of the world's telecommunications markets. The short history of the agreement has shown that liberalisation can result in greater investments, increased employment and reduced prices. But the session raised concerns among participants that future WTO talks could result in more regulations. Participants hoped that WTO policy-makers would take a practical approach. It was hoped the irrelevant regulations would be abolished and that different national and regional liberalisation efforts would be respected and promoted. If that happens, the WTO will be able to go about its business deepening and broadening a more competitive global market. And regulators will be less likely to face the challenges of creating complex laws and regulations, and more likely to oversee an environment characterised by greater commercial negotiations, greater investments and wider, universal access to the

information technology and services. In that case, we will have indeed learned, and applied, the ultimate lesson of the 1997 WTO agreement.

SESSION POL 8

Regulatory Roundtable

Chairperson:	
Keynote Speaker:	
Moderator:	
Resource Person	Ignacio Mas, Principal Consultant at Analysys Ltd
Panelists:	

The second panel addressed two broad topics: access to the market and regulation of the incumbent's tariffs. Some common themes pervaded the entire discussion, including the need for clear rules guiding the sharing of infrastructures across providers to promote efficient yet sustainable investment levels, the need to periodically review regulations with a view to gradually reducing their scope as market forces develop, and the need for regulators to operate with transparency to enhance accountability.

Under the first topic (access to the market), the panel discussed approaches to the granting of licences for spectrum for wireless technologies, whether the local loop should be considered a bottleneck, the extent to which local loop unbundling may be desirable as a policy tool, and universal access policies. It was felt that in most of these areas there is some conflict between policy objectives that requires careful resolution. For example, in the case of spectrum allocations an auction may be the best device to ensure that the spectrum is exploited in the most efficient manner, but the resulting cost of the spectrum will be passed on to the user through higher prices and/or lower quality. Therefore, a beauty contest that includes parameters for coverage, end-user tariff and minimum quality levels may be appropriate.

Under the second topic (regulation of the incumbent's tariffs), the panel discussed the best methods for countervailing the incumbent's negotiating power vis à vis new entrants on interconnection. It was felt that, if left to their own devices, new entrants could not be expected to be able to draw a fair deal from the incumbent, and that regulatory guidance and occasional intervention was necessary to ensure a level playing field. This would result in competitive benefits, including lower tariffs to the end-user as well as service innovation and sustained quality improvements.