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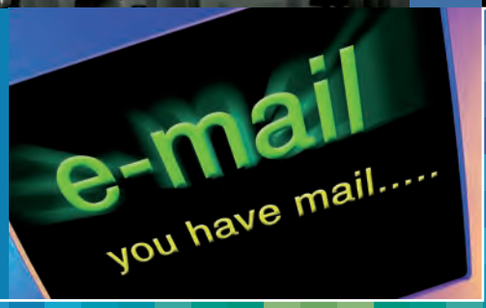

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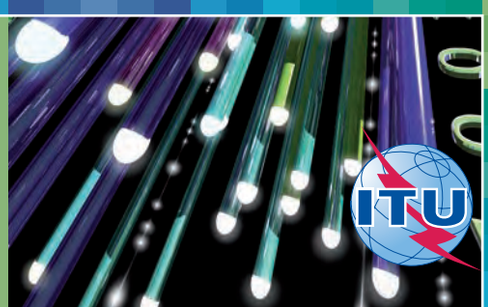
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ITU Telecom World Timeline

Making global connections

FOREWORD

ITU TELECOM WORLD TIMELINE — 1971–2011

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Secretary-General of ITU

Houlin Zhao
Deputy Secretary-General of ITU

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Director of the ITU Telecommunication Standardization Bureau

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Director of the ITU Radiocommunication Bureau

Brahima Sanou
Director of the ITU Telecommunication Development Bureau

Making global connections

Can you imagine living in a world without being able to search for things online? Without being able to send and receive text messages? Without e-mail or online shopping or mobile devices to keep you in touch anywhere, anytime? Can you imagine a world without a global positioning system and without social media? That was what the world was like in 1971, when ITU launched Telecom.

As the story of telecommunications unfolds, the ITU Plenipotentiary Conference and the ITU Council adapt the activities of the Union, allowing the venerable organization to retain the vitality of youth. ■

TELECOM's early days

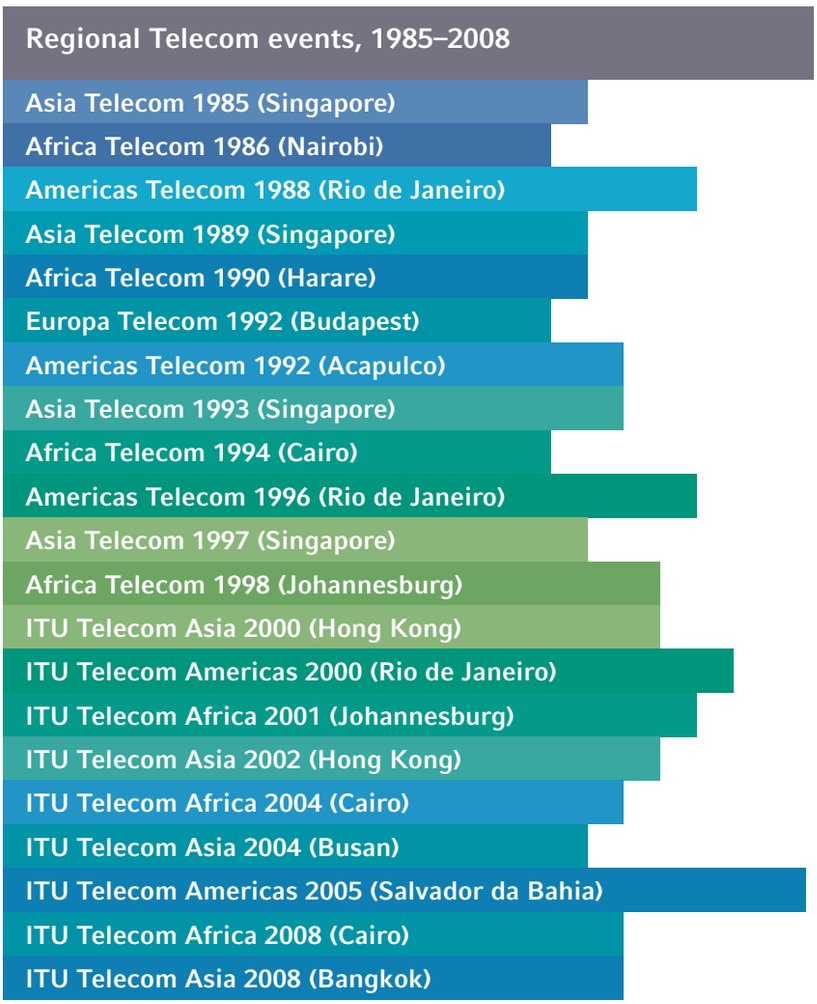
This vitality made it possible to hold the first World Telecommunication Exhibition in 1971, as an "experiment" for which the Union's Administrative Council assumed responsibility. With the second World Telecommunication Exhibition, TELECOM 75, these world exhibitions became an institution — generally held every four years although the pace quickened with events in 2006, 2009 and 2011, the 40 anniversary of the founding of the event.

The ITU Plenipotentiary Conference in Malaga-Torremolinos, Spain, in 1973, made it clear that Telecom was to serve the member countries of the Union and was to be organized in collaboration with them. It was to be a technical exhibition to demonstrate the application of science and technology at which participants could learn about the latest refinements in a field that was in a state of constant and rapid evolution. ■

Regional events

Nine years later, in 1982, the Plenipotentiary Conference, held in Nairobi, Kenya, gave a new dimension to Telecom with the decision to organize Telecom events in other countries remote from ITU headquarters, with an emphasis on the telecommunication infrastructure needs of regions.

The first regional Telecom was organized by the Singapore Administration in collaboration with ITU in 1985. This concept



became well established with the organization of regional Telecoms continuing until 2008. ■

Generating funds for development projects

ITU Telecom events are staged for the benefit of ITU Member States and Sector Members. But as a business-oriented, semi-commercial organization within ITU, Telecom also generates income. The Plenipotentiary Conferences of Kyoto (1994) and Minneapolis (1998) decided that a significant part of any profits derived from Telecom activities should be used for specific telecommunication development projects, primarily in least-developed countries.

One such project in the field of human resources development is the establishment of centres of excellence. An allocation of CHF 2 million from Telecom was earmarked by ITU to provide seed funding for each centre.

This led to the establishment of four centres of excellence, two of which are sited in existing regional training institutions in Africa. The Ecole supérieure multinationale des télécommunications (ESMT) in Dakar and the African Regional Advanced Level Telecommunication Training Institute (AFRALTI) in Nairobi have been transformed into centres of excellence.

The other two centres, which are in the Americas and Asia-Pacific regions, differ somewhat from the approach taken in Africa, in that a number of existing training and research institutes have been linked into a virtual network of centres of excellence.

The primary mandate of these centres of excellence is to train public officials in policy and regulatory issues, but they also have a number of other valuable functions. For example, they provide training, advice and information on the management of the frequency spectrum. Ministers can call on the centres for information and advice, particularly regarding large projects.

An example of Telecom funding to support infrastructure development is the CHF 4 million allocated to help modernize the Pan-African Telecommunications Network (PANAFTEL), and to enhance local and regional manufacturing capabilities in that continent.

Another example of the use of Telecom funds is the CHF 1.5 million devoted to assisting countries in special need, such as by drawing up a short-term development plan for the Telecommunication Regulatory Agency of Bosnia-Herzegovina. A further CHF 4 million were committed as seed funding for pilot projects to demonstrate and extend the benefits of communication technology to the public. This money benefited such projects as tele-education programmes in India and Morocco, and electronic commerce projects in Morocco and Venezuela. Community multipurpose telecentres were also set up in Mali, Uganda, Mozambique, Benin, Tanzania and Viet Nam. ■

Return to a single, global format

The Plenipotentiary Conference held in Guadalajara, Mexico, in 2010, saw that the telecommunication environment was changing not only because of advances in technology, but also because of the globalization of markets and growing user demand for integrated cross-border services. With these changes in mind, and given the pressing need for a global forum in which to exchange information on telecommunication strategies and policies, the plenipotentiaries decided that ITU Telecom events should be redesigned as a single, global event and held annually from 2012 onwards. They further decided that this global event should be organized on the basis of the principle of geographic rotation between regions.

The plenipotentiaries picked up on the increasing interest in ITU Telecom events as platforms for discussions among policy-makers, regulators and industry leaders, an interest already evident during the ITU Telecom 2009 event. Considering that organizing exhibitions is not ITU's main objective, the plenipotentiaries expressed a preference for exhibitions held in conjunction with Telecom events to be outsourced. ■

Reaching out

In 2011, we celebrated 40 years of ITU Telecom World with our anniversary event in Geneva, Switzerland, in a new and innovative format focusing on networking, knowledge sharing and high-level debate and discussion.

The most important change was the hugely increased levels of inclusion and interactivity. One example of this is the opening up of the whole event to remote participants, including tens of thousands of schoolchildren all over the world who took the opportunity to engage directly with the high-level participants on site in Geneva. Another example is the Digital Innovators competition, which showcased the best ideas from the hundreds of entries received from 24 countries on five continents – with prize money awarded to the best ones as seed funding. ■

Connect, collaborate and create change

As the leading platform for high-level networking, strategic debate and knowledge-sharing for the global ICT community, ITU Telecom World 2012 will enable a unique mix of key stakeholders from across the entire industry ecosystem to actively engage in conferences, discussions, workshops and forums. It will be hosted by the Government of the United Arab Emirates and will take place in Dubai from 14 to 18 October, at the Dubai International Convention and Exhibition Centre.

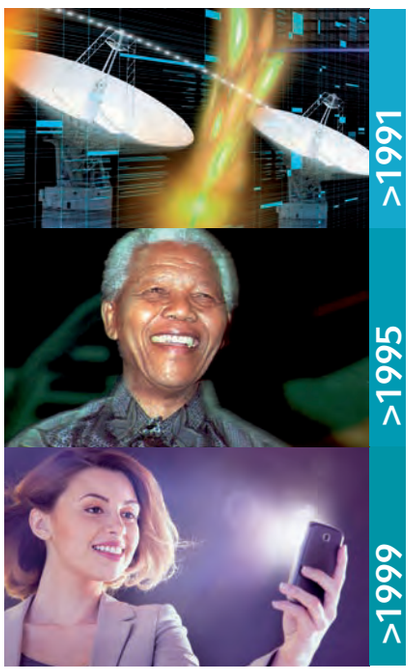
ITU Telecom World 2012 will provide an opportunity to explore the nature and impact of the radical transformation that the ICT industry is currently undergoing – driven by game changers such as new technologies, shifting industry dynamics as new players emerge, and megatrends including urbanization and population ageing.

This Special Commemorative Edition of ITU News highlights some of the great ideas and achievements of ITU Telecom World over the past 40 years, setting the scene for future events that carry forward ITU's tradition of dynamism and vitality.

We wish you an enjoyable read. ■

CONTENTS

ITU TELECOM WORLD TIMELINE



TELECOM >1971

Message to the XXIst century

Mohamed E. Mili, Secretary-General of ITU at the time of TELECOM 71 (left) with Robert Galley, France's Minister of Posts and Telecommunications (right)

Message to the XXIst century

The story of ITU Telecom World starts with the success of TELECOM 71, the very first World Telecommunication Exhibition, held in Geneva from 17 to 27 June 1971, with the theme "Message to the XXIst Century".

This was the first time that an exhibition with such a vast range of telecommunication equipment had been organized on a world scale with the participation of administrations of ITU member countries, private companies and industrial firms.

Switching and transmission equipment, videophones, audio-visual equipment and television studios, high-capacity submarine cables, waveguides and radio relays, data transmission equipment and computers were shown off to admiring visitors.

Spacecraft and satellites occupied a prominent place. Satellites used for public telecommunications, meteorology, mass education or radionavigation were to be seen alongside models of different types of earth stations.

Far from being a handicap for organizers and exhibitors, this wide-ranging diversity of equipment highlighted the nature of telecommunication techniques and the close links between the various kinds of new technology.

Public administrations and private companies, industrial firms, research centres and laboratories, theoreticians and manufacturers, indeed the whole telecommunication family which makes up ITU and gives the Union its specific and original character, were fully represented and made their satisfaction plain.

The enthusiasm of Mohamed E. Mili, Secretary-General of ITU, at the time of the first TELECOM event was palpable: "At no time in the more than century-old history of our Union has this uniquely conceived organization conveyed its message so forcefully or so clearly. All those who had the opportunity — and the good fortune — to visit the various stands were able to appreciate the fundamental role played by ITU in the spectacular evolution of telecommunication techniques and in the rapid expansion of the world network to which it has made such a large contribution."

The Exhibition dominated the eleven heavily charged days of the event, but there were also several other attractions — technical symposia, an international film festival "The Golden Antenna", the Mondovision programme "Children of the World", and an international competition "Youth in the Electronic Age". There were important visitors, and national days organized by the Federal Republic of Germany, Canada, Spain, France, Italy and Japan. Also, the event was timed to coincide with the Space Conference (the World Administrative Radio Conference

The enthusiasm of Mohamed E. Mili, Secretary-General of ITU, at the time of the first TELECOM event was palpable:

> *"At no time in the more than century-old history of our Union has this uniquely conceived organization conveyed its message so forcefully or so clearly..."*

Mohamed E. Mili, Secretary-General of ITU (left) with Robert Galley, France's Minister of Posts and Telecommunications (right)

for Space Telecommunications, Geneva, 1971).

An extract from a letter sent three months after the event to the Secretary-General of ITU by Thomson-CSF reflects the views of manufacturing companies:

"May we say first of all how much we welcomed the idea of organizing an exhibition of this kind, a view which was borne out by events: the presence of national organizations and research laboratories and all the world's leading manufacturers confirmed the universal importance attached to an exhibition devoted to telecommunications.

The information on conventional equipment and the possibility of making comparisons on the spot were of great interest. But more striking still were glimpses given of the future. Electronic switching, space communications, picture transmissions, the videophone, the use of waveguides, the entire Exhibition was brimming with new ideas and techniques heralding the changes to come. Even the specialists already versed in these new techniques must have found enormous satisfaction at being able to view such a microcosm of telecommunications.

Certainly the number of exhibitors and the efforts deployed give food for thought, but the confrontation was both stimulating and instructive and testified to the immensity and diversity of the needs that exist. Thomson-CSF can only feel gratified at the opportunities offered, the contacts made and the new relations established at the Exhibition." ■

Engaging with the world

Prior to TELECOM 71, ITU already had a long history of taking part in technical exhibitions, such as the Universal Exposition of Paris in 1900, and the World Expositions held in Brussels in 1958, Montreal in 1967, and Osaka in 1970. Among the many exhibits arranged jointly with various administrations over the years, ITU's participation in the International Air and Space Show at Paris Le Bourget, in May 1971, at the invitation of the French National Centre for Space Research, was a sort of dress rehearsal for TELECOM 71.

The 250 exhibitors who took part in TELECOM 71, occupying a floor space of 24 000 m^2, did so with extraordinary enthusiasm. Success was equally marked among the visitors, 70 000 of whom admired the stands and the quality of the exhibits*.

Young people came in great numbers and showed keen interest in everything on display. Individually and in groups accompanied by teachers, they were encouraged not just to look at, but also to touch and manipulate many of the technologies on show. ■

* *Source: Telecommunication Journal, Vol. 38–X/1971.*

The Exhibition: A foretaste of a future much closer than envisaged

As reported at the time, TELECOM 71 unquestionably demonstrated the lightning growth of telecommunication techniques. The Exhibition attracted global interest. For months beforehand the stands and pavilions, whose combined value amounted to more than CHF 120 million, were described in detail by specialized press throughout the world.

Exhibitors presented a wide range of telecommunication equipment, from radio sets to electronic telephone exchanges, communication or research satellites, and terminals for the live reception of television broadcasts via satellite.

A message scribbled on a transparent plate was sent into space from the Exhibition itself, via three satellites of the Intelsat network, through Japan and the United States, and back to Geneva where it appeared on the screen at the INTELSAT stand. The written message made the 230 000-km journey over Earth, into space, and back again in seven-tenths of a second.

Exhibitors presented a wide range of telecommunication equipment, from radio sets to electronic telephone exchanges, communication or research satellites, and terminals for the live reception of television broadcasts via satellite

Another demonstration — spectacular at the time — was the videophone… The expectation was that 150 million of these videophones would be in service by the year 2000

Another demonstration — spectacular at the time — was the videophone, presented at TELECOM 71 by companies from the Federal Republic of Germany, France, Sweden and the United States. The expectation was that 150 million of these videophones would be in service by the year 2000. A further outstanding feature of the Exhibition was multiplex television, presented by Japan Broadcasting Corporation.

Capturing the attention of specialists from all over the world were waveguides, which soon became the most interesting medium of data transmission owing to the phenomenal amount of information that was already able to be transmitted simultaneously. The terminals, decoders, automatic exchanges, switching exchanges of all kinds and control instruments were recognized as having gained in reliability and made even more compact by the increasingly standardized usage of integrated circuits.

The overall impression at the time was of a stupendous effort of research in increasingly refined specialities. The German, British, Canadian, Spanish, French, Greek, Iranian, Italian, Japanese, Swiss and Thai pavilions, and the stands of companies representing the telecommunication industries of many countries reflected the sharpness of the struggle to further the social and economic development of humankind. ■

Technical symposia

Various symposia were planned in association with special days spotlighting the themes of education and telecommunications; telecommunication networks in Africa and Europe; telecommunication networks in America and Asia; the press and telecommunications; and space and telecommunications. There were many lecturers, so the daily programmes were fairly lengthy. ■

"The Golden Antenna" international film festival

A number of high-quality productions were shown at "The Golden Antenna" film festival — the first international film festival on telecommunications and electronics.

The film festival gave administrations and participating companies an opportunity to exchange information on their film productions, both in educational films for the general public and films for training or industrial publicity purposes.

The festival included a competition, and 17 countries submitted a total of 51 films.

These films were distributed by the organizing committee among different categories, and the following awards were granted by the jury:

Category I — Best film produced by a member country for public information

A number of high-quality productions were shown at "The Golden Antenna" film festival — the first international film festival on telecommunications

on telecommunications and electronics. Winner "Signaux" submitted by the Swiss PTT; runner-up "Fernsprecher" submitted by the Federal Republic of Germany *(Deutsche Bundespost)*.

Category II — Best commercially produced documentary film on telecommunications and electronics. Winner "Weather forecasting for tomorrow" submitted by Hitachi Limited, Tokyo; runner-up "No ordinary cargo" submitted by Post Office, London.

Category III — Best promotional film on telecommunications and/or electronics produced by a commercial company. Winner "Panteltron" submitted by NV Philips, Hilversum, the Netherlands; runner-up "Fighting crime with science" submitted by Motorola Communications International, Schaumberg, Illinois (United States).

There were no prize winners for ***Category IV*** (Best film in the training field) and ***Category V*** (Best film in the technical research field). Although the film "Scientist in the sea" (United States Navy Photographic Centre) had nothing to do with telecommunications, the jury agreed that it deserved a special prize for its artistic and technical merit.

A number of administrations (particularly the Swiss PTT) and companies together created the prizes, which were presented at a gala held at the *Grand Théâtre* of Geneva. The "Golden Antenna" prize for overall best film at this very first international telecommunication film festival was awarded on 24 June 1971 to the film entitled "Weather forecasting for tomorrow" produced by Japanese company Hitachi Limited. The presentation was made by Christopher Chataway, Minister of Posts and Telecommunications of the United Kingdom, in the presence of representatives of the diplomatic corps and of the Swiss authorities. ■

"Youth in the Electronic Age" competition

Details of the "Youth in the Electronic Age" competition were widely circulated to member countries. Technical documentation and press articles put together and made available after the exhibition, enabled many schoolchildren and students to enter the competition under the sponsorship of either ministries of telecommunications or education. The prizes were awarded on the 4th World Telecommunication Day, 17 May 1972. ■

The “Golden Antenna” prize of the first international telecommunication film festival was awarded on 24 June 1971 to the film entitled “Weather forecasting for tomorrow” produced by Japanese company Hitachi Limited

The Mondovision programme

The Mondovision programme was intended for children throughout the world. Produced in close collaboration with the European Broadcasting Union, it met with notable success.

Administrations of ITU member countries once more demonstrated their spirit of cooperation by providing free of charge all the facilities required for the programme — a gesture which did credit to the family of telecommunications. ■

State-of-the-art technology

The TELECOM 71 event itself showcased the practical use of the new technologies on display. A worldwide live television broadcast of the TELECOM 71 inaugural ceremony was already being considered in August 1970. Free use of the space segment was granted by INTELSAT for the occasion, and administrations of member countries offered the use of land links. The European Broadcasting Union agreed to produce and broadcast the programme — which proved far from simple to coordinate and prepare in view of the short time available and the technical problems involved.

The live round-the-world television programme was shown from 1800 to 1900 hours (GMT) on the evening of 17 June 1971, and was enthusiastically received by viewers throughout the world as well as visitors to the Exhibition. Its success was made possible by the technical facilities of the world telecommunication network and, in Geneva, by *Télévision Suisse Romande* and ORTF *(Office de radio-diffusion et télévision française)* which had installed a most up-to-date colour television studio of 400 m^2 in the audio-visual section of the Exhibition. ■

High-level participants

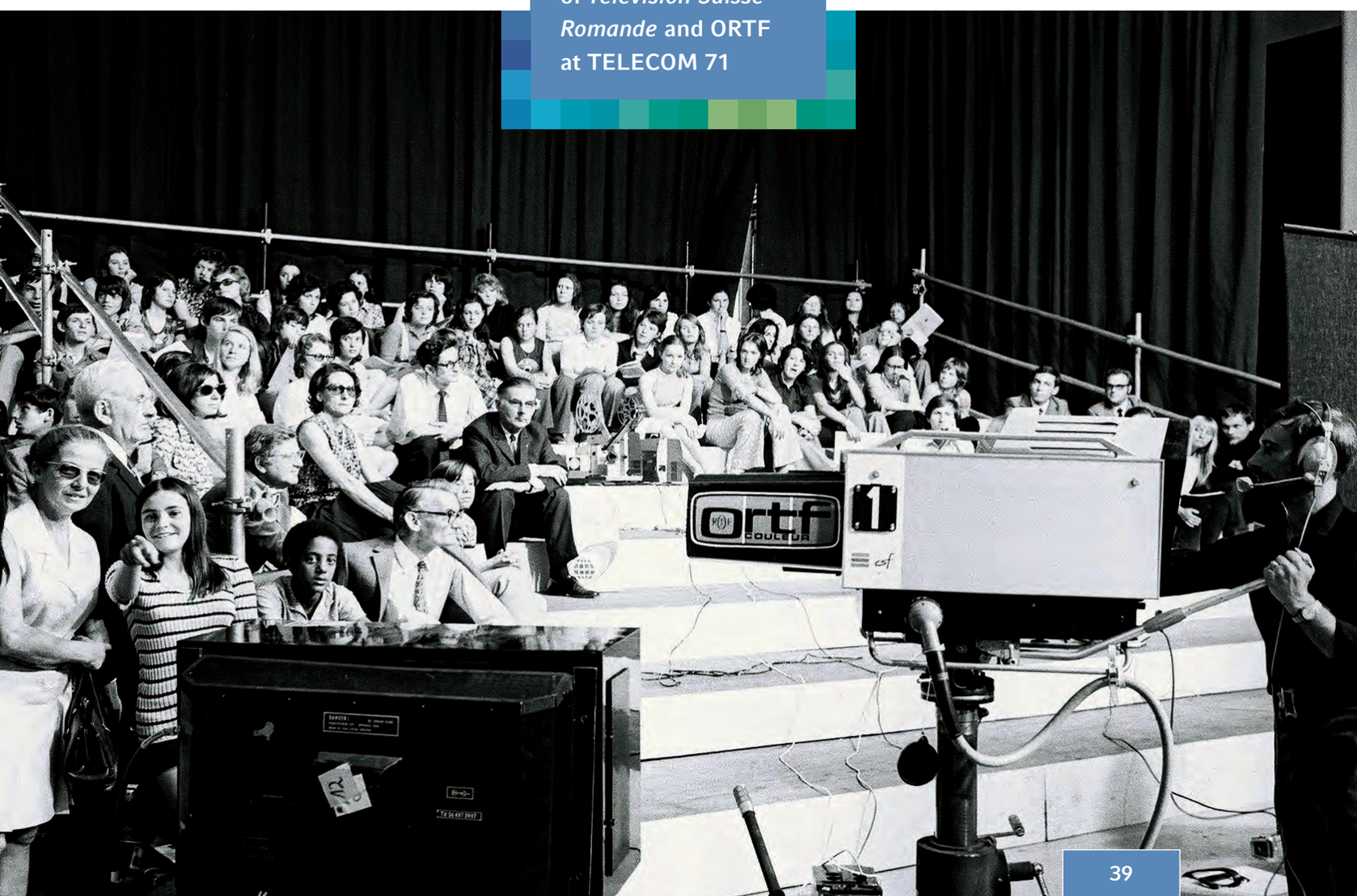
The TELECOM 71 event was inaugurated at the *Palais des Expositions* in Geneva in the presence of 11 ministers of telecommunications from ITU member countries, along with representatives of the United Nations, the specialized agencies, the diplomatic corps, the Swiss Confederation, and the Canton and City of Geneva. A message from U Thant, Secretary-General of the United Nations, was read out by Winspeare Guicciardi, Director-General of the United Nations Office at Geneva, and speeches were made by Ambassador R. Keller, representing the Swiss Federal Council, and Mohamed E. Mili, Secretary-General of ITU.

Along with the fruitful contacts with numerous experts, exhibitors welcomed delegates of the second Space Conference to their stands. The Space Conference was held in the same building and at the same time as TELECOM 71 and exhibitors were therefore also able to profit from direct contact with representatives of the 101 countries taking part in that conference. ■

ESK 3000E telephone exchange donated to ITU by the Federal Republic of Germany

During his visit to TELECOM 71, Georg Leber, Federal Minister of Transport and of Posts and Telecommunications of the Federal Republic of Germany announced that the Administration of the Federal Republic of Germany and *Siemens Aktiengesellschaft* Munich, would donate to

Visitors to the Exhibition watching a colour television programme retransmitted live from a 400 m^2 studio of *Télévision Suisse Romande* and ORTF at TELECOM 71

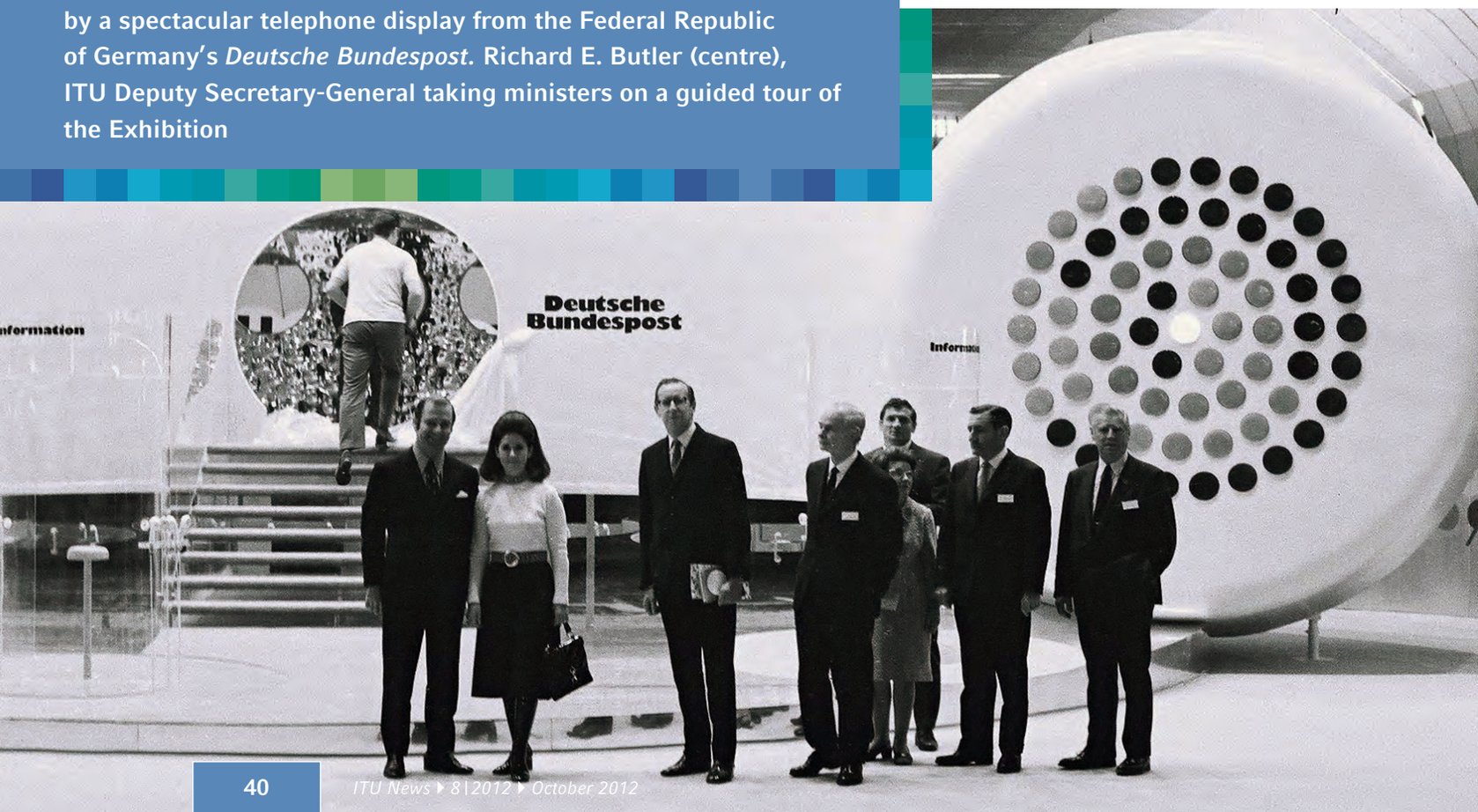


the Union for its extended headquarters building, a Siemens ESK 3000E crosspoint telephone exchange.

The outstanding features of the ESK 3000E crosspoint PABX came from the exclusive use of high-speed noble-metal relays in conjunction with electronic components in the staging network and control system, as well as a new design based on the modular principle. The ESK 3000E PABX complied with *Deutsche Bundespost* and international telephone regulations and could be expanded to any required size. It was also conceived for data transmission and videophone services.

In addition to meeting the telecommunication requirements of the enlarged ITU building, the new ESK 3000E PABX would also provide telephone services for delegates to conferences to be held in the International Conference Centre of Geneva that was under construction then — located opposite the ITU headquarters. ■

The main hall of TELECOM 71 on the eve of the opening marked by a spectacular telephone display from the Federal Republic of Germany's *Deutsche Bundespost*. Richard E. Butler (centre), ITU Deputy Secretary-General taking ministers on a guided tour of the Exhibition



TELECOM 71 in photos

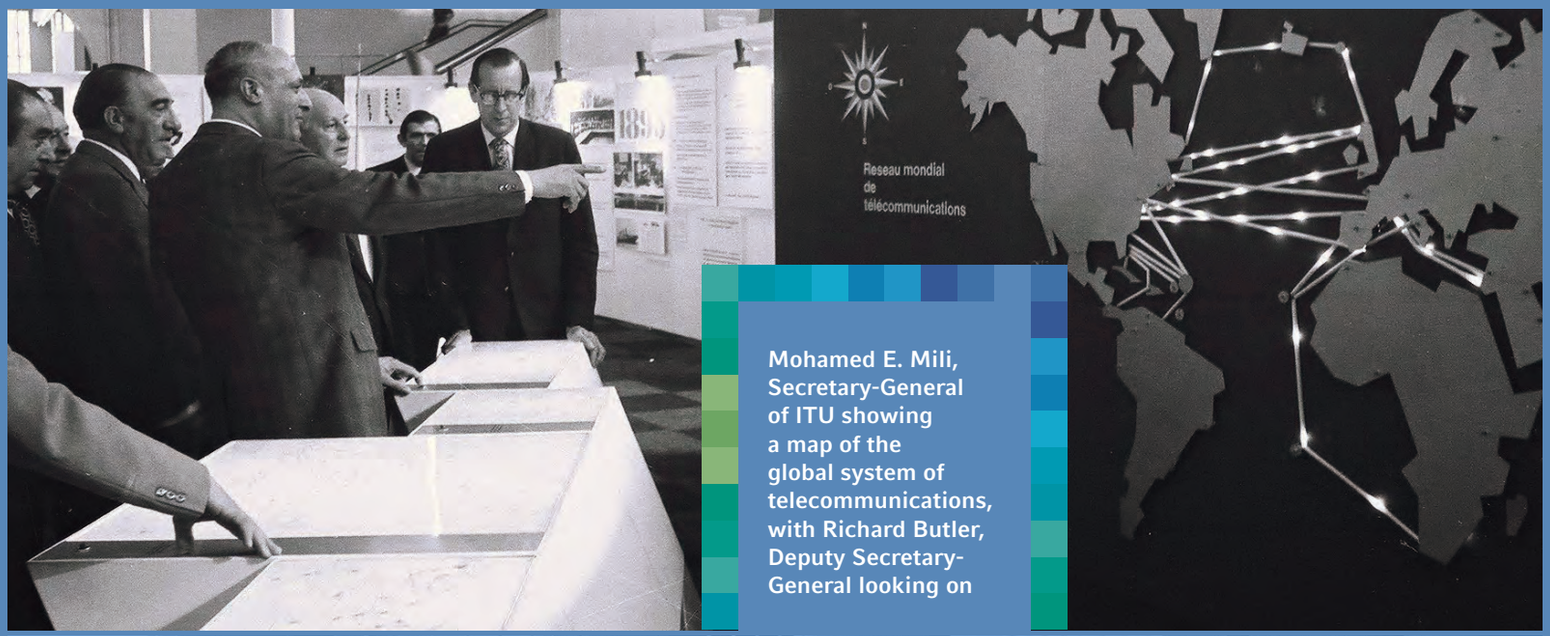
Inauguration of TELECOM 71

Guests arriving for the inauguration of TELECOM 71 accompanied by Geneva's honour guards

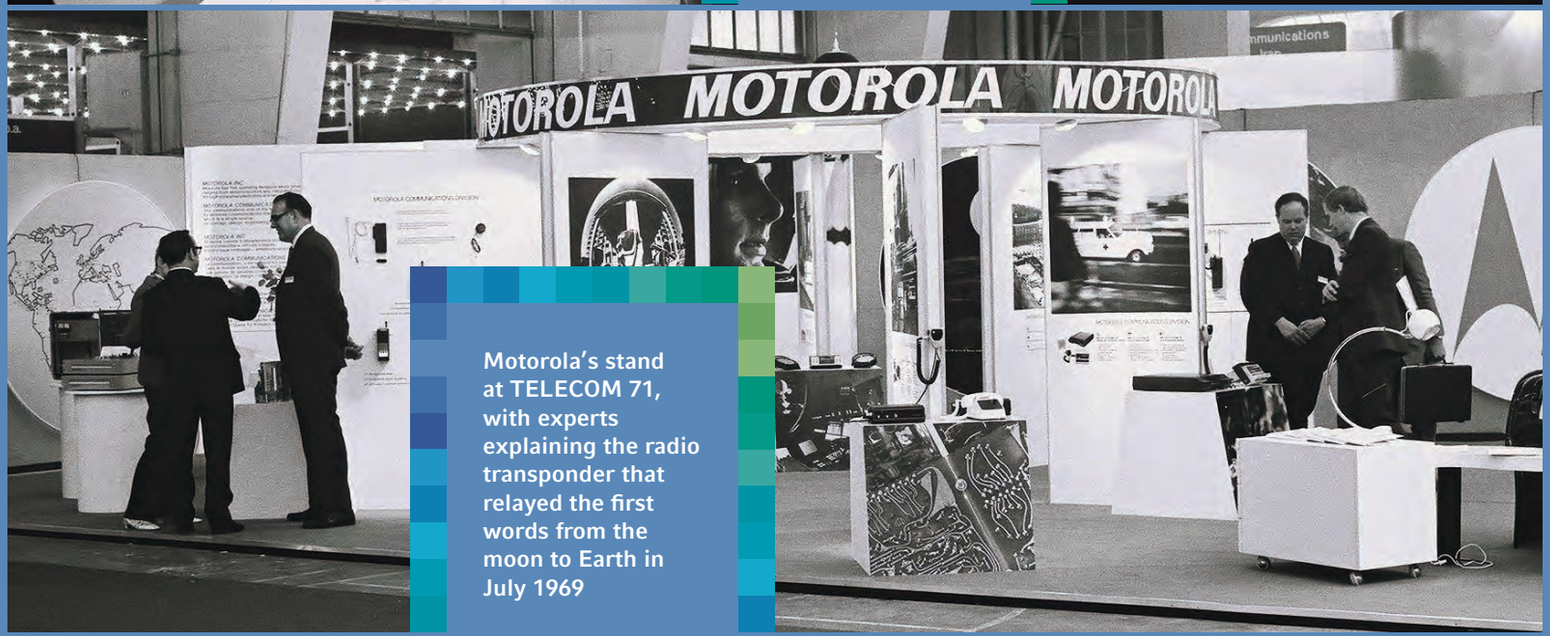
Radio relays were a centre of attraction at TELECOM 71. This photograph shows the cgti (Camusat Gueguen Telecommunications International) stand with a radio relay system

The Italian pavilion, notable for its ultra-modern structure and clean lines

Telephone sets from the International Telephone and Telegraph (ITT) Corporation



Mohamed E. Mili, Secretary-General of ITU showing a map of the global system of telecommunications, with Richard Butler, Deputy Secretary-General looking on



Motorola's stand at TELECOM 71, with experts explaining the radio transponder that relayed the first words from the moon to Earth in July 1969

Jacques Martin, French television host and producer, and Danièle Gilbert, host of *Midi Première*, present a show at TELECOM 71

What next?

Visitors and exhibitors alike emphasized the value of an event such as TELECOM 71, both to the public and the telecommunication industry, especially when associated with a major ITU conference. They were in favour of repeating TELECOM every two or three years.

Exhibitors felt that the contacts made had been very profitable and they approved of the idea of associating a world telecommunication exhibition with a large ITU conference.

Representatives of administrations and the world telecommunication industry expressed a similar view regarding the frequency of the event: they wanted ITU to organize a second TELECOM exhibition in two or three years' time. Their idea was that the second exhibition would illustrate the rapid strides made in technology throughout the world since the first exhibition.

It was now up to the Plenipotentiary Conference in Malaga-Torremolinos, Spain, in 1973, to take a decision on whether and how often TELECOM events should be held. ■

TELECOM >1975

Telecommunications = PROGRESS

Giant telephones formed the centrepiece on the stand of the Administration of the Federal Republic of Germany at TELECOM 75

Telecommunications = PROGRESS

TELECOM 75, with the theme "Telecommunications = PROGRESS", was a foretaste of the 21st century. This second World Telecommunication Exhibition took place from 2 to 8 October 1975 in Geneva, with the seal of approval of the ITU Plenipotentiary Conference, held in 1973 in Malaga-Torremolinos, Spain. The conference recognized "that the telecommunication exhibitions are of considerable assistance in keeping the members of the Union informed of the latest advances in telecommunication techniques and in publicizing the possibilities of applying telecommunication science and technology for the benefit of the developing countries".

"At each turning point in the history of telecommunications the plenipotentiaries decided, calmly and we might say without too much difficulty, on the introduction of new activities in order to meet the requirements of their era. In so doing they made it possible for the ITU to retain the vitality of a young organization, and endowed it with a wonderful ability to adapt to the numerous technical revolutions which have taken place time and time again in the last hundred years," said Mohamed E. Mili, Secretary-General of ITU at the opening of TELECOM 75.

That vitality had made it possible to hold the first World Telecommunication Exhibition in 1971, as an "experiment" for which the Union's Administrative Council assumed responsibility. "With the 2nd World Telecommunication Exhibition, TELECOM 75, such exhibitions have now finally become an institution and will be held every four years — like the Olympic Games! — and they will henceforth set the pace for broad fraternal meetings of the world of telecommunications," Mr Mili added. ■

A vision of TELECOM

The direction given by the Plenipotentiary Conference in Malaga-Torremolinos was clear: TELECOM was to be an exhibition to serve the member countries of the Union and was to be organized in collaboration with them. It was to be a technical exhibition, to demonstrate the application of science and technology, at which the participants could learn of the latest refinements in a field that was in a state of constant and rapid evolution.

In terms of financial responsibility, the Exhibition was to be carried out on an independent budget and with no pecuniary gain to the Union. Thus, every sum charged for the Exhibition was devoted to running it, and revenue balanced expenditure. ITU was also careful to ensure that arrangements for the Exhibition made by the Orgexpo Foundation were just what the exhibitors and other participants expected.

National pavilion of the Republic of Korea featuring its telecommunication development plan as well as its hardware production

Organizing such an exhibition under ITU auspices was in line with the Union's general approach to resolving the problems which its specialized study groups and conferences were called upon to address.

One exhibitor at TELECOM 75 put it like this: "Of all the electronics and communication exhibitions and congresses, TELECOM is truly the only universal telecommunication exhibition."

As Mr Mili stated at the time, "TELECOM is an essential complement to the work of the permanent organs of ITU which carry on the important work of coordinating research, planning projects, regulating services and standardizing equipment… Accordingly, in organizing world exhibitions such as TELECOM 75, ITU does no more than pass from theory to practice. It is gathering together under the same roof all the members of the great family of telecommunications: governments, private companies, scientists and industrialists with a history of over a hundred years of cooperation within the different organs of the Union."

These different organs included the International Telephone and Telegraph Consultative Committee (CCITT) and International Radio Consultative Committee (CCIR) — the forerunners of the Telecommunication Standardization Sector (ITU–T) and the Radiocommunication Sector (ITU–R), respectively. Recognized private operating agencies and scientific or industrial organizations participated in the work of both CCITT and CCIR, and still do today in ITU–T and ITU–R. ■

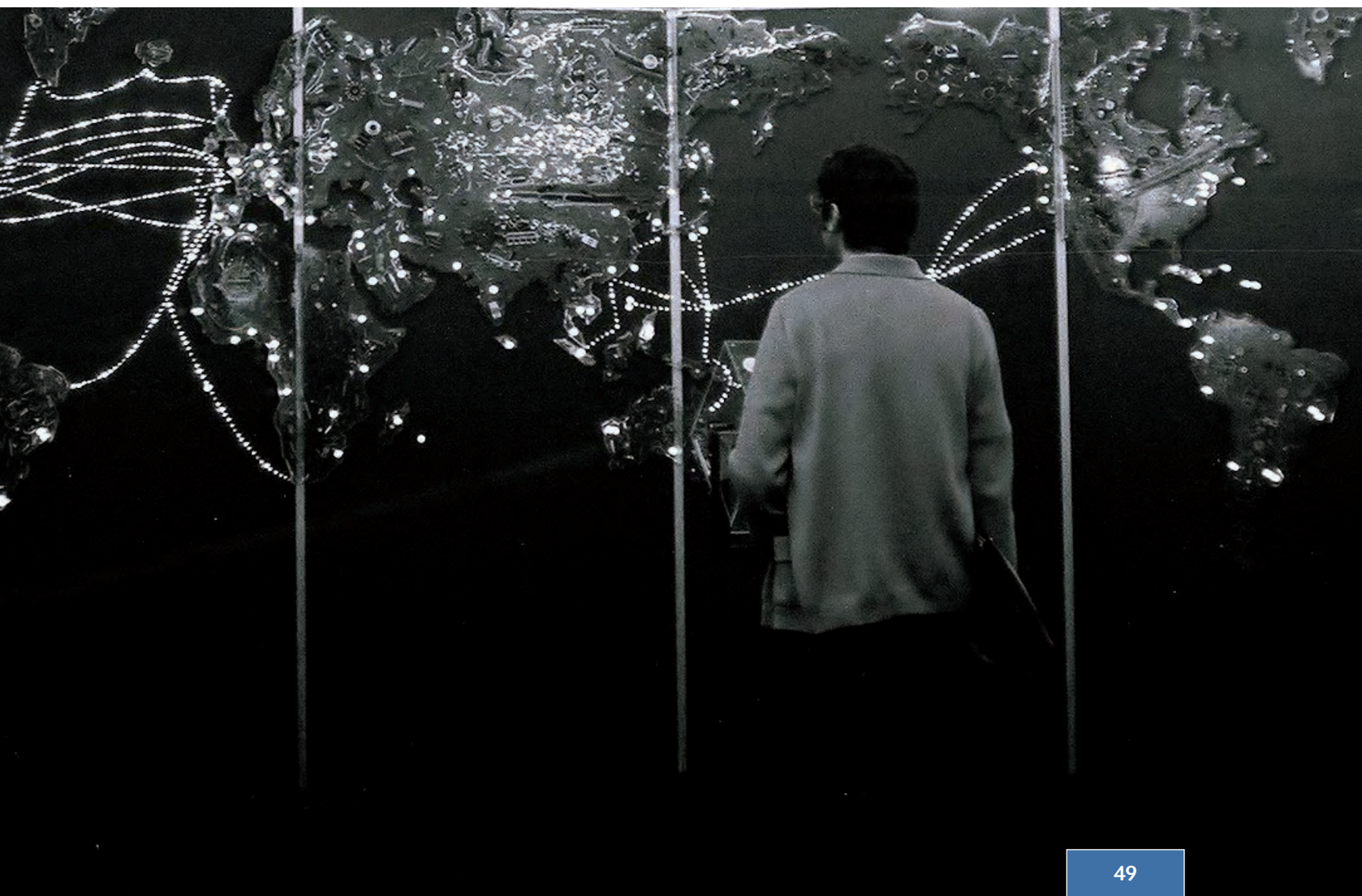
Exhibition highlights

Not only were the industrialized countries represented among the exhibitors, but also developing countries seizing the opportunity to give an account of their development plans for the public network, broadcasting, education, aeronautical and maritime radiocommunications or for any other activity needing telecommunications. Developing countries were able to go through their projects on the spot with constructors, and find means of financing them by talking to investors from around the world.

Whether industrialized or not, all countries planned to purchase equipment and very many of them were at times faced with difficult choices. TELECOM exhibitions, offering a varied range of equipment of all kinds, lightened the selectors' task by acquainting them with the latest developments.

"The dynamism of research workers leads them to innovate constantly, but they cannot do this if they remain isolated, and this is why the contacts which are established here, not only at the Exhibition but also during the Technical Symposium, are so useful. We therefore congratulate the International Telecommunication Union on having succeeded in establishing this outstanding forum", said Willi Ritschard, Federal Councillor and Head of the Department of Transport, Communications and Energy, opening TELECOM 75 on behalf of the Swiss Federal Government.

The thousands of devices and systems on view at TELECOM 75 — from the micro-processor to the satellite — defined the contours of the age of telecommunications. As Robert Sarnoff, RCA Chairman put it during the opening ceremony, "It is an age in which the technology assembled here, buttressed with all our managerial skills and energies, offers the world new levels of economic and social progress. By providing swift



and inexpensive linkage of all countries through every form of communication, it will stimulate international trade as never before. It will help bridge the difference between developing and developed nations. It will make possible the spread of education and the exchange of culture on an unmatched scale. It will provide new tools to prevent the misunderstanding and miscalculation that can threaten world peace…

At the heart of this new age is the synchronous satellite. In ten brief years, it has become a phenomenon of our time, linking more than 100 countries and territories. It now accounts for well over half the world's overseas telecommunications traffic and all its transoceanic television." Mr Sarnoff urged that a global satellite "hotline" be set up to link world capitals. ■

Live presentation of a space radiocommunication system for disaster relief

The TELECOM 75 Exhibition offered visitors the chance to see for themselves how a space radiocommunication system could be used to help emergency workers bring relief to victims. Earthquakes, floods and hurricanes have wrought an incalculable toll of suffering and death. But all too frequently, the aftermath of the disaster has proved to be worse than the cause. Whole communities have become the victims of disease, hunger and privation because relief in the immediate post-disaster period has been delayed.

Delays have been caused because the means of communication between the stricken area and relief centres have been destroyed, or because no communication systems existed. In addressing the problem, ITU recognized from the outset that communication between stricken areas and relief centres was unlikely to be solved satisfactorily by conventional radiocommunication equipment.

The World Administrative Radio Conference of 1959 recommended the use of radiotelegraph and radiotelephone links by Red Cross organizations, to be employed when normal communication facilities are disrupted. These links would use special radio frequency bands assigned by member countries as required. But such measures suffer from the fact that propagation phenomena preclude full effectiveness on a round-the-clock basis.

The World Administrative Radio Conference for Space Telecommunications (1971) therefore recommended the use of space radiocommunication systems in the event of natural disasters.

At the request of the United Nations and the Space Conference, ITU carefully considered the type of telecommunication equipment required immediately in a stricken area in the post-disaster period, and proposed a study to optimize the satellite potential for telecommunications.

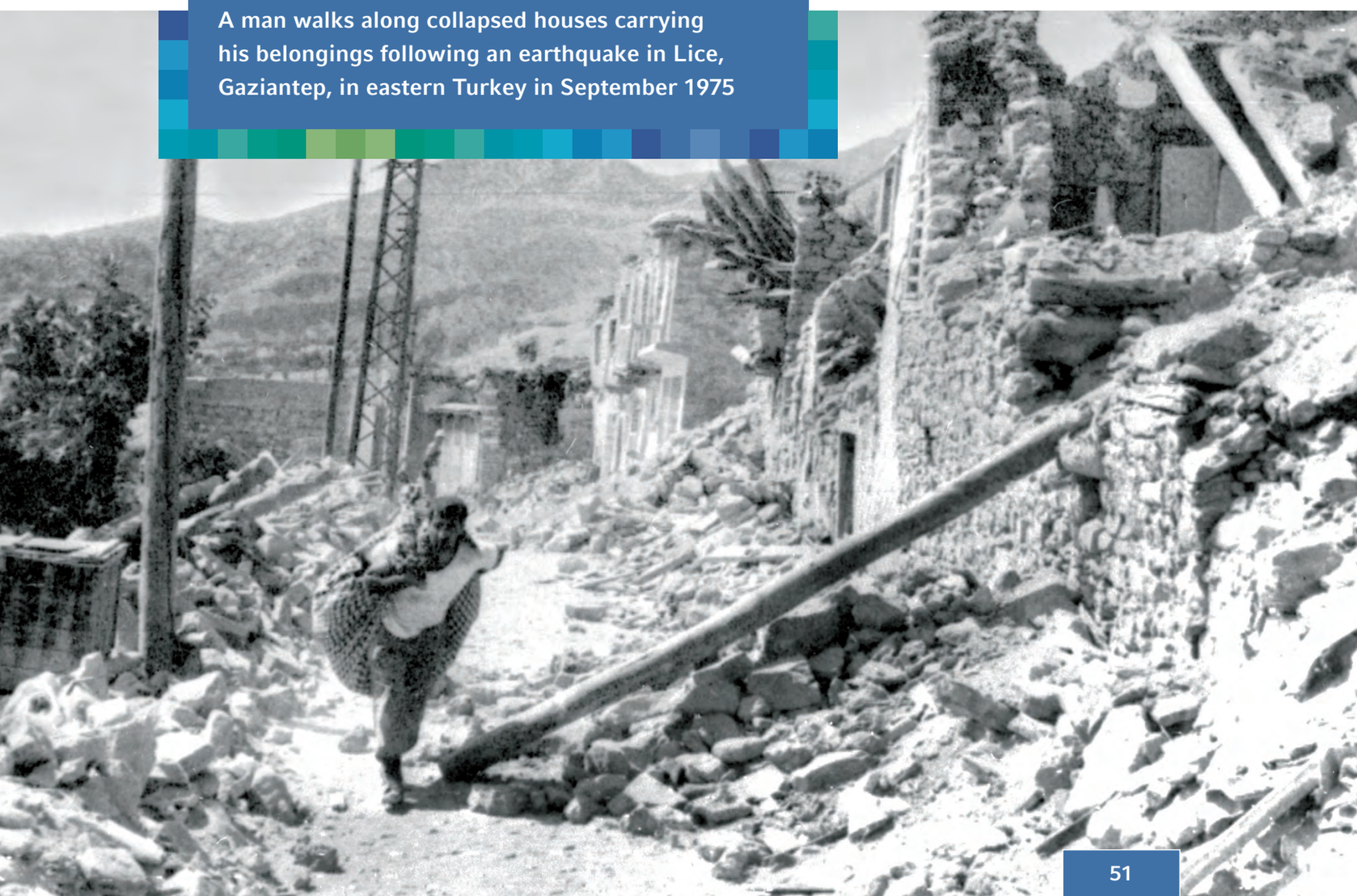
The United Nations relief services required earth stations that could easily be packaged and transported by plane, road or small boat. With those requirements in view, ITU studied technical aspects such as weight, size, ease of assembly, rapidity of installation, method of use, logistic support, maintenance possibilities and the number of pieces of emergency equipment required.

The study was already in progress at the time of TELECOM 71, and manufacturers from all over the world, who assembled in Geneva for the event, were anxious to give practical assistance.

The solution was satellite communications, which could reach jungles, deserts and places that were isolated by oceans or by natural hazards. This was made feasible by the geostationary (known in 1975 as geosynchronous) satellites which, at the time, had been in use for little more than 10 years.

The ITU study, completed by 1973, contained the specifications for equipment tailored to United Nations requirements. It focused the attention of private manufacturers on the need for

A man walks along collapsed houses carrying his belongings following an earthquake in Lice, Gaziantep, in eastern Turkey in September 1975



earth terminals light enough to be transported by air, with the result that several companies were producing such equipment.

But the question remained unanswered of which satellite could be used as the link between the transportable Earth terminals in disaster zones and relief centres. Satellite communications were already in operation at that time, but only at commercial rates — too expensive for the tests and experiments that would be needed to demonstrate that the ITU concept was viable and efficient.

In 1974, however, the Franco-German Symphonie satellite programme was activated with the launching of its first satellite into geostationary orbit — the specific objective being experimental transmissions designed to further satellite communications technology. That was a fortuitous development, and ITU requested the Symphonie project to make available facilities for a practical demonstration of the air-transportable earth station by October 1975.

Symphonie immediately offered the most generous help, providing earth station facilities and air-transportable earth station equipment. These new and significant telecommunication techniques for post-disaster relief operations were demonstrated at TELECOM 75. ■

First World Telecommunication Forum

Building on the interest shown in the symposia organized at the first TELECOM event in 1971, the 1st World Telecommunication Forum was held at TELECOM 75 in two parts.

ITU and The Financial Times of London co-sponsored Part I on "Economics and telecommunications". Here the Forum explored the financial and economic aspects of telecommunications. ■

Technical Symposium

Part II of the Forum was a Technical Symposium chaired by Richard C. Kirby, Director of CCIR. The symposium was co-sponsored by ITU with the following engineering and scientific societies:

- *Associazione Elettrotecnica ed Elettrotecnica Italiana* (AEI)
- Canadian Society for Electrical Engineering (CSEE)
- Institution of Electrical Engineers (IEE)
- Institute of Electrical and Electronics Engineers (IEEE)
- ITU Association of Japan
- New Zealand Institution of Engineers (NZIE)
- *Société des électriciens, des électroniciens et des radioélectriciens* (SEE), France
- the *Schweizerischer Elektrotechnischer Vereinl Association Suisse des Electriciens* (SEVIASE)
- *Verband Deutscher Elektrotechniker* (VDE)
- *Nachrichtentechnische Gesellschaft* (NTG)
- International Union of Radio Science (URSI).

The Franco-German Symphonie satellite programme was activated with the launching of its first satellite into geostationary orbit in 1974

The Technical Symposium examined:

- The future world telecommunication network: integration of world telecommunications; human, economic and social aspects of telecommunications; development of international networks.
- Data communication: information processing; data links; teleprocessing; broadband interactive networks for new services.
- Radiocommunication: terrestrial and space communications; sound and television broadcasting; mobile communication; digital techniques.

Leaders in the science and engineering fields of telecommunications had the opportunity to exchange views on the latest trends and technical developments.

Many of the speakers at the symposium emphasized the important role played by ITU's technical standards as a prerequisite for international telecommunication development. ■

"The Golden Antenna 75" — second international film festival

Some 43 films were submitted to the second "International Festival of Telecommunications and Electronics Films", *The Golden Antenna 75* by Australia, Canada, France, the Federal Republic of Germany, Hungarian People's Republic, India, Italy, Japan, Netherlands, Romania, Spain, Sweden, Switzerland, United Kingdom and United States. Three of the films were submitted by two international organizations.

The films were grouped into five categories (A, B, C, D and E):

A. Films produced by the member countries of the Union for public information on telecommunications, including non-commercial films made by national television and/or cinema producers.

B. Commercially produced documentary films on telecommunications or electronics, sponsored by companies which participated in TELECOM 75.

C. Promotional or advertising films in the same field

D. Films produced by governments or companies in the training field

E. Films produced by governments or companies in the technical research field.

The films were screened before an international jury composed of specialists in the field of telecommunications and electronics, as well as well-known film and television specialists. The jury's decisions were based on the audio-visual impact of the films, their relation to the spirit of the festival and their content. ■

Winning entries

The first prize of all categories of "The Golden Antenna 75" was awarded to *Recherches* (Research), produced by the French Ministry of Posts and Telecommunications. The prize was offered by the Swiss PTT. The film describes the activities of the *Centre national d'etudes des telecommunications* (CNET).

In ***Category A***, a "Silver Antenna 75" was awarded to the Australian film "A momentous occasion", which tells the story of the construction of the 3200 km, single-wire telegraph line across Australia from Adelaide to Darwin, set up in 1872.

In ***Category B***, a "Silver Antenna 75" was awarded to the Italian film *Dialogare* (To converse), which recounts, through children's eyes, the story of *Italcable* and its efforts to provide Italy with an international telecommunication network.

In ***Category C***, a "Silver Antenna 75" was awarded to *ESK Fertigung* (ESK manufacture), presented by Siemens AG (Federal Republic of Germany). This film is about the manufacture of an up-to-date technique for use in telephone systems and private telephone installations.

The jury awarded honourable mentions to two films. One was *Survivre aux cyclones* (Cyclones and survival), which was also awarded a "Bronze Antenna 75".

This Category A film was co-produced by the League of Red Cross Societies, the World Meteorological Organization and the United Nations Educational, Scientific and Cultural Organization. It describes a cyclone prevention programme launched by the Government of Bangladesh and the League of Red Cross Societies.

The other was "Along these lines", a Category B film produced by Bell Canada to mark the centennial of the invention of the telephone by Alexander Graham Bell in Brantford, Ontario on 26 July 1874. A special prize for artistic value was awarded to *Auf Draht und Welle* (Over wire and wavelength), a Swiss film (Category B) describing the efforts made by the Swiss PTT to ensure constant communications, over wire and wavelength, between Switzerland and the rest of the world. This prize was offered by the Canadian Department of Industry, Trade and Commerce.

The awards were presented at a ceremony held on 5 October 1975 at the *Palais des expositions,* Geneva. The film *Recherches* was shown on the occasion, and the seven prize-winning films were shown to the public at a cinema in Geneva on 6 October 1975. ■

TELECOM 75 in figures

The Exhibition attracted 100 000 visitors. With 360 exhibitors occupying 37 000 m^2 of exhibition space, ITU was pleased to accept the proposal made in December 1973 by the President of the Swiss Confederation, Roger Bonvin, that TELECOM should again be held in Geneva.

Source: Telecommunication Journal, Vol. 43–II/1976.

Youth in the Electronic Age

A second "Youth in the Electronic Age" competition was launched by ITU on 17 May 1974 on the occasion of the 6th World Telecommunication Day, and prizes were given to winners from around the world during TELECOM 75. ■


AU REVOIR...A TELECOM 1979!
GOODBYE...UNTIL TELECOM 1979!

TELECOM >1979

Electronic telephone switching emerges from industry collaboration

Electronic telephone switching emerges from industry collaboration

TELECOM 79, held from 20 to 26 September 1979 in Geneva, was the third in the series of ITU World Telecommunication Exhibitions. It fully demonstrated the potential that telecommunication exhibitions offered "in keeping members of the Union informed of the latest advances in telecommunication techniques and in publicizing the possibilities of applying telecommunication science and technology for the benefit of the developing countries", a concept of TELECOM expressed by the Plenipotentiary Conference (Malaga-Torremolinos, 1973).

TELECOM 79 was the most comprehensive and the largest exhibition that had ever been organized in the telecommunication sector up to then. It reaffirmed the value of such activity in supplementing the Union's day-to-day practical efforts to promote the development of telecommunications of all kinds. TELECOM 79 definitively established the value of world telecommunication exhibitions. ■

The TELECOM programme expands

TELECOM 79 was the first such event to host a world book fair on telecommunications and electronics — an initiative welcomed by a large number of publishers. That new activity was added to those which by then were seen as traditional, although their scale had increased: the Exhibition, the World Telecommunication Forum, the "Youth in the Electronic Age" competition, and the "Golden Antenna" international film festival on telecommunications and electronics. ■


esa
ariane

The Exhibition: One network for every kind of telecommunication traffic

The star of the TELECOM 79 Exhibition — and centrepiece of the British exhibit — was "System X", making its public debut as an electronic telephone switching system. Nicknamed System X early in the 1970s when almost everything about it was an unknown quantity, its modular concept was of packs of electronics that could plug into each other to build up a telephone switching machine in almost any way. This could be anything from the simplest exchange, to machines that were more sophisticated than anyone had yet envisaged. The ultimate aim was to integrate switching and transmission through System X, and to achieve this by adding extra modules, and replacing basic modules with more advanced ones as and when they were developed.

It took a decade of discussion, doodling, research and development, in a dozen laboratories throughout Britain, to produce System X. Real work on the basic idea of developing a modular system began only in 1976, and not until the end of 1977 was there any hardware to show. But in the run-up to TELECOM 79 engineering had advanced rapidly. The vision was that telephone switching would one day be managed entirely by powerful computers, rather than electro-mechanical switching systems.

The development of System X aimed to respond to the world's urgent need for modern telecommunication systems. Many questions raised by the System X approach are still relevant today. In particular, how do you bring a new system into service alongside old-style equipment? And how do you persuade a national manufacturing industry accustomed to competing in several dozen countries to direct all its energies into finding a single solution to a dauntingly large technical problem?

System X was the brainchild of the British telecommunication industry — born of the dual demands of the world's third-largest telephone administration with its dramatic rates of growth in traffic — and of suppliers who wanted a system with real export potential for the future.

It was the first technical development in which major elements of the industry collaborated as a single team. As Desmond Pitcher, Managing Director of Plessey Company plc pointed out, the real strength of System X was that four very experienced development teams were pooling resources to develop the all-important computer programs. "There's every chance we'll have the cheapest and most reliable software", he said.

The development of System X was shared between the Post Office's own research centre at Martlesham, and the laboratories of General Electric Company (GEC), Plessey Company plc, and Standard Telephones and Cables Limited (STC). Looking ahead from the status of System X at TELECOM 79, the Post Office saw perhaps two decades of engineering development to introduce the system's newer technologies, such as the increasingly large-scale integration of electronic circuits and the use of optical fibres instead of cables. The vision was of an integrated information handling system — one network capable of handling every kind of telecommunication traffic. ■

The Forum

The Forum was attended by an impressive number of world-renowned experts, not only in technical subjects but also experts in both the economic and financial spheres. It thus became an ideal meeting place for discussing and trying to resolve the problems confronting officials in charge of telecommunications. ■

Audio-visual techniques enable mass participation

TELECOM 79 was initially to be held at the *Palais des expositions*, but the number of exhibitors participating in the event was so large and the areas reserved so extensive, that ITU was obliged to expand the Exhibition and use the nearby multipurpose *Halle des Vernets*.

The huge number of participants and the interest in the lectures given at the Forum also far exceeded the capacity of the conference rooms originally designated. The solution was to make use of the most advanced audio-visual techniques available at the time, from stills to wide-screen projections, recordings and various transmission systems.

The complex system, comprising colour television cameras, wide screens and transmissions by cable, optical fibre, radio relay and satellite, met all communication requirements, not only within the World Telecommunication Forum itself, but also outside.

Conference room A (with a capacity of 1200) in Geneva's *Palais des expositions* was too large for people at the back to see the speaker and too small to hold the expected audience. Arrangements were therefore made for two simultaneous projections: one on a 6 × 4 m screen in room A and another, also on a large screen, in room B (with a capacity of 500).

The speakers and those taking part in the discussions were televised by special cameras and their images displayed on the screens in rooms A and B so that all participants in the discussion could be seen while speaking.

A cable circuit carried the images to a mobile unit outside equipped with 1-inch and 3/4-inch video tape-recorders able to record all interventions by lecturers and speakers during question time. After the meetings, complete or partial copies of those recordings could be made available on request. In addition, a closed television circuit broadcast two programmes simultaneously on screens located at the four main entrances and in the press room.

Two smaller colour cameras were available to produce video recordings in the TELECOM area or to record interviews and round-table discussions held in a specially equipped studio which was placed at the disposal of all participants, as well as journalists.

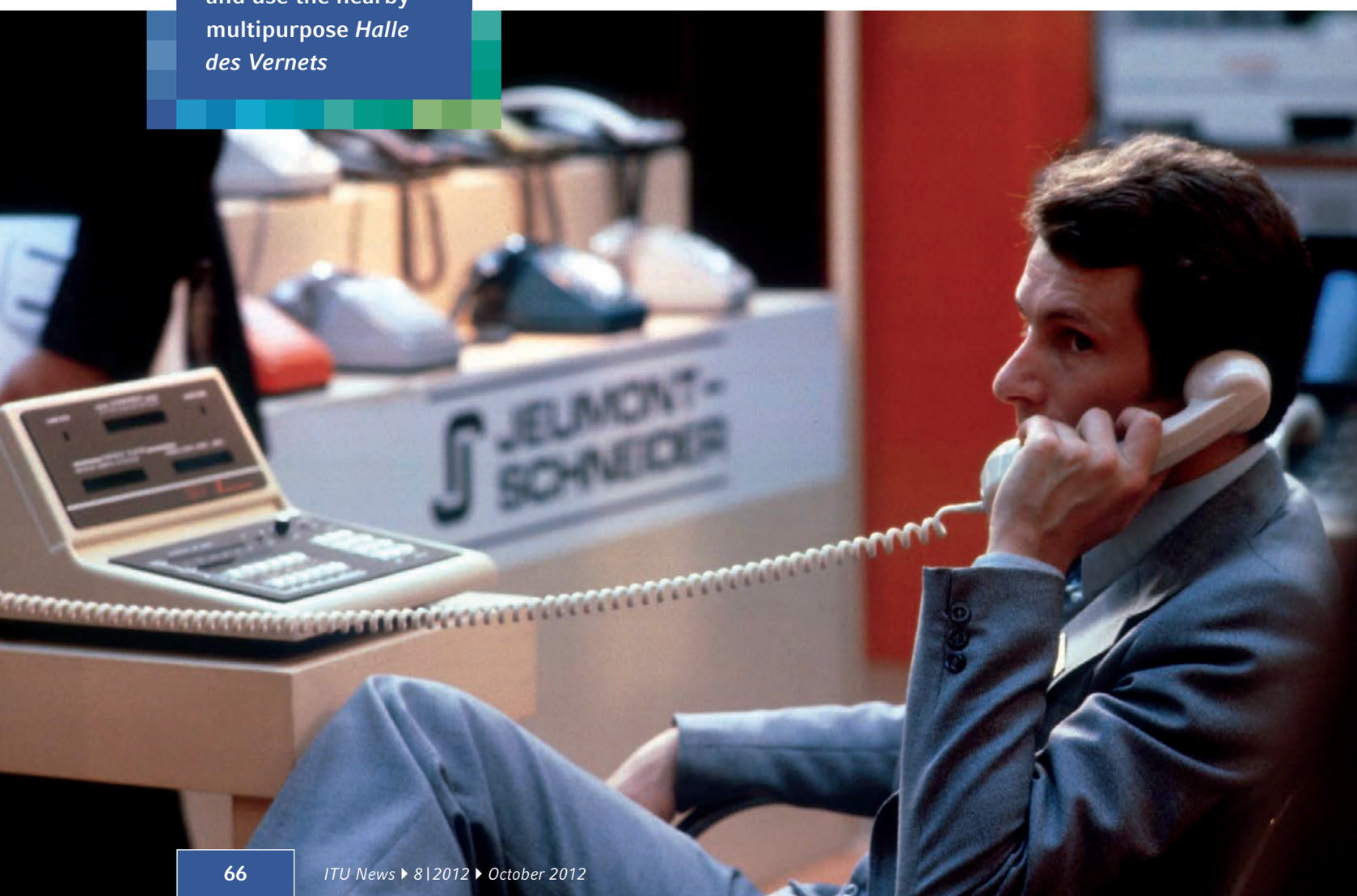
The installations provided at TELECOM 79 included a number of original features and constituted an advance demonstration of the working flexibility of what was then modern audio-visual equipment. The organizers of the demonstration not only wanted to provide a good service to participants, but also aimed to enable visitors to the Exhibition to watch the modern equipment in operation, to assess different methods of using it and to draw conclusions for the future. The permanent installations of audio-visual equipment are costly, so such equipment must be chosen and constructed with extra care. In that respect, the experience of TELECOM 79 was exceptionally useful. ■

Reporting van equipped with two colour-television cameras

TELECOM 79 was initially to be held at the *Palais des expositions*, but the number of exhibitors participating in the event was so large and the areas reserved so extensive, that ITU was obliged to expand the Exhibition and use the nearby multipurpose *Halle des Vernets*

Extending the range of participants

Along with manufacturers and countries — the two groups that had taken exhibition space at the previous TELECOM events — a new category of exhibitors was introduced at TELECOM 79, namely financing and bank-loan institutions. The belief was that such institutions could lend their support to manufacturers and their customers. This new type of participation was welcomed by both exhibitors and visitors. ■



High-level political support: The Committee of Honour

More than 50 Heads of State lent their formal support to the event by agreeing to become members of the Committee of Honour of TELECOM 79 (see list below). By their moral endorsement, they underlined the universal nature of the world Exhibition, as well as its technical and promotional character and, consequently, its uniqueness.

The setting up of the Committee of Honour stressed not only the universal nature of telecommunications, but also their vital role as a force in the service of world social, economic and cultural development. ■

Heads of State and members of the Committee of Honour of TELECOM 79 (countries listed as they were known then)

A
- Argentina (Republic), **Jorge Rafael Videla**, President of the Republic
- Australia, **Sir Zelman Cowen**, Governor General
- Austria, **Rudolf Kirchschläger**, Federal President of the Republic

B
- Bangladesh (People's Republic of), **Ziaur Rahman**, President of the Republic
- Burma (Socialist Republic of the Union of), **U Ne Win**, President of the Republic

C
- Cameroon (United Republic of), **Ahmadou Ahidjo**, President of the Republic
- Canada, **Edward Schreyer**, Governor General
- Cape Verde (Republic of), **Aristides Maria Pereira**, President of the Republic
- Chile, **Augusto Pinochet Ugarte**, President of the Republic
- Costa Rica, **Rodrigo Carazo**, President of the Republic
- Cyprus (Republic of), **Spyros Kyprianou**, President of the Republic

E
- Egypt (Arab Republic of), **Anwar El Sadat**, President of the Republic
- El Salvador (Republic of), **Carlos Humberto Romero**, President of the Republic
- Ethiopia, **Mengjistu Haile Mariam**, Chairman of the Council of Ministers

F
- Fiji, **Sir George Cakobau**, Governor General
- France, **Valéry Giscard D'Estaing**, President of the Republic

G
- Gambia (Republic of the), **Sir Dawda Kairaba Jawara**, President of the Republic
- Germany (Federal Republic of), **Dr Karl Carstens**, President of the Republic
- Greece, **Constantin Tsatsos**, President of the Republic
- Guatemala (Republic of), **Fernando Romeo Lucas García**, President of the Republic
- Guyana, **Arthur Chung**, President of the Republic

H
- Haiti (Republic of), **Jean-Claude Duvalier**, President of the Republic

I
- Indonesia (Republic of), **Suharto**, President of the Republic

- Italy, **Sandro Pertini**, President of the Republic
- Ivory Coast (Republic of the), **Félix Houphouet-Boigny**, President of the Republic

J

Jamaica, **Florizel Glasspole**, Governor General

L

Lebanon, **Elias Sarkis**, President of the Republic
- Libya (Socialist People's Libyan Arab Jamahiriya), **Muamar Al Gadhafi**, President of the Republic

M

Maldives (Republic of), **Maumoon A. Gayoom**, President of the Republic
- Malta (Republic of), **Dr Anton Buttigieg**, President of the Republic
- Mauritius, **Dayendranadh Burren-Chobay**, Governor General
- Mexico, **José López Portillo**, President of the Federal Republic
- Monaco, **Prince Rainier III**
- Morocco (Kingdom of), **King Hassan II**

N

Nigeria (Federal Republic of), **Olusegun Obasanjo**, President of the Republic
- New Zealand, **Sir Keith Holyoake**, Governor General

P

Pakistan (Islamic Republic of), **M. Zia-Ul-Haq**, President of the Republic
- Panama (Republic of), **Aristides Royo**, President of the Republic
- Paraguay (Republic of), **Alfredo Stroessner**, President of the Republic
- Peru, **Francisco Morales Bermúdez Cerrutti**, President of the Republic
- Portugal, **Antonio Dos Santos Ramalho Eanes**, President of the Republic

R

Rumania (Socialist Republic of), **Nicolae Ceausescu**, President of the Republic
- Rwanda (Republic of), **Juvénal Habyarimana**, President of the Republic

S

San Marino (Republic of), ***Capitani Reggenti*** (Captains Regent)
- Sao Tome and Principe (Democratic Republic of), **Manuel Pinto da Costa**, President of the Republic
- Senegal (Republic of the), **Léopold Sédar Senghor**, President of the Republic
- Spain, **King Juan Carlos I**
- Sri Lanka (Democratic Socialist Republic of), **J.R. Jayawardene**, President of the Republic
- Sudan (Democratic Republic of the), **Gafaar Mohammed Nimeri**, President of the Republic
- Switzerland (Confederation of), **Willi Ritschard** for the Federal Council

T

Thailand, **King Bhumibol Adulyadej**
- Trinidad and Tobago, **Ellis Innocent Clarke**, President of the Republic
- Tunisia, **Habib Bourguiba**, President of the Republic
- Turkey, **Fahri Korutürk**, President of the Republic

U

United States of America, **Jimmy Carter**, President of the United States
- Uruguay (Oriental Republic of), **Dr Aparicio Méndez**, President of the Republic

V

Viet Nam (Socialist Republic of), **Ton Duc Chang**, President of the Republic

Z

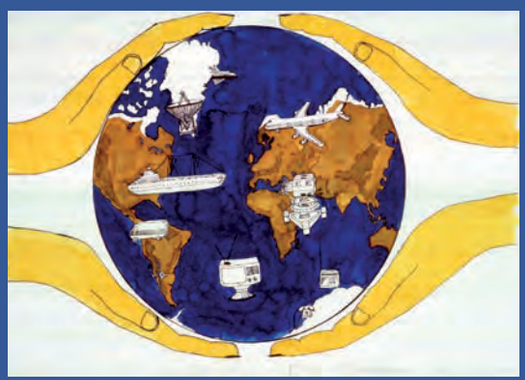
Zaire (Republic of), **Mobutu Sese Seko**, President of the Republic ■

Looking ahead

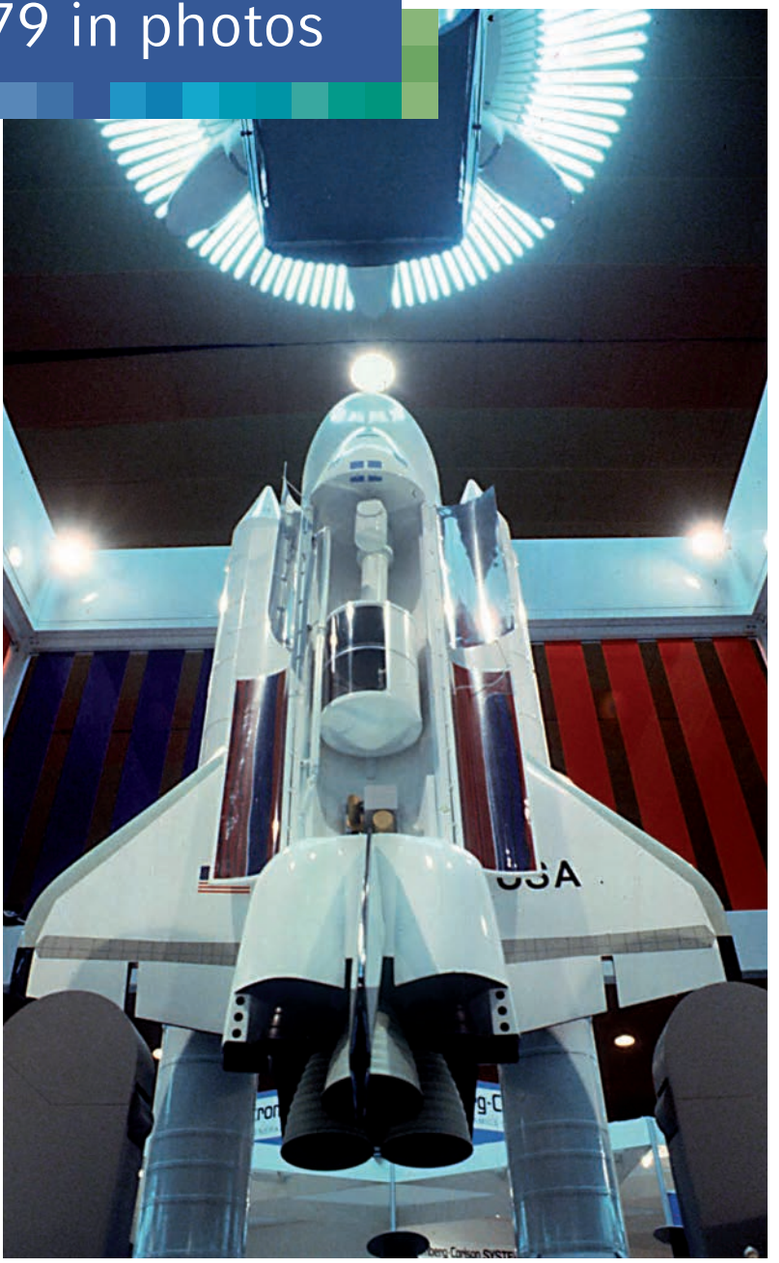
ITU Secretary-General, Mohamed E. Mili, announced that the periodicity of TELECOM exhibitions had been fixed at four years. "This will make TELECOM the universal telecommunication exhibition where visitors can find all the modern equipment available on the market or likely to appear in the near future", he said. ■

Children have fun testing new gadgets at TELECOM 79

"Youth in the Electronic Age" competition



TELECOM 79 in photos




BOOK
FAIR


Danmark
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Erreur, Retapez votre commande
EURO
magazine


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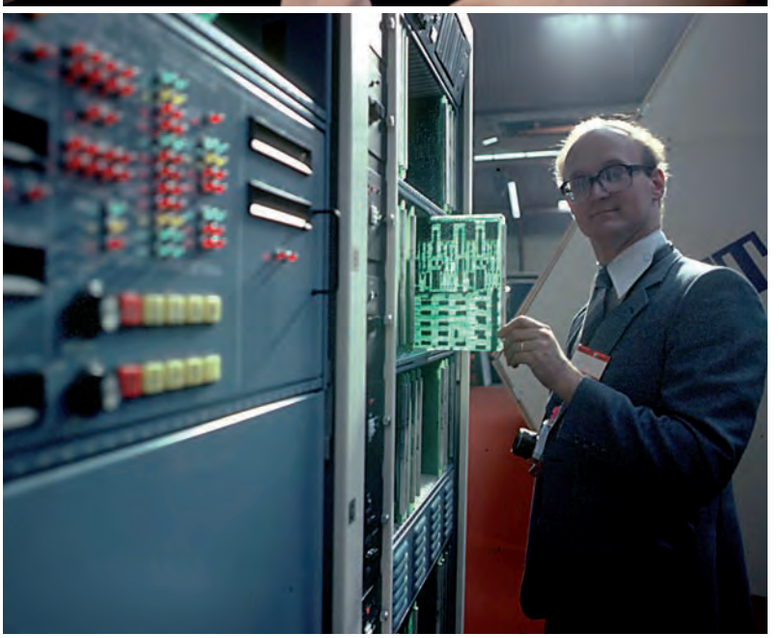


TELECOM >1983

Telecommunications for all

Alamy

Telecommunications for all

>TELECOM 83, which took place from 26 October to 1 November 1983 under the theme "Telecommunications for all", was the first to be held at Palexpo — a new Convention and Exhibition Centre in Geneva inaugurated in December 1981. The event accommodated 659 exhibitors in over 70 000 m^2 of exhibition space. All in all there were 77 000 visitors to the Exhibition.* But the biggest change was that the Forum added a new topic of debate — the legal and regulatory aspects of telecommunications. There was also the well-established film festival, the "Youth in the Electronic Age" art competition, and the telecommunications and electronics Book Fair.

A particularly powerful spotlight was put on TELECOM 83, because the United Nations had declared 1983 World Communications Year. TELECOM 83 thus served as the Geneva "summit" of World Communications Year.

"Partners in progress, administrations, manufacturers and users, are looking closely at ways in which good communications infrastructure can help the economic growth of other sectors of a country's economy," said ITU Secretary-General at the time of TELECOM 83, Richard E. Butler. ■

* *Source: Telecommunication Journal, Vol. 50–V/1983.*

The Exhibition: For all countries and regions

TELECOM 83 took place just a year after the ITU Plenipotentiary Conference in Nairobi, where the principle of ITU organizing world telecommunication exhibitions had again been discussed. It was the general opinion at the Plenipotentiary Conference that these world exhibitions:

- were beneficial for all administrations, public telecommunication entities, users and manufacturers;
- provided for information transfer, as well as dialogue and discussion, of technological advances and their importance for development.

The plenipotentiaries encouraged administrations to organize, in cooperation with ITU, specialized exhibitions with an "emphasis on the needs of telecommunication infrastructure of each region".

"Partners in progress, administrations, manufacturers and users, are looking closely at ways in which good communications infrastructure can help the economic growth of other sectors of a country's economy."

Richard E. Butler,
Secretary-General of ITU

TELECOM 83 was an Exhibition of ITU member countries, their entities and industries — in other words "an exhibition for all" — as ITU-Secretary-General Richard E. Butler put it. As such, the event was designed to contribute towards the accelerated transfer of information and the development of a modern telecommunication infrastructure.

Being "an exhibition for all" did not, however, mean that every telecommunication administration or entity had to present an exhibit. Exhibitors displayed their products, while others set out their development plans. Senior officials of administrations and operating agencies of member countries were able to visit the exhibition and participate in discussions, putting them in a better position to make complex technological choices.

For the first time ITU financed fellowships to enable more members of the Union to participate. Many developing countries were encouraged to display their products, and least-developed countries had their own pavilion.

The Exhibition was an excellent setting for international contacts and business relations. Executives of administrations of ITU member countries and leading representatives of the international financial investment community joined manufacturers, system managers and operators from all over the world in an exchange of ideas on information and technology in all fields of telecommunications and electronics.

The Exhibition opened on 26 October 1983 in the presence of some 1500 international dignitaries, among them the ministers responsible for telecommunications and information of most of ITU's member countries, and leaders of industry. Speakers at the opening ceremony included Léon Schlumpf, the Swiss Minister responsible for Transport, Communications and Energy; Pierre Wellhauser, President of the Geneva State Council; and ITU Secretary-General, Richard E. Butler.

TELECOM 83 saw the first appearance of China and AT&T at a TELECOM event.

Other attractions on the showfloor were:

- the national pavilions of countries (listed here as they were called then) such as Australia, Brazil, Bulgaria, Czechoslovakia, Hungary, India, Indonesia, Iran, Ireland, Israel, Kuwait, Lebanon, Malaysia, Morocco, Portugal, Saudi Arabia and Yugoslavia;
- the great pavilions of industrialized countries such as Austria, Belgium, Canada, Federal Republic of Germany, France, German Democratic Republic, Italy, Japan, Netherlands, Spain, Switzerland, United Kingdom, United States and Union of Soviet Socialist Republics;
- the joint pavilion of the Nordic countries (Denmark, Finland, Norway and Sweden);

The Exhibition was an excellent setting for international contacts and business relations. Executives of administrations of ITU member countries and leading representatives of the international financial investment community joined manufacturers, system managers and operators from all over the world in an exchange of ideas...

- the presentation by the 36 least-developed countries;
- the hall of international broadcasters, with participants ranging from Radio Switzerland International to Radio Beijing;
- national and international operating agencies, space communication organizations, and manufacturers such as INTELSAT, EUTELSAT, and the European Space Agency;
- the attractive individual stands of international corporations such as GTE, IBM, ITT, LME, NEC, Northern Telecom, Philips, Raychem, 3M and others.

National days were celebrated for Austria, Canada, the Federal Republic of Germany, France, India, Italy, Japan, the Nordic countries, Spain, Switzerland, the United Kingdom, the United States, and the Union of Soviet Socialist Republics. ■

The Forum

With increasing interdependence, the technological, financial and policy problems of telecommunications were taking on a worldwide dimension. Hence, at the Forum, a brains trust of several thousand top executives — representing ITU member countries, administrations, manufacturers, commercial users and international organizations — joined leading representatives of the financial investment community from around the world, lawyers, systems managers and operators to discuss the planning, financing, management and implementation of the world telecommunication network, and the convergence of computing and communication technologies.

The Forum was in three main parts, with three different themes, covering the managerial, technical and legal aspects of telecommunications. There was also a special plenary session on telecommunication development. The Forum was organized by ITU in cooperation with 50 national and international engineering societies from all five continents, along with the American Bar Association and the International Bar Association. ■

One world, one network

In Part I of the Forum, under the theme "One world, one network", government leaders, senior corporate managers, chief scientists from government and industry, and representatives from international and financial organizations debated the technological and infrastructure requirements of industrialized and developing nations. They also addressed the future need for financing national, regional and international telecommunication development plans.

This first part of the Forum provided a general perspective, outlining the interdependent roles of marketing, investment and finance, regulation and provision of services, technological development, and social priorities. The topics ranged from commercial aspects of telecommunications to the adoption of national and international strategies in the new technological environment. Emphasis was placed on the role of new technology in developing countries, and the way forward for worldwide telecommunication systems development. Another subject was the integrated services digital network (ISDN), at that time under consideration as the worldwide information highway of the future. Other topics included the evolution, commercial characteristics and financial needs of the telecommunication market; social responsibility; communications operating policy; user requirements; the impact of technological advances on the community; implications for society of expanding telecommunication systems; and the role wireless services would play in global communications networking.

Part I of the Forum concluded with the presentation of the Geneva Declaration by ITU Secretary-General Richard E. Butler. Conceived on the basis that the development of global telecommunications was no longer led by technology but by policy, the Declaration stressed the need for the emergence of international cooperation of a new order, and sought the commitment of governments, industry and the international financial community to participate in the development of a world-based resource for the common good available to all. ■

A key subject of discussion during the Forum was the integrated services digital network (ISDN), at that time under consideration as the worldwide information highway of the future

Telecommunications for all

In Part II of the Forum, under the theme "Telecommunications for all", technical and scientific experts introduced recent advances made to solidify the world telecommunication network and to offer telecommunications for everyone. The focus was on the complex and diverse technical aspects of present and future communication systems. Technical highlights included an extensive discussion on recent and planned development of cellular radio systems, and a similar comprehensive treatment of ISDN technology.

Discussions on technology trends emphasized the increasing part that software was playing in the global communications environment, and optical fibre took its place as an emerging telecommunication technology in its own right.

Rural communication systems, beginning to be recognized as a high priority in many areas across the globe, were discussed during a special session. ■

Legal aspects of telecommunications

Part III of the Forum, under the theme "Legal aspects of telecommunications", was organized by ITU in cooperation with the American Bar Association and the International Bar Association. Speakers examined the legal aspects of international telecommunication and scrutinized international regulations relating to the transnational transport of information.

With the changing nature of technology, it was beginning to be understood that the orderly growth of the global telecommunication infrastructure could not continue without an informed and considered response from those who linked the user to the technology. It was believed that such links, whether direct or indirect, centred upon cost benefits for the supplier, the user and the provider. Furthermore, there was awareness that those links had to be regulated by national and international law.

Part III of the Forum was therefore concerned with: the legal aspects of transborder data flow, and the security and control of content; the structure of political control of resources, ownership of networks, and operating monopolies; the international treaty-making process to define the scope of deployment of technology to the user; and the conflict between operational needs and the technological ability to meet operational requirements. ■

Special plenary session

In response to the ITU Plenipotentiary Conference decision to intensify ITU's regional presence and activities, the special plenary session highlighted regional telecommunication network development. Under the chairmanship of Jean Jipguep, ITU Deputy Secretary-General, the heads of regional telecommunication organizations, such as the Pan-African Telecommunications Union,

the African Postal and Telecommunications Union, the Arab Telecommunication Union, the Inter-American Telecommunication Commission (CITEL), and the Asia-Pacific Telecommunity, as well as the President of the ITU World Plan Committee, spoke on matters concerning regional telecommunication development. ■

"The Golden Antenna 83" film festival

In "The Golden Antenna 83" film festival, an international jury judged the 79 competing films in five categories. The entries came from more than 20 countries, and from international organizations. Entries were submitted on 16 and 35 millimetre film, videotape and slides in multiple projectors.

In response to the 1982 Plenipotentiary Conference decision to intensify ITU's regional presence and activities, the special plenary session at TELECOM 83 highlighted regional telecommunication network development

The international jury included representatives of the permanent missions in Geneva of the United Kingdom, the United States and the Union of Soviet Socialist Republics, and of the French and German administrations. The jury also included public relations and audio-visual specialists from the General Agreement on Trade and Tariffs (GATT), the International Air Transport Association (IATA), the International Bureau of Education of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Red Cross, the United Nations High Commissioner for Refugees (UNHCR), the World Health Organization (WHO), the World Intellectual Property Organization (WIPO) and the International Labour Organization (ILO). ■

"Youth in the Electronic Age" art competition

The 1983 "Youth in the Electronic Age" competition for young artists aged 8 to 18 years attracted some 690 entries from 37 countries. Most entries were the winners of national competitions, some with more than 100 000 entries at local and regional levels. The young imaginations found many ways to express themselves. As well as the customary drawings, water colours and oils, some participants used cloth, which was dyed, woven and sewn into striking wall hangings. Wood was inlaid and carved, creating very original sculptures. Photos, collages — even stained glass — were used to depict ideas about "Telecommunications for all" and World Communications Year.

Some entries were created by groups of students or even entire classes. Space was a common theme, as was the concept of telecommunications linking people around the world. There were also scenes of communal telecommunications in rural villages.

The international jury included members of the permanent missions in Geneva of Canada, Chile, China, the Federal Republic of Germany, Jordan, Nigeria, the United Kingdom and the Union of Soviet Socialist Republics. The French and the Swiss PTT also sent representatives. An art Director of UNESCO's International Bureau of Education, the Director of Creative Arts of the International School of Vienna and international artists were also among the judges.

The winners were announced at a special ceremony held during TELECOM 83 on 30 October in Palexpo. ■

Book Fair

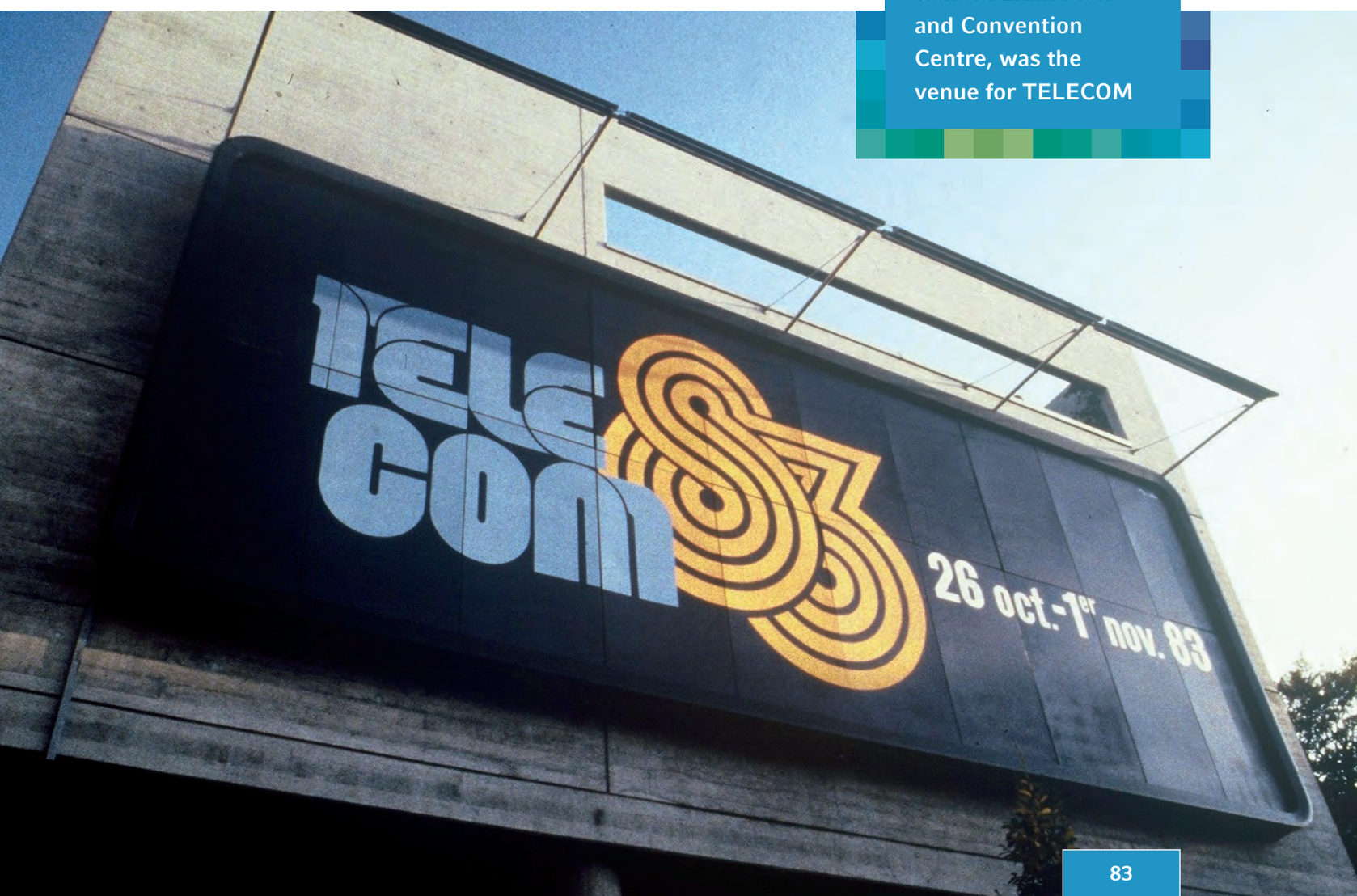
The books on show at the fair were presented in more than 40 booths, and ranged from secondary school textbooks to highly technical monographs on all aspects of telecommunications and electronics. Visitors to the Exhibition and Forum participants were able to purchase or order on the spot publications which might have been difficult to obtain back in their own countries. ■

Novelty

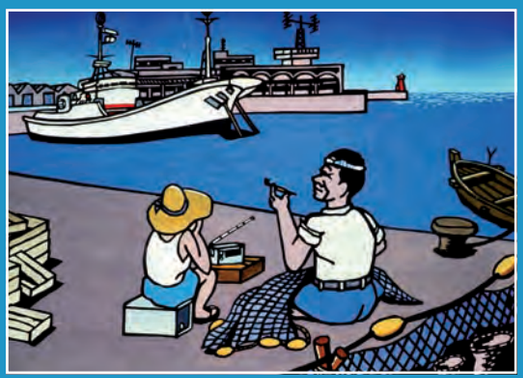
For the first time, Palexpo, the new Geneva Exhibition and Convention Centre, was the venue for TELECOM.

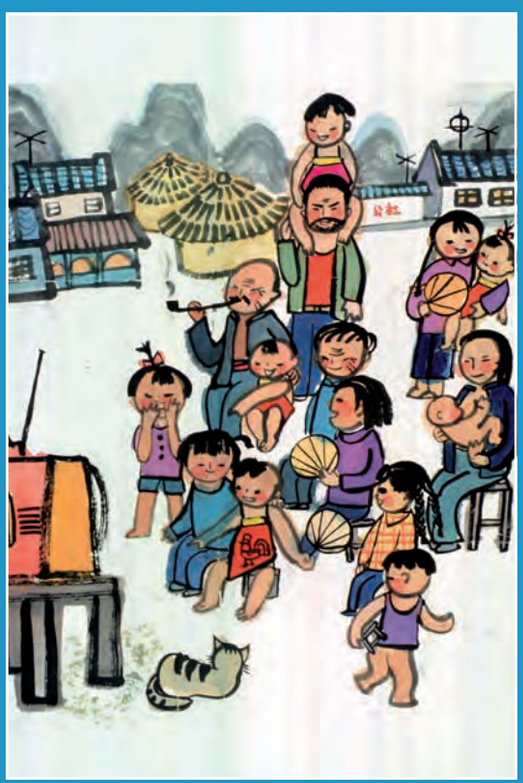
Extensive documentation made available before, during and after the Forum, as well as simultaneous interpretation into English, French and Spanish, added to the value of the discussions. Modern presentation techniques and an audio-visual system that projected an image onto three large screens brought the session chairmen and speakers into close contact with the audience. ■

For the first time, Palexpo, the new Geneva Exhibition and Convention Centre, was the venue for TELECOM



"Youth in the Electronic Age" art competition



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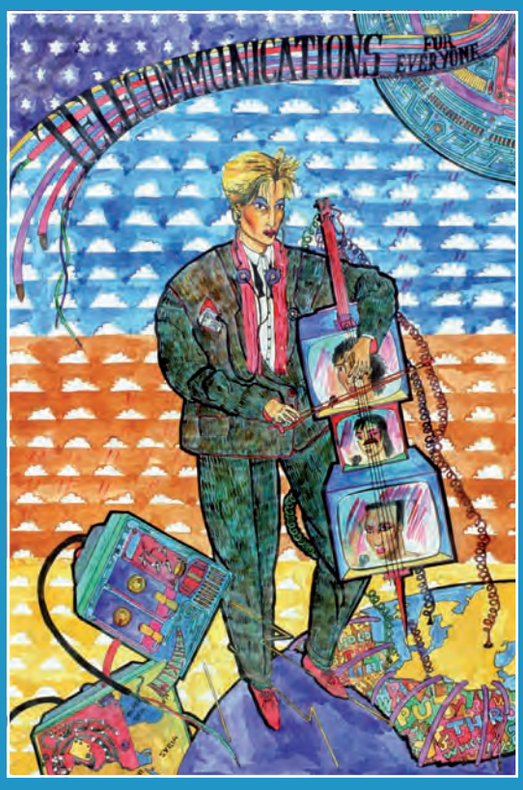
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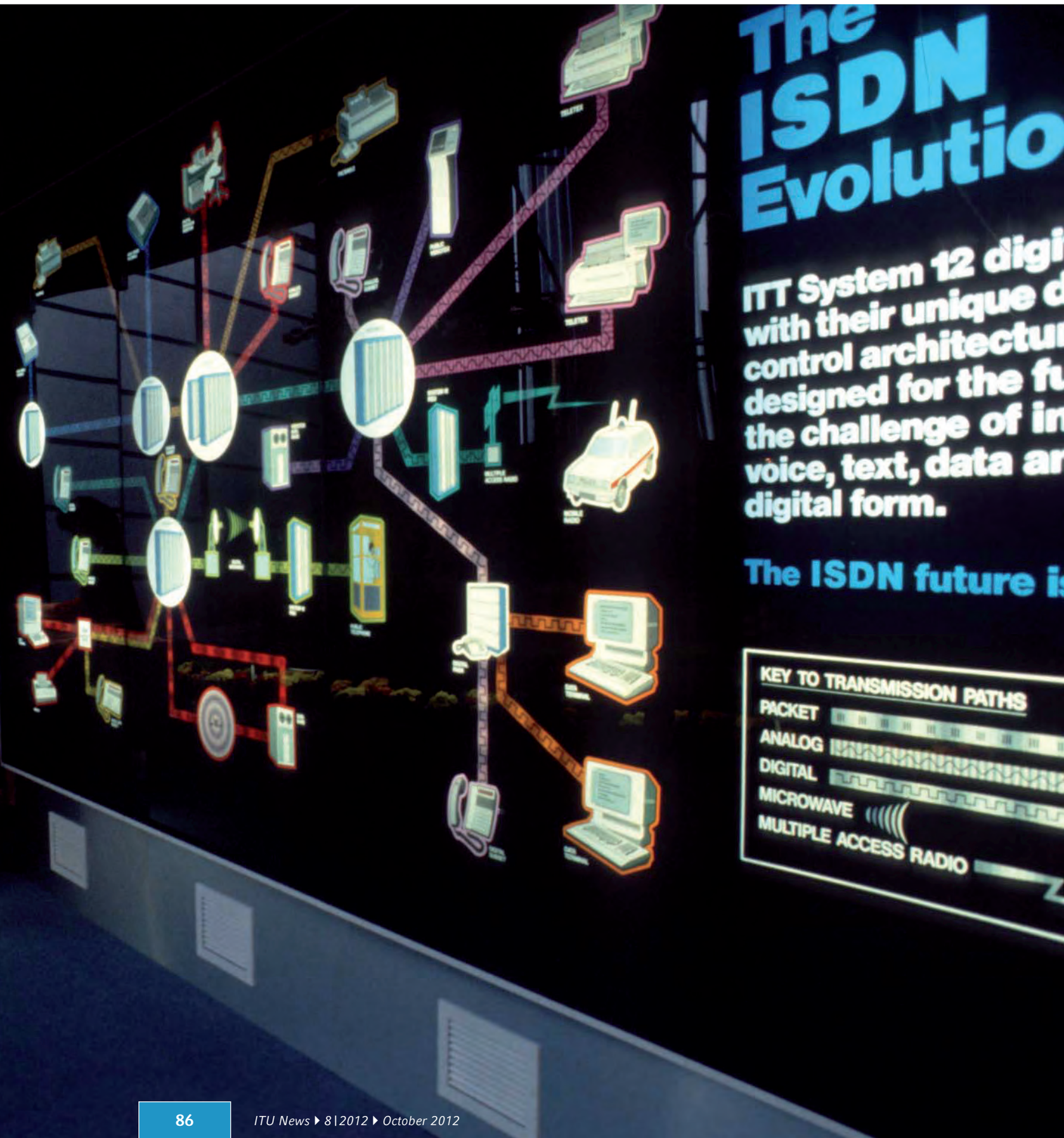
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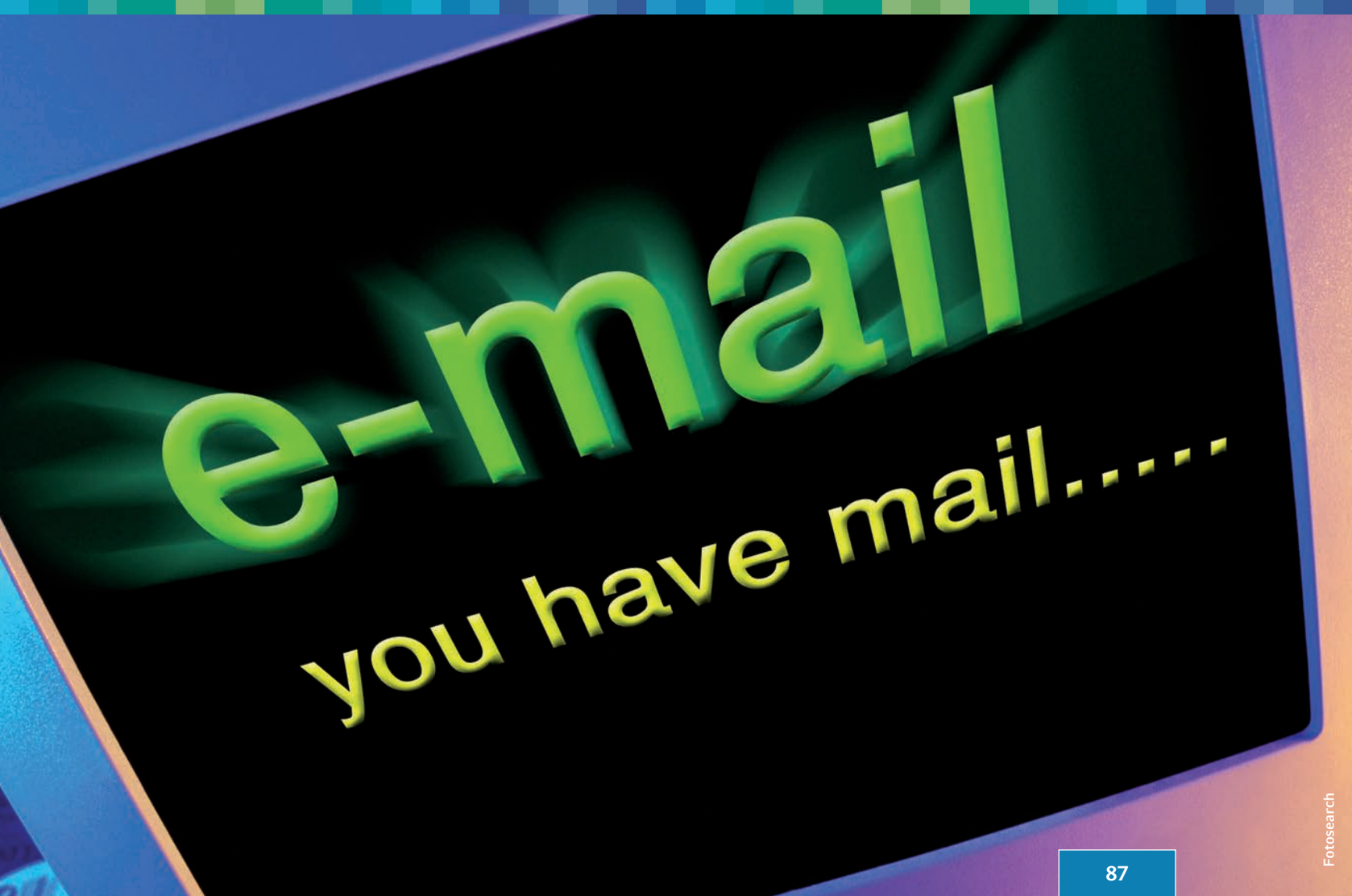
TELECOM >1987

The age of communication networks and telecom — Services for a world of nations



Fotosearch

The age of communication networks and telecom — Services for a world of nations

What had become the world's major telecommunication exhibition was held for the fifth time, in Geneva, from 20 to 27 October 1987. The TELECOM 87 world event comprised many activities — the Exhibition, the Forum, "The Golden Antenna 87" film festival, the "Youth in the Electronic Age" art competition and the Book Fair. All those facets contributed to making the event a real crossroads of ideas and information on every aspect of telecommunications.

TELECOM 87 was a meeting place for all concerned with the executive management, planning and extension of telecommunication networks, and the development of new technology and equipment. It was also a platform for researchers, investors and financiers, lawyers, scientists, and engineers — all professions with an interest in the many branches of the telecommunication sector.

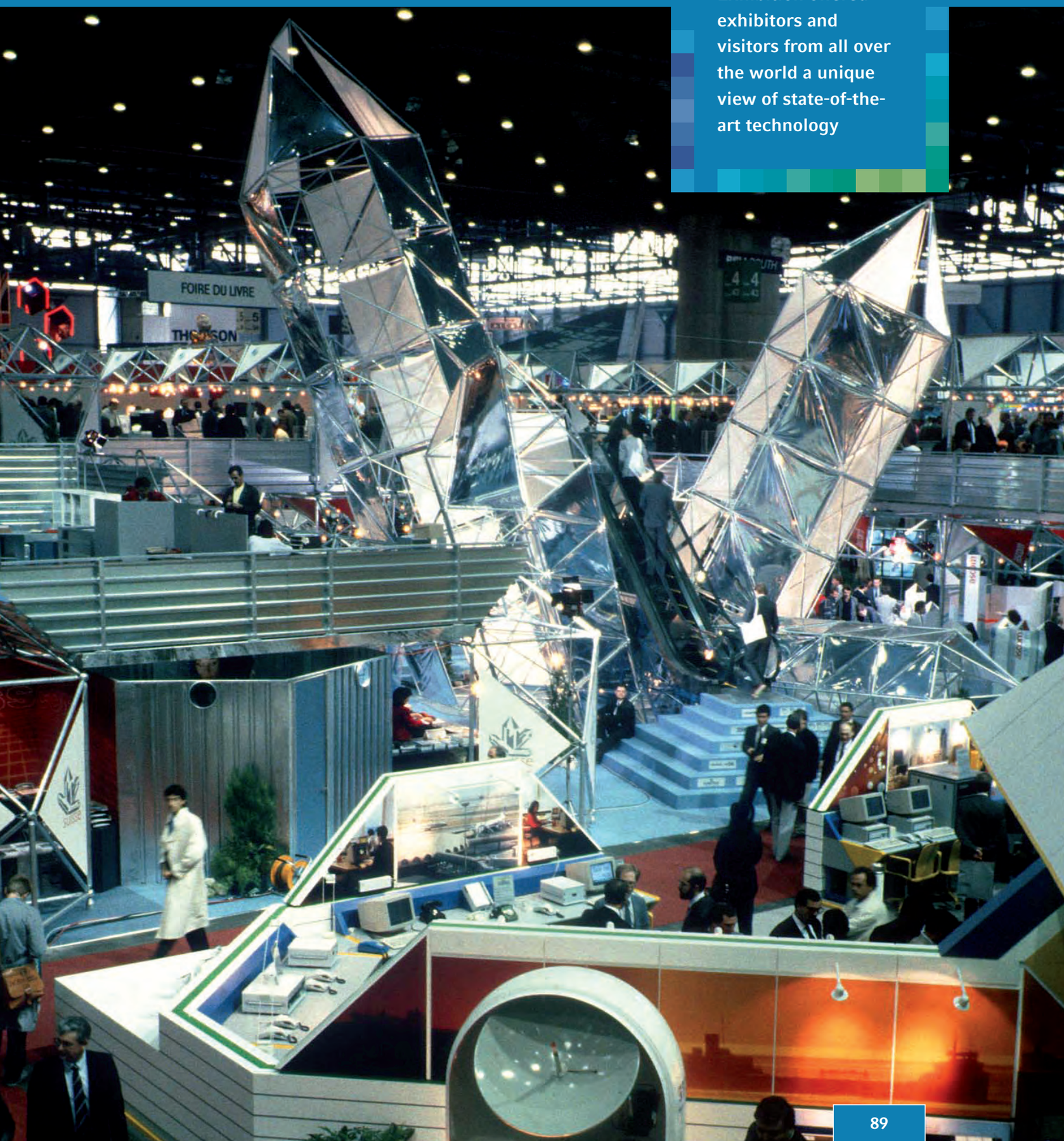
TELECOM 87 was not merely technical in its scope. Like previous events, it was a privileged place for making commercial choices. It was also a forum for the exchange of ideas and for discussions on telecommunication policy and associated legal, economic and financial issues, as well as regional network development and cooperation. All in all, TELECOM 87 was designed for the benefit of ITU's then 163 member countries. ■

Scope of the Exhibition

Under the theme of "The Age of Communication Networks and Telecom — Services for a World of Nations", the TELECOM 87 Exhibition offered exhibitors and visitors from all over the world a unique view of state-of-the-art technology. With more than 800 exhibitors from 39 ITU member countries and covering some 87 000 m^2 of exhibition space, it was a true showcase of telecommunications, culminating in the presentation of the integrated services digital network (ISDN) and the demonstration of a future worldwide electronic mail service.* ■

* *Source: Telecommunication Journal, Vol. 54–X/1987.*

The TELECOM 87 Exhibition offered exhibitors and visitors from all over the world a unique view of state-of-the-art technology



Global messaging comes of age

The highlight of the Exhibition was the demonstration of the X.400 series of Recommendations that define standards for data communication networks for message handling systems (MHS) — more commonly known as e-mail. This gave a foretaste of the new global messaging network.

In fact, Recommendation X.400 demonstrations had taken place at various European and Japanese venues over the previous few years. But the TELECOM 87 demonstration was bigger, bringing together 21 organizations to achieve worldwide coverage, with participants from North America, Europe and Asia and the Pacific. Above all, it paved the way for a fully global messaging network. Nine of the world's major telecommunication administrations collaborated to show they were really putting the infrastructure of the X.400 global network in place.

The first demonstration was made by Bull, ICL and Siemens in September 1985 at SICOB in Paris, which was followed by an extended rerun at the Hanover Fair in Germany in 1986 with the participation of Nixdorf, IBM, GMD and DFN. Fourteen companies participated in the demonstration during the CeBIT 87 event at Hanover in March 1987. All of those events were regarded as significant successes. However, the presence of telecommunication administrations was fairly small, and a great deal of interworking was carried out on a private-to-private basis between individual vendors.

Participation at these events was sufficient for achieving fixed connections between different vendors' equipment, but the real power of X.400 messaging was unleashed when it was supported by major administrations, offering a focal point in their own countries for connectivity to provide international gateways to other countries, and to reach the critical mass of users sought by electronic mail suppliers.

The participating administrations, American Telephone and Telegraph Company (AT&T), British Telecom (BT), Deutsche Bundespost, Dialcom, Kokusai Denshin Denwa Co., Ltd (KDD), Nippon Telegraph and Telephone Corporation (NTT), Swiss PTT, Telenet and Transpac, all demonstrated their support for an international platform of X.400 interconnectivity, to allow electronic mail users to communicate directly with fellow users internationally.

At the TELECOM 87 Exhibition, a 21-company joint stand publicized the message that X.400 stood with ISDN and satellite communications as the way of the future.

The presence of the vendors showed that X.400 messaging was perceived as a major market, in which they were determined to have a share.

The presence of vendors showed that X.400 messaging was perceived as a major market, in which they were determined to have a share

Each of the 12 vendor companies (Danet, DEC, Hewlett-Packard, IBM, Nixdorf, Olivetti, Philips, STR, Sydney, Télésystèmes, Telic Alcatel, and Unisys) were connecting to a number of administration domains, demonstrating their ability to market their products in different countries.

Such a network could never have been achieved without the use of international standards. The first CCITT* X.400 Recommendations were published in 1984 in the Red Book series. They were enhanced by the ISO message-oriented text interchange systems (MOTIS) and had set the ground rules for X.400 interworking. The functional standards produced by CEN/CENELEC in Europe, NBS in America, and TTCN in Japan, however, provided the practical and implementable foundations on which the X.400 products were based. Thanks to the tireless efforts of the producers of functional standards, it

* *The standardization work of ITU dates back to 1865, with the birth of the International Telegraph Union. In 1956, ITU's core standardization activities were centralized under the International Telegraph and Telephone Consultative Committee, known under its French acronym,* CCITT (Comité Consultatif International Téléphonique et Télégraphique). *It was renamed ITU-T (Telecommunication Standardization Sector), one of the three sectors of the ITU, in 1993.*

was possible to achieve a high degree of convergence between them. Consequently, few problems were experienced in achieving interworking between products based on the different functional standards.

While the standards dictated the underlying communication mechanisms, no such constraints were placed on the user interfaces of products. It was in that area, coupled with the facilities and quality of the products, that the vendors were in competition. Looking to the future from the 1987 TELECOM event, it was foreseen that the ability to connect to a national administration's X.400 service would be the minimum criterion for entry to the market. It was also anticipated that user interfaces would range from basic messaging-type facilities, through integrated office systems, to gateways for existing proprietary electronic mail systems.

It seemed paradoxical that open systems interconnection meant collaborating with competitors. The 21 organizations worked together productively to increase the overall market for X.400 products and set up the basic infrastructure, but each was also determined to maximize their own share of the business. Administrations wanted to extend their systems to the end user, following the model of telex and teletex. Vendors wanted to consolidate and protect their own accounts by providing X.400 gateways, and to use the commitment to standards to attack proprietary systems.

The demonstration put the basic infrastructure in place, and gave participating organizations a solid basis on which to build the worldwide electronic mail service. ■

A five-part Forum

The Forum responded to rapid changes that had taken place over the previous four years in technology, industry, the economy, policy and international regulation. These changes had created an entirely different telecommunication environment and opened up new areas for development and market opportunities. By 1987, the Forum had expanded to five parts:

- **Executive telecommunication policy symposium** where telecommunication leaders addressed the major issues of the time.
- **Technical symposium** co-sponsored by more than 50 national and supranational engineering societies.
- **Legal symposium** in cooperation with national and international Bar associations.
- **Symposium on economic and financial issues relating to telecommunications** where there was an exchange of ideas between international economists, financiers and researchers.
- **Symposium on regional network development and cooperation** which offered a meeting place for planners from five continents. ■

The Forum responded to rapid changes that had taken place over the previous four years in technology, industry, the economy, policy and international regulation

"Youth in the Electronic Age" photo and drawing competition

The general theme of the art competition was "Telecommunication for development". Photographs, drawings, paintings and illustrations showed how young people imagined the role telecommunications played in making today's world shrink, and what the effect of telecommunications would be on the family, on mass communications, on economic and social development of nations, and on fostering understanding among peoples of the world.

Thousands of young people participated in the national competitions organized in 44 countries throughout the developed and developing worlds. National juries selected the 10 best entries in each age group, and an international jury in Geneva awarded the prizes.

Alexander Kearney of St Columba's National School (Dublin, Ireland) was the national winner in his age category (8 to 12 years), as well as the overall winner of the "Youth in the Electronic Age" competition in Ireland. His prize included a trip to Geneva and a guided tour of the satellites telecommunication facilities, located at Loèche (Valais) in Switzerland. ■

Feedback from youth

ITU receives feedback on its work from many different sources and one of them, delightfully frank and sincere, was the collection of drawings and paintings submitted by young people from all over the world who took part in the art competition.

Not surprisingly, youth from different regions and cultures tended to see telecommunications in different ways or chose to highlight particular aspects of telecommunications or specific services.

Many drawings showed television as a learning tool. One young artist depicted a teacher at the blackboard in the form of a television set while a pupil appeared as the terrestrial globe. Another drawing showed a schoolboy's satchel replaced by a television receiver. Perhaps the young people believed that greater use should be made of television for education.

It was clear that the young artists were very much aware of the latest telecommunication techniques. Space techniques as well as optical fibre were often illustrated, and the marriage between computers and communications appeared to be familiar to many participants.

While most drawings gave an optimistic picture of the telecommunication world — for example, seeing the telephone as a means of contact between people or as a bridge between nations — some artists did appear to be giving a warning against becoming a slave to the computer — a keyboard connected to a person's brain, a brain filled with electronic circuitry.

Young people imagined the role telecommunications played in making today's world shrink, and what the effect of telecommunications would be on the family, on mass communications, on economic and social development of nations, and on fostering understanding among peoples of the world

As ITU Secretary-General Richard E. Butler said at the time, "Perhaps we need here philosophical and sociological studies to anticipate any negative tendencies that might arise from a possible misuse of the powerful techniques now available in telecommunications. Thus, we could set a course which would avoid effects such as human contacts being largely replaced by electronic communication, or an excess of communication which people would be unable to escape from."

By their awareness of the various telecommunication techniques, and of the multiplicity of available or potential services, the young artists revealed the importance they accorded to telecommunication as a medium for human understanding and development.

As Richard E. Butler said, "Such awareness is a heartening sign. Hopefully, it will bear its fruit in the choice by many young persons of a career in telecommunications. For if the targets for development foreseen in The Missing Link report are to be achieved, an essential ingredient is a large increase in the number of qualified personnel. So let the message given to us by our young artists be acted upon to ensure that the necessary encouragement is given to youth to take up a career in one of the most exciting and dynamic of services today; a service which has enormous potential for growth and a mission of development for the underprivileged countries of the world, but which will only be guaranteed if the right people can be found and educated to perform the mission which awaits them." ■

"The Golden Antenna 87" film festival

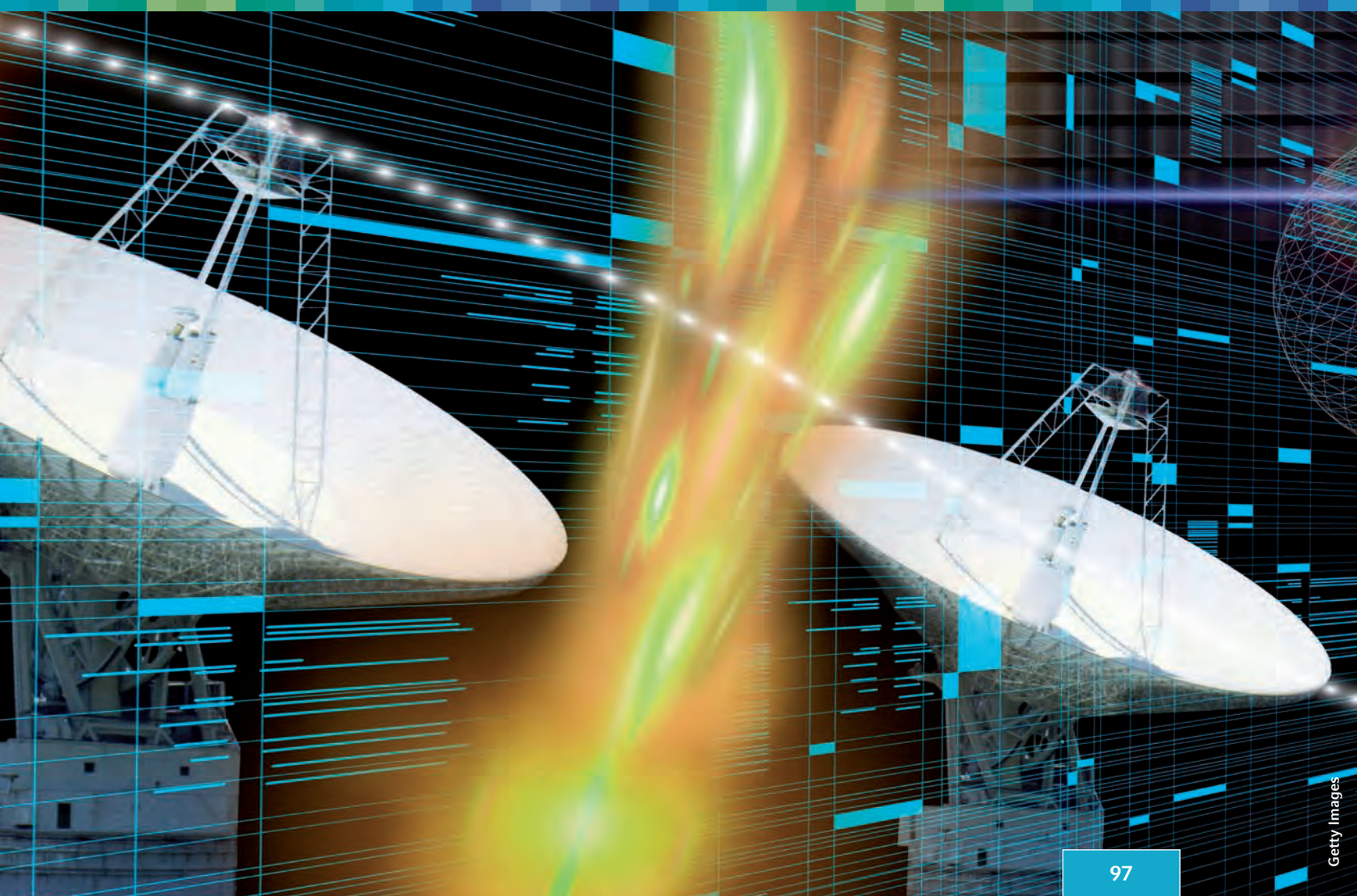
The film festival attracted 76 cinematographic productions from 23 countries and two regional organizations, all competing for the "The Golden Antenna 87". ■

Book Fair

Acoustics, electromagnetism, lasers, optical fibre, computers, meteorology, ISDN, human speech, aeronautical and space techniques, facsimile transmissions, and teleprocessing were among the subjects covered in the publications and audio-visual programmes exhibited at the Book Fair. More than 100 publishers were represented. ■

TELECOM >1991

An interconnected world: Improving the quality of life for all



Getty Images

An interconnected world: Improving the quality of life for all

The theme chosen for TELECOM 91, held in Geneva on 7–15 October, reflected ITU's commitment to ensure that all of its member countries would keep abreast with the rapid developments in telecommunications so that all people everywhere would have a better life.

TELECOM 91 broke all records for size, number of visitors and the magnificence of the stands. The "World of Nations" exhibit covered all 164 ITU member countries.

Held at the Geneva Exhibition and Convention Centre, Palexpo, under the general theme "An interconnected world: Improving the quality of life for all", TELECOM 91 gave exhibitors the opportunity to demonstrate how information can be collected, managed, shared, processed, transmitted and received, irrespective of its form (text, voice, pictures or data), the equipment used, or the source and destination of the message.

TELECOM 91 demonstrated that users could now be linked to information and services, and — what was then presciently seen as being more important — to other users all over the world.

TELECOM 91 brought together the leaders of the world telecommunication industry, together with decision-makers, system and service providers, and representatives of governments, operating agencies, regulatory bodies and numerous new (business or individual) user groups. Visitors were mostly top-level professionals from the electrical engineering industry, finance, banking, business and insurance services, as well as the scientific community. A majority of them had responsibilities for management, sales, marketing, design or development.

At Forum 91, these stakeholders took part in the five symposia, which centred on new developments and key telecommunication challenges of the day, as seen from the vantage points of their own particular concerns or fields of activity: political; technical; regulatory; economic; and from the special requirements of people with disabilities.

"The Golden Antenna 91" film festival attracted a record-breaking 94 entries from 23 countries and four regional or international organizations. The Book Fair enabled participants to take a look at the latest publications in the telecommunications field. And the winners of the "Youth in the Electronic Age 91" photo and drawing competition were announced. ■

The "World of Nations" exhibit at TELECOM 91 covered all 164 ITU member countries

Forum 91

In symposia on policy, technical, regulatory and economic matters, Forum 91 presented a panorama of all aspects of telecommunications. A fifth symposium, in the form of a round table, the first of its kind at an ITU TELECOM Forum, addressed the requirements of people with disabilities, the elderly and other specific segments of the general public, and the relationship between these special needs and the opportunities being opened up by the telecommunication industry.

Under the theme "Towards a global networked society", the *Policy Symposium* — an authoritative think-tank on matters of telecommunication policy — analysed developments in the structure of world communications.

The discussions at the *Technical Symposium* focused on the theme of "Integration, interoperation and interconnection: the way to global services". Speakers reviewed the latest innovations, the technological trends affecting the development of telecommunications, and the cooperative efforts being made for the development and integration of regional networks.

In the course of the *Regulatory Symposium,* under the theme "Competition and cooperation in the changing environment", lawyers and legal experts had an opportunity to focus on the emergence of new providers of telecommunication services, and on the changing relationships among them. They also discussed the implications of the move towards deregulation and competition.

The *Economic Symposium* reviewed the relationship between economic policy and telecommunication planning in developing countries. ■

Addressing the needs of people with disabilities

Finally, the *Telecommunications round table* on "Telecommunications — Accessible to everyone" addressed the way that the services offered by the telecommunication industry could be opened up to people with special needs. Participants recognized the vital role that telecommunications can play in assisting people with disabilities to lead a fuller life. They discussed various aspects of developments in the telecommunication industry, and the way such developments could provide a response to the needs of the more than half a billion people throughout the world with sensory or physical impairments, who thus required adapted telecommunication equipment or services.

ITU, in cooperation with the United Nations special representative of the Secretary-General for the promotion of the United Nations Decade of Disabled Persons 1983–1992, brought together leading experts from the telecommunication industry, governments, research and the disabled community to discuss such areas as the special requirements of people with disabilities, the scope of their needs, the developments taking place, the means by which available technology could be readily adapted, and the needs for standardization, legislation and effective means of implementation.

While various independent advances were taking place in the highly industrialized countries, ITU recognized the need for a more coordinated effort in order to ensure that all people were provided with the opportunity to benefit from access to telecommunication services, facilities and equipment. ■

"The Golden Antenna 91": International film and video festival on telecommunications and electronics

With the aim of highlighting worldwide production of high-quality films and videos on topics in its areas of expertise, ITU organized the 6th International Film and Video Festival on Telecommunications and Electronics — *The Golden Antenna 91* — within the framework of TELECOM 91. The record-breaking Golden Antenna 91 (89 films or videos, and one *hors concours*, from 23 countries and four international or regional

A round table on "Telecommunications — Accessible to everyone" at TELECOM 91 addressed the way services offered by the telecommunication industry could be opened up to people with special needs. Participants recognized the vital role that telecommunications can play in assisting people with disabilities to lead a fuller life

organizations) was open to the 164 ITU member countries, to exhibitors at TELECOM 91 and to representatives of the telecommunication industry.

All the productions were projected during the TELECOM 91 Exhibition at Palexpo, Geneva, in order to offer the tens of thousands of visitors an interesting kaleidoscope of the best films and videos made on telecommunications and electronics. The Golden Antenna 91 thus provided an opportunity for the general public, as well as specialists, to evaluate the progress made in these technologies, and their impact on the human and socio-economic spheres of the contemporary world. ■

Record-breaking participation

The interest aroused by the venture was evidenced by the 94 films or videos competing in the festival, representing 23 countries (Australia, Austria, Burkina Faso, Canada, Denmark, Finland, France, Germany, India, Italy, Japan, Republic of Korea, Malta, Mexico, Portugal, Saudi Arabia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States and the Union of Soviet Socialist Republics); three regional organizations (Commission of the European Communities — CEC, the European Broadcasting Union — EBU, and the European Telecommunications Satellite Organization — EUTELSAT) and one international organization (the International Telecommunications Satellite Organization — INTELSAT).

The record-breaking participation demonstrated that the world of communications knows no frontiers. Burkina Faso, the Republic of Korea, Malta, Mexico and Turkey entered this quadrennial event for the first time. ■

Special donation from Switzerland

As a contribution to the success of the 1991 festival, PRO TELECOM (Switzerland) donated the Golden Antenna 91, together with four Silver Antennas and four Bronze Antennas. ■

Categories

The range of subjects dealt with was wide and fully representative of the aims of the Festival. The productions presented were grouped into five categories:

A. Productions on telecommunications and electronics in general made for public information

B. Productions on specific telecommunication services made for public information

C. Publicity, advertising or promotional productions on telecommunications or electronics

D. Productions concerned with technical research or with specific telecommunications or electronic techniques

E. Vocational training productions in the field of telecommunications and electronics, and

those produced under the ITU's technical cooperation programme for the development of telecommunications in member countries. ■

International jury

The 27-member international jury, under the chairmanship of Antony Dean (United Kingdom), sat from 9 to 13 September 1991 at ITU headquarters in Geneva to view all the productions entered in the festival, by category. The jury comprised experts in the field of telecommunications and electronics, as well as in audio-visual arts. They gave due regard to the purpose of each production and its intended audience. Criteria applicable in the awarding of points were based on audio-visual impact, the content and purpose of the production, and the impact of the production on the promotion of telecommunications at national and international levels. ■

Winners

The jury awarded the top prize — the Golden Antenna — to the film entitled "GSM — Global system for mobile communications" from Denmark. The film relates the history of GSM and its facilities, and presents the people, languages and GSM locations in 12 western European countries.

The 27-member international jury, under the chairmanship of Antony Dean (United Kingdom), sat from 9 to 13 September 1991 at ITU headquarters in Geneva to view all the productions entered in the festival

Five Silver Antennas and five Bronze Antennas were also awarded. Other films received honourable or special mentions. ■

Silver Antennas

- ***Category A:*** 1991 (Italy)
- ***Category B:*** Europe on the air (EUTELSAT)
- ***Category C:*** *Ce qu'ils en disent* (France)
- ***Category D:*** *Symposium international de la télévision "Montreux 91"* (Switzerland)
- ***Category E:*** *Résolument tourné vers l'avenir: l'apprentissage d'électronicien* (Switzerland) ■

Bronze Antennas

- ***Category A:*** *150 ans de télécommunications internationales* (France)
- ***Category B:*** Broadband (Australia)
- ***Category C:*** *A votre service, vos PTT* (Switzerland)
- ***Category D:*** *Pour une industrie européenne d'écrans à cristaux liquides* (France)
- ***Category E:*** Radio communication (United Kingdom) ■

Honourable mentions

- ***Category A:*** *Soht Tae* — A dream to reach out and touch (Republic of Korea) ■

Special mentions

- ***Category A:*** Telegraph road (Finland)
- ***Category B:*** Telecommunication vector and rural dynamics (India)
- ***Category C:*** *La boîte* (Burkina Faso) ■

Book Fair 91: Fourth world book and audiovisual fair on telecommunications and electronics

Computer communications, acoustics, electromagnetism, lasers, optical fibre, computers, meteorology, ISDN, human speech, aeronautical and space techniques, high-definition television, facsimile transmissions, microwave communications, data communications, radio and television broadcasting, remote sensing, telecommunication satellites, broadcast engineering, cable television, computer programming, direct broadcast satellites, economics of telecommunications, mass communication techniques, telephone networks, space communication systems, teletext — these were just some of the subjects covered in the publications and audiovisual programmes exhibited at the Book Fair 91.

Scores of publishers and authors of technical works seized the opportunity offered by the Book Fair to make their publications and audiovisual

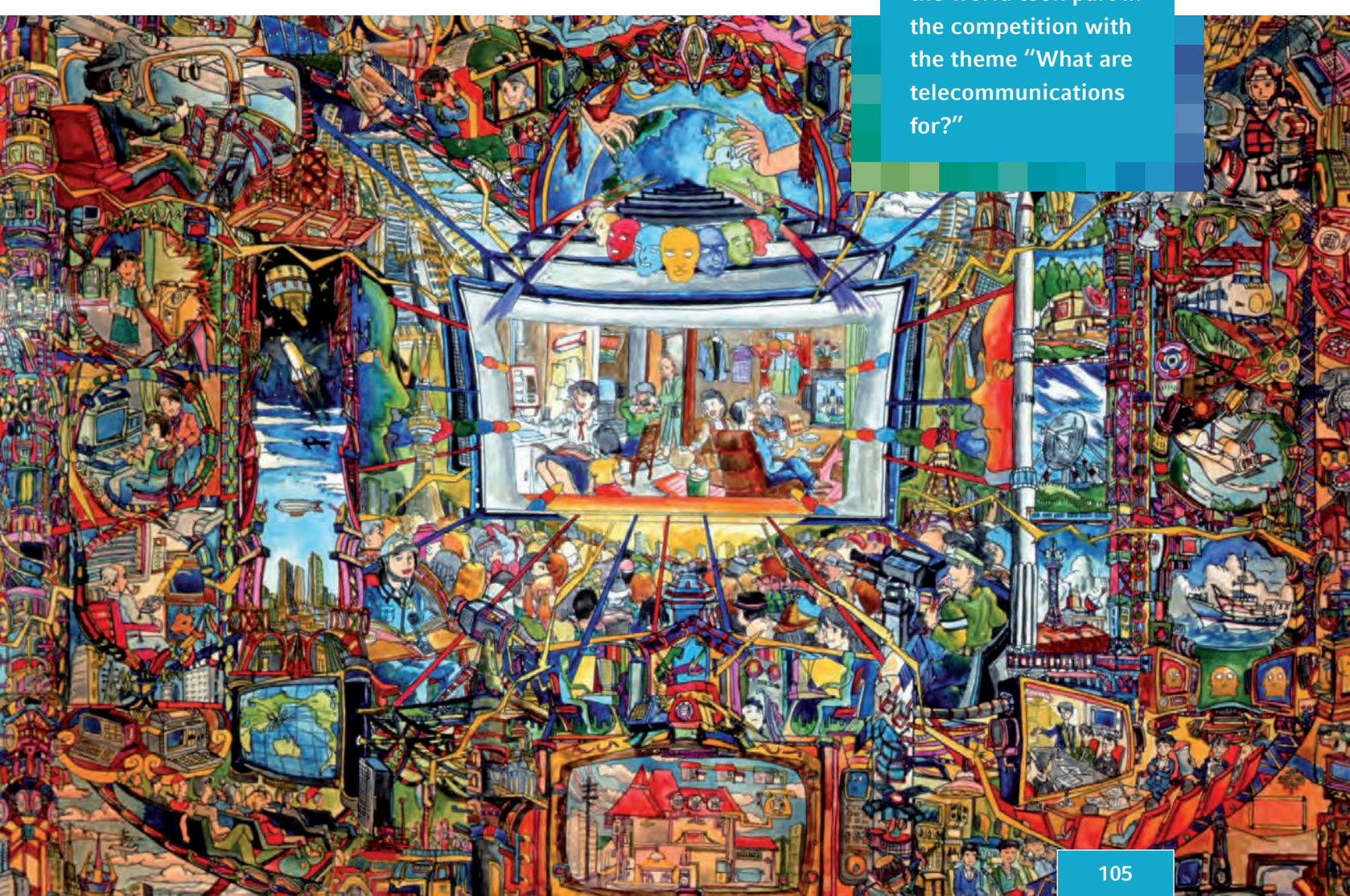
programmes known to the tens of thousands of visitors to TELECOM 91. Visiting engineers, manufacturers and technicians with responsibilities for telecommunications, or for training in electronics and telecommunications, looked to the Book Fair to help them keep abreast with the rapid developments in telecommunications and electronics technology. ■

"Youth in the Electronic Age 91": Sixth worldwide photo and drawing competition

The worldwide photo and drawing competition, with the theme "What are telecommunications for?", was open to ITU member countries. Some 20 000 young people from all over the world took part in the competition.

The prize-giving ceremony was held at Palexpo as part of TELECOM 91, under the chairmanship of Dr Pekka Tarjanne, Secretary-General of ITU at the time of TELECOM 91. ■

Some 20 000 young people from all over the world took part in the competition with the theme "What are telecommunications for?"



Cable & Wireless and ITU sponsor telecommunication training

Cable & Wireless and ITU announced on 10 October 1991 a joint scheme to sponsor telecommunication training for candidates from developing countries.

The scheme would provide intensive training courses lasting in most cases three to four weeks at the Cable & Wireless Telecommunications College at Porthcurno (Cornwall, United Kingdom) for more than 75 trainees by March 1993. ITU would nominate trainees from among requests submitted to it by member countries.

Announcing the training scheme at TELECOM 91, Lord Young, Executive Chairman of Cable & Wireless, said "Cable & Wireless is proud of its reputation as a world leader in the provision of telecommunications training. The sort of expertise which we can pass on is needed all round the world if we are to have efficient global telecommunications. Training is a very effective way of contributing to the improvement of telecommunications in developing countries and we hope that other companies will be encouraged to set up similar schemes in the future."

Dr Tarjanne commented "We still have some way to go before the whole of mankind is within reach of a telephone. One of the most important factors in achieving that goal will be ensuring the availability of expertise to operate such a truly worldwide network. This scheme, and I hope others like it, will make a substantial contribution towards raising standards all round the world."

Facilities at the Cable & Wireless Telecommunications College in Porthcurno made it one of the most advanced specialist establishments of its kind in the world, equipped to provide training at the leading edge of technology. A new training centre was being built at Coventry (United Kingdom) in order to ensure that excellence in training would be maintained into the next century. ■

New network technologies

Dr Tarjanne explained that the introduction of digital techniques, the progress made in computer technologies, the appearance of new transmission media, and the development of new transmission and switching facilities had, over the previous 20 years, changed the structure of the worldwide telecommunication network, giving rise to an enormous increase in capacity for transmitting and treating information.

He saw that the evolution of the network was continuing, and that new concepts were appearing that would facilitate worldwide connectivity. Standards had played a key role in the prompt and harmonious introduction of new technologies to the network.

Specialists were familiar with the new concepts, using abbreviations to refer to them — such as SDH, ATM, IN, TMN and UPT. For many people, however, the abbreviations were familiar but the concepts much less so.

"Universal personal telecommunications will allow a user to receive and send calls from any terminal, on any network, based on a unique personal number."

Dr Pekka Tarjanne, Secretary-General of ITU

"The speed of introduction of new technologies in the network will vary in different parts of the world according to local needs and priorities. The final goal of their introduction should however be the improvement of quality and the introduction of a wide spread of services whilst responding to the real needs and requirements of the users", said Dr Tarjanne. "For example, universal personal telecommunications will allow a user to receive and send calls from any terminal, on any network, based on a unique personal number. The spreading of the intelligence in the network (intelligent network and telecommunications management network) will simplify its management and improve its performance. The introduction of new services will be facilitated by the transport capacity offered by the synchronous digital hierarchy and asynchronous transfer mode technology", he added.

Visitors to the TELECOM 91 Exhibition in Geneva had the opportunity of seeing many new technologies already in action. Research was still going on in various laboratories and, with high priority being given by CCITT to developing the relevant standards, it was hoped that the benefits stemming from practical application of the new network technologies would soon be widely available. ■

TELECOM 91 in figures

The event attracted **132 351** visitors. There were also **1000** VIPs and **1794** accredited media representatives. For the Forum, there were **3633** participants who also took the opportunity to visit the Exhibition.

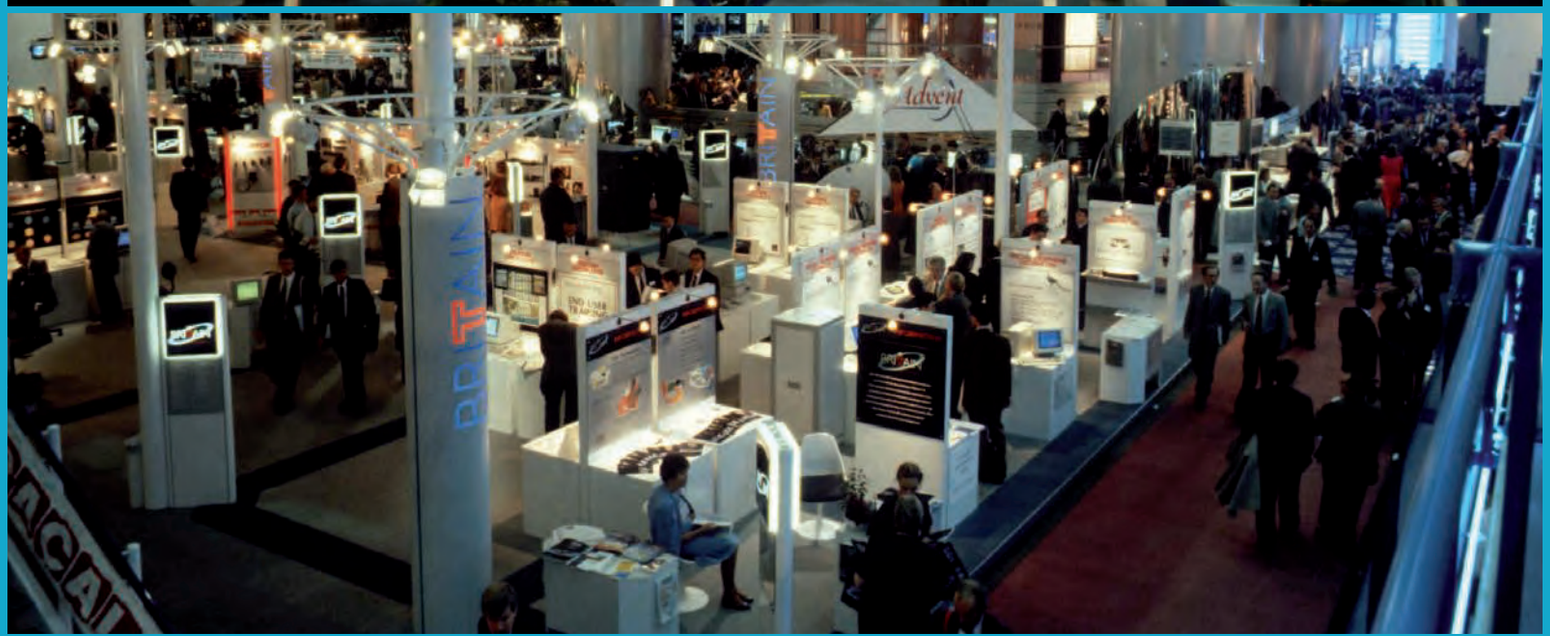
28 479 staff for **849** exhibitors from **36** countries.

87 260 m^2 net of exhibition plus **4600** m^2 in the open air.

164 countries were represented. There were ministers from **77** countries, and **85** directors-general from **74** countries, as well as business and industry leaders and other personalities.

Source: Telecommunication Journal, Vol. 58–XII/1991.

TELECOM 91 in photos




FRANCE
ariane

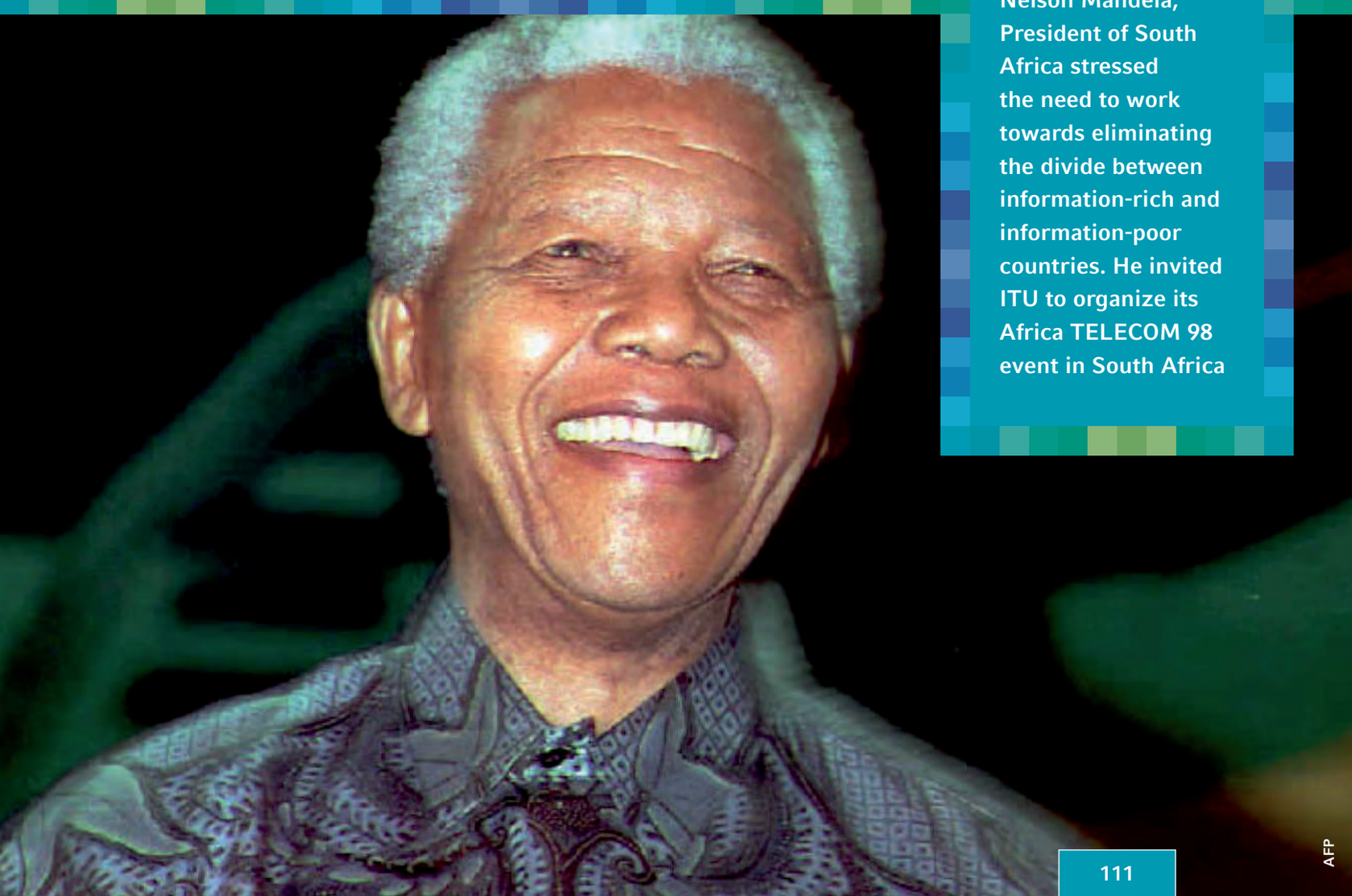

switzerland telecomland
BELLSOUTH


SCANDINAVIA
NORWAY


ELEKOMUNIKASI INDONESIA
SOUTH CHINA SEA

TELECOM >1995

Connect!



Nelson Mandela, President of South Africa stressed the need to work towards eliminating the divide between information-rich and information-poor countries. He invited ITU to organize its Africa TELECOM 98 event in South Africa

AFP

Connect!

By 1995, TELECOM had become the world's largest event dedicated to the telecommunications and information technology industries, and its increasing importance was reinforced by the attendance of Nelson Mandela, President of South Africa.

TELECOM 95 featured a spectacular opening ceremony sponsored by Intel Corporation, which included keynote addresses by Nelson Mandela, Jacques Santer, President of the European Commission, Andrew Grove, President and Chief Executive Officer (CEO) of Intel Corporation, Kaspar Villiger, President of the Swiss Confederation, and Olivier Vodoz, President of the State Council of the Republic and Canton of Geneva.

Speaking at the opening ceremony, President Mandela said ITU was a body of crucial importance for the entire African continent. *"We need a vast expansion of our communication and information network and ITU, as the principle driving force behind international policy, technological development, cooperation and skills transfer, is an indispensable agent in this regard,"* he stated.

He went on to underline the importance of communication and access to information to human beings around the world, and stressed the need to work towards eliminating the divide between information-rich and information-poor countries. He invited ITU to organize its Africa TELECOM 1998 event in South Africa.

Industry convergence drives strong growth

TELECOM 95 was the 7th World Telecommunication Exhibition and Forum organized by ITU, and attracted 1066 exhibitors. The explanation for the growth since 1991 was the rapid convergence taking place at that time between three major industries: telecommunications, information technology and broadcasting. Computer and communications equipment companies were rushing to gain a foothold in the emerging multimedia market. To fully benefit from the new interactive technologies that they were developing, they needed the world's telecommunication networks to transport their applications to users.

"We are absolutely delighted that President Mandela, who is such an inspiring figure to the world because of his lifetime of struggle against injustice, should feel that TELECOM is an important enough event to fit into his very demanding schedule," said Dr Pekka Tarjanne, Secretary-General of ITU. ■


MEASUREMENT
INFORMATION
DEMONSTRATION
SEMINAR
REGISTRATION
HEWLETT
PACKARD

The trend towards convergence was reflected in the TELECOM 95 theme of "Connect!" With close to 190 000 participants, including more than 100 ministers from the 184 ITU member countries, TELECOM 95 showed remarkable growth. Attendance was around 18 per cent higher than at the 1991 event.

"What we hadn't quite fully expected when we made our predictions about the size of the show two years ago was the degree and speed of change in the industry," said Jean Jipguep, Chairman of the TELECOM Board. "Anyone working in the areas of telecommunications, information technology or broadcast entertainment is well aware of the convergence currently taking place in what were once discrete fields of endeavour," Mr Jipguep added.

The rapid growth of computer networks, including the explosion in the use of the Internet, meant that traditional information technology (IT) providers now had to work telecommunication technologies into their latest offerings. Likewise, the major telecommunication carriers were upgrading their networks with highly sophisticated intelligent switching equipment designed by software developers to enable delivery of a host of new applications. ■

Interactive software applications

At the opening ceremony, Andrew Grove illustrated the convergence in the industry by showing how personal computers would open the door to a host of new interactive applications. Dr Grove's multimedia presentation involved live communication links to Africa and Japan, and was developed with the assistance of several of the world's leading telecommunication and computer companies. Dr Grove was acknowledged as one of the pioneering figures in the computer industry. Since Intel was founded in 1968, it had become a leading manufacturer of computer chip and was, by the time of TELECOM 95, aggressively moving into the new markets opening up as a result of the rapid increase in the computing power of the personal computer.

Microsoft´s Telecommunications Manager, Tony Bawcutt, said the show was becoming increasingly relevant to the company's marketing strategy for the years ahead. "Microsoft has been expanding its market participation to include personal communications, enterprise server products, groupware, network services and broadband information on demand," Mr Bawcutt explained. "We plan to leverage the installed base of Windows users as they become major adopters of communication services, and provide platforms for network providers upon which such services can be developed and deployed."

The increased involvement of software companies in the telecommunications industry was also demonstrated by the presence of Oracle for the first time. The company's Senior Vice President

of Telecommunications, John Black, said Oracle had decided to exhibit because of TELECOM 95's focus on the convergence of telecommunications, entertainment and computing. "As the world's largest information management company, Oracle offers an array of solutions for the telecommunications industry. The business of TELECOM 95 is Oracle's business, and we are happy to participate in this important event," he said.

Telephone companies were in a strong position to shape the evolution of the new information superhighway, owing to the sheer scope of existing telephone networks, which were continuing to show a high rate of growth. Some 34 million new lines had been added in 1994, while 18 million new mobile subscriptions had been registered. Although growth in cellular subscribers was still outpacing growth in main lines, the percentage increase in main lines in 1994 was the highest in over a decade. Mobile cellular subscribers grew 61.3 per cent during 1994 while fixed-line subscribers grew 6.7 per cent.

"Many of the participants at TELECOM 95 will be vital players in the development of the newly emerging Global Information Infrastructure," said Dr Pekka Tarjanne.

While there were fewer telephones than television sets in 1995, they greatly outnumbered personal

computers. The development of sophisticated technologies such as high-definition television (HDTV) and video-on-demand meant that the entertainment and broadcasting industry was using more and more of the technology that was once the exclusive province of telecommunication engineers.

As Ray Smith, CEO of Bell Atlantic, said "Soon we will have televisions that can listen, PCs that can speak, and telephones you can watch." ■

Forum highlights

The theme of TELECOM 95 — "Connect!" — set the tone for the Forum, which was attended by 3912 participants. The Forum programme consisted of two summits — Strategies and Technology — along with a special session dedicated to the Internet, Internet@Telecom95.

At the Strategies Summit, participants heard how electronic networks were now key for the exchange of information. "The myriad of new technologies will make it possible for a user to communicate with anyone, anywhere, at any time, and will conquer the barriers of time, national boundaries, and languages," said Hiroshi Ichihara, President of Japan's KDD. "Such an information and communications revolution will also bring about a revolution in market and social structure."

Convergence was driving telecommunication operators to look for substantial capital requirements to foster growth of telecommunication networks. "By the year 2000 alone, over USD 1 trillion in new capital will be necessary in order for countries and companies to achieve their telecommunication goals," said Michael McKeever, Managing Director of Lehman Brothers.

The Technology Summit focused on the development, standardization and implementation of new technologies, which were rapidly breaking down barriers between the formerly separate fields of telecommunications, information technology, and audiovisual entertainment.

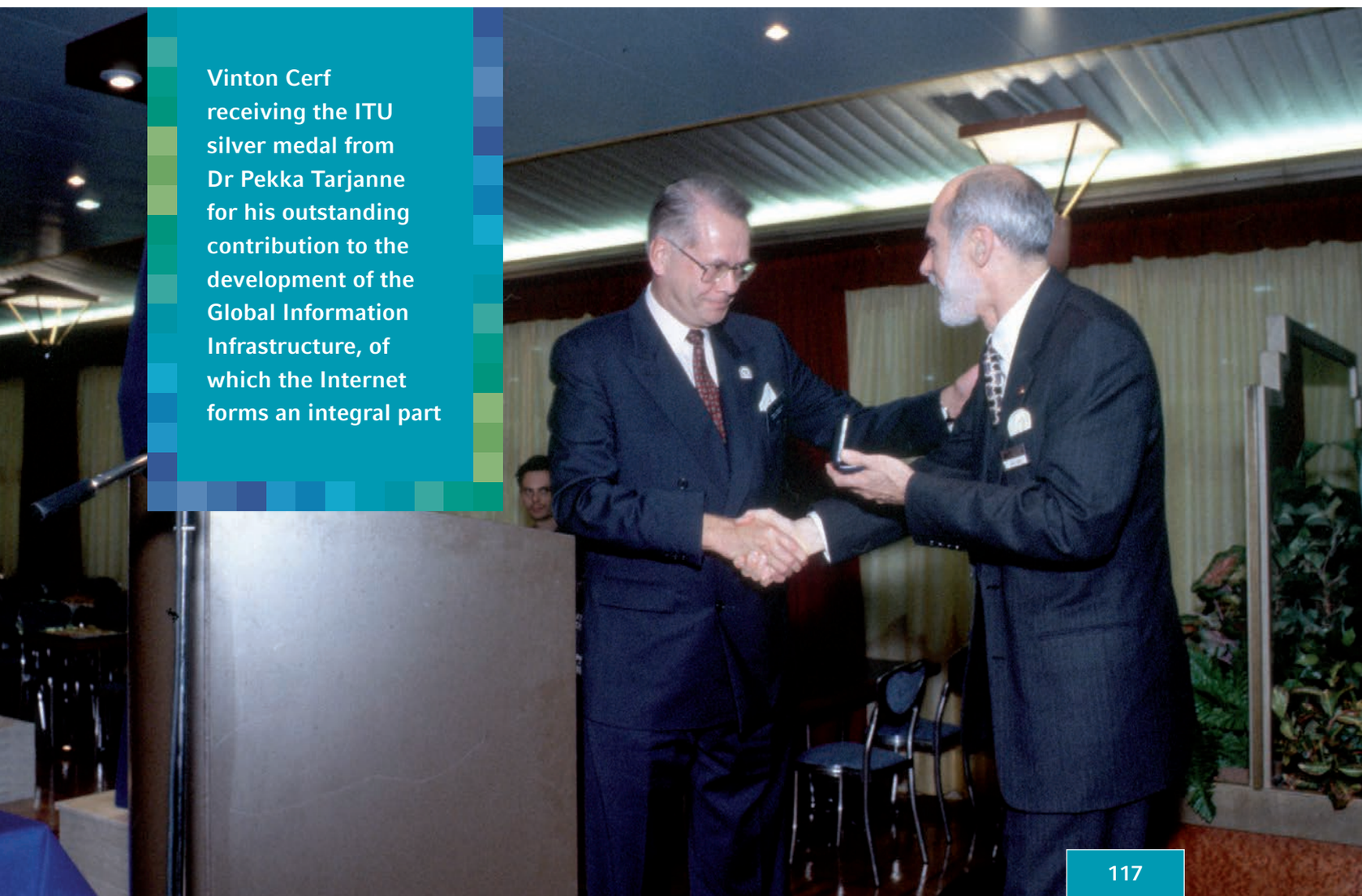
"Together with the telephone, the PC is changing the way we communicate in business and home environments," said Intel's Corporate Public Relations Program Manager, Ursula Herrick. "It's essential that the computer and telecommunication industries get together to develop new products." ■

"Father of the Internet" awarded ITU silver medal

The special Internet session took place over the weekend of 7 to 8 October 1995 and focused on the rapid developments taking place on the Internet and in the field of online services. The session discussed the role of the Internet in the overall communication infrastructure, as well as the challenges and problems inherent in this new means of information exchange.

The seminar featured a number of key speakers including Vinton Cerf (often referred to as the "father of the Internet"), Jim Clark, founder of Netscape Corporation, Christian Huitema, Research Director at INRIA, and Tony Rutkowski, Executive Director of the Internet Society. Mr Cerf was awarded a special ITU silver medal by Dr Pekka Tarjanne for his outstanding contribution to the development of the Global Information Infrastructure, of which the Internet forms an integral part.

Senior representatives from major online service providers such as CompuServe, America Online, Microsoft Network, MCI and AT&T also took part in the seminar. A half-day session was dedicated to emerging Internet applications and featured presentations from Sun Microsystems, Silicon Graphics, VocalTec, First Virtual, Digicash, and Apple. ■



Vinton Cerf receiving the ITU silver medal from Dr Pekka Tarjanne for his outstanding contribution to the development of the Global Information Infrastructure, of which the Internet forms an integral part

Innovations of TELECOM 95

In the context of distance learning, the addition of interactivity to broadcast services proved to be of considerable benefit, particularly to developing countries, where conventional methods of education were increasingly unable to respond to the growing demand for learning. Interactivity superseded the basic limitations of the broadcasting systems of the time and was fundamental to the educational process.

One of the important partnerships to emerge from the 1995 edition of TELECOM was the announcement that the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and ITU would be launching a pilot project to explore the use of the emerging technology of interactive broadcasting for distance learning.

This pilot project would result in the installation of a broadcast-based interactive distance-learning system in one or more developing countries. The aim would be to satisfy a critical need for in-service teacher education. Initial support had been obtained from the United States Department of State, AT&T (South Africa), and Hewlett Packard.

"We wholeheartedly acknowledge their kind contribution and interest in this project for the benefit of telecommunication development," said Ahmed Laouyane, Director of ITU's Telecommunication Development Bureau.

Other innovations at TELECOM 95 included the Programme for Development and the newly industrializing countries (NIC) Pilot Project. The Programme for Development provided invitations to 170 engineers and human resource specialists from 85 developing countries to come to Geneva on fellowships in order to visit the Exhibition, participate in the Forum, and concentrate on issues of immediate importance to their specific countries via a special three-day workshop.

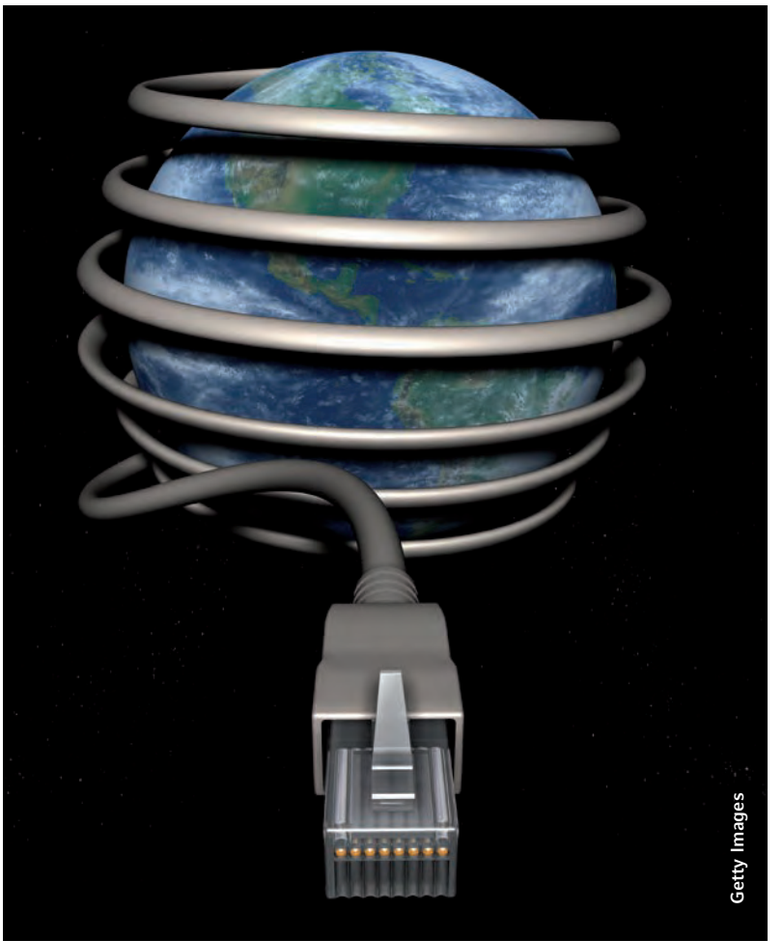
The NIC Pilot Project provided exhibition space free of charge for 13 companies from newly industrializing countries. The companies were selected because of their success in their home markets, and their innovative products. The aim of the project was to provide exposure to worldwide markets, to the benefit of both the companies themselves and those interested in viewing the latest technological developments.

The biggest change at TELECOM 95 was the array of software companies that exhibited for the first time at what had traditionally been a telecommunications industry event. The programme reflected this and marked a new direction for TELECOM for the years ahead. ■

TELECOM 95 in figures	
Exhibitors' representatives	35 000
Visitors	
who purchased a ticket	127 711
who were invited by exhibitors	19 551
VIPs	692
Forum	
Speakers	662
Forum participants, who also took the opportunity to visit the Exhibition	3 912
Media representatives	2 143
Total participants	189 671 (not including children)

Source: ITU Press release, 11 October 1995.

TELECOM 95 in photos



TELECOM + INTERACTIVE >1999

The Internet goes mobile

AFP

The Internet goes mobile

The 8th World Telecommunication Exhibition and Forum took place in Geneva from 10 to 17 October 1999, and attracted more than 175 000 participants and over 1100 exhibitors. Dubbed Telecom 99 + Interactive 99, the event marked one of the most important trends in the development of information and communication technologies (ICT) — the convergence of the Internet with mobile phone and wireless technology. This convergence would have a huge impact on daily life.

A number of themes dominated the event. On the one hand was the promise of a better-connected world in the new millennium. On the other were the shadows of an information gap threatening that promise. Much of the focus was on wireless technology and the Internet. In particular, wireless access to the Internet was at the heart of business strategies of most telecommunication and information technology companies.

Keynote speakers such as Bill Gates, Chairman and Chief Executive Officer (CEO) of Microsoft, and Kurt Hellström, President of Ericsson, predicted the future — which has now become a reality.

"[In the future] people will not have to think about moving their information around," said Mr Gates. "Any files or favourites or messages that they are interested in should just immediately show up wherever they are, whether it is the television that will be connected to the Internet, their mobile phone, their computer in their car, or their PC in all its various forms. In order to make this happen, we are completely dependent on forming strong partnerships with telecommunication companies."

At Telecom 99 + Interactive 99, Mr Gates unveiled a prototype Microsoft smartphone based on Windows CE, with Outlook and an Internet browser built in. "We have made a bet that these things will really explode," he said. "We have taken our software R&D budget and really aimed at these integration scenarios, integrating television, mobile phone and PC, and letting people get information in a way that they do not even have to think about where it is located."

In 1995 there had been 18 million digital cellular subscribers worldwide. Just four years later, by the time of Telecom 99 + Interactive 99, there were more than 300 million digital cellular subscribers around the world.

"Affordable solutions that let you communicate, no matter where you are or what time it is — and without the restraints of physical connections — are increasingly available around the world," said Kurt Hellström, President of Ericsson.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The first step towards mobile Internet: WAP

Ericsson, as the founder of the wireless application protocol (WAP), launched the world's first commercial WAP terminal in June 1999. WAP was the first step towards mobile Internet and third-generation (3G) mobile technologies that led to the creation of a whole new set of services that we now take for granted, such as mobile banking, shopping, ticketing and entertainment.

A first, vital step in the migration to 3G for global system for mobile communications (GSM) and time division multiple access (TDMA) operators was the launch of general packet radio services (GPRS), which introduced packet data transmission to the network. A packet-switching core network gave users the feeling of being "always online, always connected".

WAP applications that Ericsson believed would take off are indeed now commonplace including e-mail, voice messaging, electronic commerce, banking services, city guides, ticketing, and restaurant reservations.

ITU's IMT-2000 global standard for 3G opened the way to innovative services and applications, anytime and anywhere, with seamless global roaming. Many stands at Telecom 99 + Interactive 99 showcased IMT-2000 prototypes, in particular videophones.

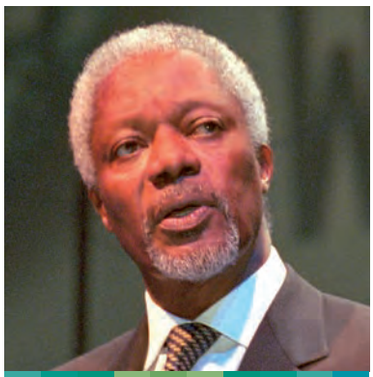
By 1999, visitors to Telecom 99 + Interactive 99 were already able to experience wireless 3G applications such as video conferencing, browsing the Internet and booking theatre tickets as well as listening to and downloading music from the web — all while being fully mobile. ■

At the time of Telecom 99 + Interactive 99, Ericsson was a world leader in the wireless application protocol or WAP. Strongly in evidence in exhibits at Telecom 99 + Interactive 99 were WAP-enabled terminals. There was also a focus on Internet security, and broadband capacity and applications.

Telecom 99 + Interactive 99 also differed from its predecessors in being fully online. Information on the event was available to all participants via more than 300 TELECOM information kiosks, which logged more than a million hits during the first five days of the event. The TELECOM part of ITU's website registered more than 10 million hits during the first two weeks of October — and much of the press coverage achieved for the event came from users of the web rather than journalists at the show. ■

Keynote speakers warn of dangers of technology

The event attracted leaders at the highest level, from government ministers to the CEOs of the front-ranked market players, along with the most respected industry analysts and commentators. The opening ceremony, which was sponsored by Ericsson, included keynote addresses from Kofi Annan, Secretary-General of the United Nations;



Kofi Annan, Secretary-General of the United Nations

Ruth Dreifuss, President of the Swiss Confederation

Yoshio Utsumi, Secretary-General of ITU

Ruth Dreifuss, President of the Swiss Confederation; Martine Brunschwig-Graf, President of the State Council of the Republic and Canton of Geneva; and Kurt Hellström, President of Ericsson.

Yoshio Utsumi, Secretary-General of ITU at the time of Telecom 99 + Interactive 99, said in his opening remarks that the TELECOM event being inaugurated by ITU was "a demonstration, at a global level, of the new technologies available today and tomorrow. Let us be inspired towards their further development. Let us share new wisdom in an effort to meet the goal we set 15 years ago, of bringing everyone within walking distance of a telephone. Let us commit ourselves, here at Telecom 99 + Interactive 99, to making it happen."

In his opening address, Kurt Hellström, President of Ericsson, warned that new technology can put tremendous power into the hands of governments and corporations but it must not be abused. "Unwarranted restrictions must be eliminated," said Mr Hellström. "Everyone must have access to the information that is now so readily available."

Other keynote speakers agreed that the diffusion of technology and the right to communication were vital to the development needs of the world as a whole.

"Apart from achieving technical improvements, therefore, the work done in the next few years must solve various problems so that the benefits derived from the immense progress made are more evenly distributed, among all social classes and among all countries," said Ruth Dreifuss, President of the Swiss Confederation. "Let us make sure that the slogans do not lie, so that global communication has no boundaries and is a reality for all continents."

Martine Brunschwig-Graf, President of the State Council of the Republic and Canton of Geneva

Kurt Hellström, President of Ericsson

Martine Brunschwig Graf, President of the State Council of the Republic and Canton of Geneva, agreed: "In terms of the relevant skills and know-how, the world must not be divided between haves and have-nots."

Kofi Annan, United Nations Secretary-General, took up this theme eloquently as the highest representative of the United Nations family. For Mr Annan, access was crucial. "The capacity to receive, download and share information through electronic networks, the freedom to communicate freely across national boundaries — these must become realities for all people," he said. The UN Secretary-General reminded delegates that a quarter of all countries had not yet achieved even a basic level of access to telecommunications — a teledensity of 1, or 1 telephone for every 100 people. Half the world's people had never even made or received a telephone call. "My fear is that we are adding a new divide to the already well-entrenched one between rich and poor: a digital divide between the information-rich and the information-poor," said Mr Annan. "Five out of six billion live in developing countries. For many of them, the great scientific and technical achievements of our era might as well be taking place on another planet."

That was not to disparage the value and benefits of the new technology if delivered globally.

"With their power to create new opportunities, telecommunications could be a tremendous force for integrating people and nations into the global economy — the only real hope we have of overcoming poverty," said Mr Annan. ■

The Forum

This view was shared by many of the 4000 people who took part in the Forum programme, which encompassed a total of five summits and several combined sessions, which opened with keynotes from Yoshio Utsumi, Secretary-General of ITU, John Roth, President and CEO of Nortel Networks and Erkki Liikanen, the European Commissioner for Information Technology.

The Connected Society Roundtable was chaired by Musalia Mudavadi, Minister for Information, Transport and Communications, Kenya, with keynotes being given by Lou Gerstner, Chairman of the Board and CEO of IBM and Jichuan Wu, the Minister for Information, Transport and Communications, China.

The Development Symposium brought 150 engineers and human resource specialists from 79 of the world's lowest income countries to Geneva on fellowships, in order to concentrate on issues of immediate importance to their specific countries, to participate in the Forum, and visit the Exhibition. The Development Symposium opening was chaired by Chen Chimutengwende, Minister of Information, Posts and Telecommunications of Zimbabwe, with keynotes from Yoshio Utsumi; Hamadoun I. Touré, Director of ITU's Telecommunication Development Bureau; Tony Reis, CEO of Swisscom; and John Chambers, President and CEO of Cisco Systems.

The Policy and Regulatory Summit Opening was chaired by Jean-Michel Hubert, President of the French regulatory agency, ART, with opening remarks from Roberto Blois, Deputy Secretary-General of ITU, and keynotes from Michael Armstrong, Chairman and CEO of AT&T; Serge Tchuruk, Chairman of Alcatel; and Jens Arnbak, Chairman of the Commission of the Netherlands' regulator, the Independent Post and Telecommunication Authority.

The Infrastructure Summit Opening was chaired by Jozef Cornu, the President and CEO of Alcatel, with

Bill Gates, Chairman and Chief Executive Officer (CEO) of Microsoft

keynotes from Carly Fiorina, President and CEO of Hewlett Packard, Tadashi Nishimoto, the President of KDD; and Werner Schmücking, a member of the board of Siemens.

Bill Gates, Seiko Noda, a Member of Japan's House of Representatives, and Larry Ellison, Chairman and CEO of Oracle delivered the keynotes at the Interactive Services and Applications Summit. ■

Humanitarian issues

ITU made sure that humanitarian issues were not forgotten. In a session on telecommunications for humanitarian assistance, the United Nations High Commissioner for Refugees (UNHCR), Sadako Ogata, called on the telecommunication industry to support the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.

Ms Ogata stressed the need for partnerships. "UNHCR is prepared to enter into standby arrangements with telecommunication companies that could be activated in case of large emergencies, and through which resources can be made available." She added that specialized staff should be deployed to provide support in refugee operations. ■

World TELECOM Internet Days

The event closed with a weekend dedicated to the Internet — the World TELECOM Internet Days. These two days were open to the general public and put a spotlight on the enormous importance of the Internet in the world. They featured debates, demonstrations and a chance for people to see the shape of the future.

Keynote speaker at these sessions, Vinton Cerf, Senior Vice-President, Internet Architecture and Technology at MCI WorldCom, who helped create the Internet back in 1969, stressed that the world should not underestimate the real scope of governance, which includes taxation, consumer protection, content control and intellectual property rights. "There are a thousand paths into the future, but which one we take is no more predictable than the discovery of the transistor in 1947, or the integrated circuit in 1958," said Mr Cerf. ■

Palexpo expands to accommodate Telecom 99 + Interactive 99

Telecom 99 + Interactive 99 was the biggest telecommunication event ever organized by ITU, quadrupling the number of exhibitors compared to the two previous shows in 1991 and 1995.

Allocating space for the 8th World TELECOM Exhibition in 1999 was not easy, given that so many companies had made it clear, as early as 1995 that they wanted to show the world their accomplishments and their novelties on the eve of the new millennium. TELECOM received too many requests for too little space. In 1998, however, with the help of the Swiss authorities, it was able to develop a project to use a whole new area in the gardens in front of the Palexpo Exhibition and Convention Centre.

The project, with its covered walkways, became an integral part of Palexpo for Telecom 99 + Interactive 99. Consisting of a press centre, four press conference rooms, a television studio, a restaurant and an exhibition hall, all air conditioned and fully equipped in terms of network connectivity, it provided all the amenities exhibitors and visitors to this global event had come to expect. For the Exhibition, the project meant adding an extra 2500 m^2 of space, and by the end of 1998 it was clear that in total the Exhibition would cover 100 400 m^2 of net floor space, including additional storeys on multilevel stands.

"Sometimes, watching the news on television — or indeed coping with it in my work as Secretary-General — it seems as if the future will be nothing but conflict, hunger, pollution and despair," commented Mr Annan. "But when I see what your industry has put on display here in Geneva, I see a quite different and much more encouraging picture. I look forward to exploring with you how we can unite these two visions — that is, how we can use the great promise of one to avoid the nightmare of the other." ■

Telecom 99 + Interactive 99 in figures

Exhibitors	**1146** from **47** countries
National pavilions	**26**
Exhibition space, net	**100 400 m²** including upper floors
Visitors	**128 858**
Exhibitors' representatives	**38 900**
VIPs	
Ministers	**104**
Ambassadors	**90**
National delegations	**652**
CEOs	**545**
Other VIPs	**212**
Total VIPs	**1 603** from **161** countries
Forum	
Speakers	**567** from **86** countries
Delegates	**3 297** from **137** countries
TELECOM Development Symposium sponsored delegates	**150** from **79** countries
Total Forum	**4014**
Accredited media, including photographers and camera crews	**2 508** from **63** countries and **1 446** publications
Total participants	**175 883**

Source: ITU Press release, 17 October 1999.

Telecom 99 + Interactive 99 in photos


MPEG-4 Video Phone
Demonstration
TOSHIBA
MPEG-4 Video Phone
Demonstration


TELECOM 99
Inter@ctive 99
PARK
PALEXPO
PLAN AND
EXHIBITORS LIST
HALL 8
OPEN AIR EXHIBITION
PRESS CENTRE
ACCREDITATION
WC


See you at ITU TELECOM WORLD 2003.

ITU TELECOM WORLD >2003

Helping the world communicate

Alamy

Helping the world communicate

Optimism for growth and market success

In the four years since ITU Telecom 99 + Interactive 99, the dot-com bubble had burst but ITU Telecom World 2003, which took place in Geneva from 12 to 18 October, reflected growing optimism for the market after a difficult period. A total of 911 exhibitors, 375 industry chief executive officers and 148 government ministers and regulators were present*, showing the importance of the event at a time of recovery and renewed expansion in the information and communication technology (ICT) industry.

In his opening address, ITU Secretary-General Yoshio Utsumi was bullish about the positive growth despite the downturn in market conditions since the previous TELECOM event.

Noting that Africa in particular had witnessed tremendous growth in mobile communications, Mr Utsumi urged the industry to target the underserved. "In Morocco, Cameroon and Uganda, mobile phones have a density that is five times more than fixed-line telephones but these figures are woefully inadequate as there are still more than one million villages in the world without any form of connectivity," observed Mr Utsumi. "You do not have to create new demand in the world — it is there, waiting for you in the developing world. Three out of four new telephone users connected each year live in the developing world."

"In the last four years, we have added 1.5 billion lines to the 1 billion we had connected in all previous years," said Mr Utsumi. "This is a remarkable achievement, especially since more than 75 per cent of the capacity was installed in the developing world."

The Secretary-General called upon the captains of the industry, policy-makers, and regulators to have a common vision to reach those without access to services. "The industry must look into the future and envisage services which are affordable in local terms, and policy-makers must evolve rules that facilitate growth and expansion," stressed Mr Utsumi.

ITU Telecom World 2003 was privileged to have royalty attending for the first time in the event's history, with His Majesty King Juan Carlos I of Spain present at the opening ceremony. The King of Spain urged participants to make access to ICT universal.

* *Source: ITU Press release, 18 October 2003.*

"The information society must be founded on the principles of inclusion and non-discrimination, and on the fostering of equality between men and women and the protection of children and young people, these being vulnerable segments of our societies who are particularly open to the influence of new technologies," said King Juan Carlos.

His Majesty King Juan Carlos I

The King emphasized that the ICT industry must exploit its potential to assist sustainable development and the attainment of the United Nations Millennium Development Goals. Only through access to the benefits of ICT can society assist in the international effort to reduce poverty.

"As we stroll around this Exhibition and admire the latest miracles of science,

His Majesty King Juan Carlos I of Spain (centre) arriving for the opening ceremony of ITU Telecom World 2003

we must not for one moment forget that for many millions of human beings the true miracle, experienced daily, is the ability merely to survive in the midst of subhuman conditions," stated King Juan Carlos. "It is necessary that we commit ourselves to ensuring that technological progress is geared towards the well-being of the individual." ■

Pascal Couchepin, President of the Swiss Confederation

Laurent Moutinot, President of the State Council of the Republic and Canton of Geneva

Bridging the digital divide

The President of the Swiss Confederation, Pascal Couchepin, took up the baton recalling in his speech at the opening ceremony that more than half of humankind still did not have access to a telephone.

President Couchepin commented that the industry could, with renewed optimism, face up to the fact that the bubble had burst. "Unlike other waves of speculation in the past, even after the financial bubble has burst the technology still remains," said Mr Couchepin. "We must keep a cool head to overcome this crisis and we must rekindle demand for investment."

"The digital divide is a blemish on this new millennium which we want to build together," said Mr Couchepin. "The international community must unite to ensure that information is a public commodity. Access to information for everyone is at the very heart of development."

Laurent Moutinot, President of the State Council of the Republic and Canton of Geneva, remarked in his inaugural speech that even in these troubled times, the Geneva authorities were in no doubt about the success of ITU Telecom World 2003. "Those who talk about an edition that falls short of its predecessors are mistaken," said Mr Moutinot. "Through expanded services, a more attentive welcome to exhibitors and visitors and new facilities, we wanted to fully play our part as host in a difficult economic climate."

ITU's key role as broker and catalyst was underscored at the press conference

which followed the opening ceremony, where Mr Utsumi again urged companies to explore opportunities in the world's low-income countries.

"The information and communication technology sector is in soul-searching mode, trying to understand what went wrong but now is the time to move forward and identify which nations and technologies, such as broadband and Wi-Fi, may fuel growth that will, hopefully, spill over into other sectors," said Mr Utsumi.

Hamadoun I. Touré, Director of ITU's Telecommunication Development Bureau (BDT), pointed to the explosion of prepaid services as confirmation that low-income users were willing to spend money on ICT. "Lessons from the mobile miracle can now be applied to other ICT, like the Internet, and demand for ICT services will fuel the sector's recovery," commented Mr Touré, highlighting wireless local area networks as a technology that will help bridge the digital divide. ■

Yoshio Utsumi, Secretary-General of ITU

Carly Fiorina, Chairman and CEO of Hewlett-Packard

Forum highlights

The Forum included six days of presentations and debate on critical industry issues ranging from broadband and mobility, to new business models and new sources of revenue. There was in many of the sessions, passionate discussion on how new technologies can best be harnessed to bring connectivity to more than 1 million villages in the world that are yet to connect to the information society.

The Forum opened with key industry leaders being brought together under the event theme of "Helping the World Communicate".

Carly Fiorina, Chairman and CEO of Hewlett-Packard, called for better industry collaboration and leadership, and argued that success in one nation should ripple across to other countries and ultimately boost access and trigger growth that could spill over into other areas such as health and public participation in government.

"The vast potential for this industry to bring about social and economic progress — which, frankly, has been mostly the subject of breathless hype over the last decade — is within our reach," said Ms Fiorina.

Conny Kullman, CEO of Intelsat, outlined how technological advances in satellites were now being used to complement land technologies such as optical fibre, and why broadband, and the convergence of data, voice and video remained areas for future growth.

According to Erkki Liikanen, member of the European Commission, the key priorities for the European Union were enhancing competition and stimulating investment, pushing for the exploitation of ICT, and investment in research and development. Like his fellow panellists, he stressed the importance of leadership in harnessing the potential of ICT.

At the industry round table in the session "Reconnect", Sean Maloney, Executive Vice President of Intel, described how a difficult market caused by over capacity, high wireless spectrum prices, sluggish demand for data services and fierce competition had driven down profit margins and forced some smaller players out of business.

But he remained upbeat. "I have great optimism, and the growth engine will be wireless broadband," declared Mr Maloney. "Wi-Fi is growing at a rate previously never known on its low single dollar manufacturing cost now that standards have been hammered out. This is good news and will bring a wave of innovation in new markets."

While other participants shared this optimism and noted the huge growth in mobile subscriptions, the challenges of matching consumer needs and achieving interoperability between standards and services needed to be tackled.

"There is a crying need on the part of the consumer for simplicity, reliability and ease of use," observed Nikesh Arora, a member of the board of T-Mobile. "There has been a lot of discussion about technology and features, but little talk about what the consumer really wants."

Keiji Tachikawa, CEO of NTT DoCoMo spoke of the overwhelming need for interoperability between technologies and products. "We need to involve all parties concerned to standardize technologies," stressed Mr Tachikawa.

In terms of access to services in developing markets, Mr Maloney said that wireless broadband could help connect low-income countries. Daknet, for example, was already supplying mobile voice over Internet protocol calls and data services to a village in India via a roving Wi-Fi bus.

Sizwe Nxasana, CEO of Telkom South Africa, highlighted the recent achievement of the SAT-3/WASC/SAFE undersea cable for connecting Africa to Europe and Asia. ■

Delighting the customer

Another lively industry forum session focused on satisfying customer needs. It is no longer enough to simply meet customer expectations, said Arun Sarin, CEO of Vodafone United Kingdom, but companies must now exceed them. "We have raised the bar on service," said Sarin. "We are investing

Arun Sarin, CEO of Vodafone United Kingdom

several billion pounds a year in 3G. But we will not open the service until we can outperform 2G. Unless we can delight our customers there is little incentive to migrate to 3G."

Mr Sarin underscored the need to finely segment the customer base, to evaluate and tailor packages, be they for students, small businesses or government officials communicating from laptops, palm pilots or mobile phones. "What is it they need to use our infrastructure, channels, and at exactly what price point?" he asked.

John Chambers, CEO of Cisco Systems

John Chambers, CEO of Cisco Systems, stressed that large corporations needed to anticipate changes well before they arrived. “Listening to customers and getting transitions right will decide which companies are around in ten years,” according to Mr Chambers. “People used to buy equipment based on feeds and speeds, but we increasingly need to be service — not just parts — oriented.”

Security and privacy were high in the minds of customers too, and had to be integrated into customer offerings, according to Masanobu Suzuki, President and CEO of NTT Communications. Speaking of prevention of hacking, and the protection of networks from malicious attacks, Mr Suzuki stressed that ways must be found to deal with these challenges in order to reassure customers.

Panellists closed the session emphasizing the need to quickly shift to more responsive and value-generating business models. "We need to create an environment that adjusts to change," said Cisco's Mr Chambers. "That will determine tomorrow's winners and losers."

A session on investment strategies revealed the reasons for the remarkable growth of broadband penetration in the Korean market. It took the Republic of Korea only four years to implement broadband in 70 per cent of the country's households, increasing the number of broadband Internet subscribers from a mere 10 000 in 1998, to more than 10 million by 2002.

Dae-Je Chin, Minister of Information and Communication for the Republic of Korea, outlined how the Korean Government had played a key role in the country's technological breakthrough by investing heavily in its telecommunication infrastructure, training and local human capital, implementing regulatory policy to encourage competition, and allowing private companies to engage in healthy competition. With aggressive marketing by industry businesses and receptive technology-hungry consumers, the increase in general Internet usage had exploded.

In considering lessons to be learned from the Korean experience, Jay Naidoo, Chairman of the Development Bank of Southern Africa, said that the challenge was for governments to implement a policy programme that ensures that an economic and corporate governance regime is put into place. "Guiding principles for a sustainable model for a developing market are profit, transparency, accountability, innovation for people, courage and leadership," said Mr Naidoo.

For Patrick Gallagher, CEO of FLAG Telecom, there were two main criteria conducive to creating the ideal environment for success. A good combination of government and business cooperation was a positive start to rebuilding confidence for investors. And the potential for partnerships — especially local — was essential for any private business looking to invest in developing countries.

The session concluded with the agreement that there was no single blueprint for market success. A strong clear vision of where a continent or a country was heading was the first step towards establishing a partnership. But as panellists said, there was a need for stakeholders to ensure that whatever they did was sustainable — to ensure that the Republic of Korea's case study was not the exception but the rule. ■

Exhibition brings in many show debuts

One in two exhibitors were showcasing their products at Telecom World for the first time, reflecting the crucial role of new technologies and emerging markets in the evolution of the telecommunication industry.

Innovative wireless Internet applications and mobile devices with in-built digital and video cameras dominated the products on show at ITU Telecom World 2003. Exhibitors

showcased products and services on fixed and wireless broadband (fibre, ADSL, WLAN), next-generation convergence networks, voice over Internet protocol (including voice over ADSL), mobile data solutions, and high-speed 2.5 and 3G wireless systems. In contrast with the 1999 event, there was less focus on technology for technology's sake, and much more focus on technology in action in real-life business environments — business communications, and solutions targeting improved productivity and new revenue streams.

Samsung showed off its first 3G mobile phone, comparable in size to second-generation phones. Orange's stand featured mobile message service or photo messaging. NTT Group presented live videophone conversations from Geneva to Tokyo. And the Indian pavilion allowed passersby to talk to rural villagers in India over webcam using corDECT technology.

Exhibitors also used the show as a platform to announce more than 150 new products and contracts. ■

Some of the major contracts announced at ITU Telecom World 2003

- BT's contract valued at EUR 100 million with "3" in Ireland to build and operate its 3G radio access network.
- ACE*COMM's multimillion dollar contract with Giza Systems to provide a country-wide data collection solution for Telecom Egypt.
- Nortel Networks' supply agreement estimated at USD 30 million over three years with Israel's Pelephone, to expand its 3G Wireless Data Network.
- Quarry Technologies providing carrier-class security service routers to Dacom Corporation, one of the Republic of Korea's service providers.
- The European Commission's investment of EUR 3.8 billion over the next four years in key areas, including microelectronics, nanotechnology and e-health.
- FLAG Telecom's USD 207 million amalgamation deal with Reliance Gateway Net Private Ltd.

New exhibitors included ComArch, a Polish billing and network management software maker that was recognized as a Technology Pioneer by the Davos World Economic Forum; US company, Cherokee International, which won the Frost & Sullivan Market Engineering Award for Customer Service Innovation; and Ireland's Am-Beo, a real-time rating and revenue settlement systems maker which Tornado Insider ranked as a Top 10 European technology company, and which also won the World Billing Magazine's award for the best new product.

"We are very pleased to see a major influx of companies attending a Telecom World event for the first time," said Mr Utsumi. "This goes to show just how much the telecommunication industry is reshaping itself, with a new wave of smaller, innovative companies beginning to emerge." ■

Innovations at ITU Telecom World 2003

One of the innovations of ITU Telecom World 2003 was the introduction of a Youth Forum, with more than 240 young people attending. During their week-long stay, youth fellows visited the Exhibition, met key ICT industry and political leaders and attended keynote presentations featuring ministers and CEOs, as well as young professionals.

The three main sessions of the Youth Forum dealt with ICT as an enabler of economic and social development, with policy and regulatory aspects of ICT, as well as strategies for investment and financing.

A second innovation was to introduce special showcases to ITU Telecom World. Bill Gates, Chairman and CEO of Microsoft, drew a large crowd for his showcase presentation, which stimulated discussion about evolving operating systems for handsets. Mr Gates unveiled Microsoft's plans to work with

Vodafone to help develop mobile web services standards to create new business opportunities spanning the computing and mobile worlds.

Ian Maxwell, Group Strategic Director at Vodafone, joined Mr Gates on the podium to demonstrate an application for a rescue service that made it possible for mobile and fixed devices to share the same data and applications.

"Web services are perfect for the mobile environment," said Mr Gates. "It is not just about the server, it extends down into the mobile device. Web services are a central element in how telecommunications will use software." ■

Bill Gates, Chairman and CEO of Microsoft

Youth Forum at ITU Telecom World 2003

ITU Telecom World 2003 in photos

ITU TELECOM WORLD >2006

Living the digital world

For the first time in the history of the event, ITU Telecom World was held outside Geneva. The venue was Hong Kong, the Special Administrative Region (SAR) of China

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Living the digital world

For the first time in the history of the event, ITU Telecom World was held outside Geneva, and took place from 4 to 8 December 2006. The venue was Hong Kong, the Special Administrative Region (SAR) of China, and the theme was "Living the Digital World".

Gone were the days when our everyday lives revolved simply around our home town or village, where friends lived down the road and the workplace was just around the corner. Thanks to advances in technology, we have entered a world where we can work for a company based in London yet live in Spain, where we can acquire whole new personae and sets of friends online overnight, where everyone can be a film star, release a hit single or be a comedian reaching out to a global audience, and much more. And this was only the beginning of living in the digital world. ■

China hosts ITU Telecom World 2006

Around 62 000 participants attended the event, which attracted key members of the Chinese government including Wu Bangguo, Chairman of the Standing Committee of the National People´s Congress, and Xudong Wang, China's Minister of Industry and Information.

The industry's top names were in evidence throughout the Exhibition and Forum, including Alcatel-Lucent Technologies, AT&T, China Mobile, China Netcom, China Telecommunications, China Unicom, Cisco Systems, Ericsson, Fujitsu, Hitachi, HP, Huawei, IBM, Intel, LG Electronics, Microsoft, Motorola, NEC, Nortel, OKI, Orange, Qualcomm, Samsung, Siemens, SK telecom, Toshiba, Verizon, and ZTE.

At the opening ceremony, Mr Wu said that by choosing Hong Kong as the host city for Telecom World 2006, ITU had given China's information and communication technology (ICT) industry a rare opportunity to learn from its foreign peers. He also stated that China was prepared to further open up its ICT market for foreign investors.

Wu Bangguo, Chairman of the Standing Committee of the National People´s Congress

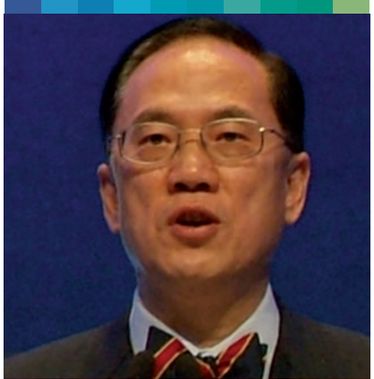
"China will persist in the basic State policy of opening up and continuing to enhance ICT cooperation with all other countries on the basis of equality and mutual benefit," said Mr Wu. "We sincerely welcome investment companies of all countries and regions in the world to jointly explore China's market."

Mr Wu said that between the year 2000 and the end of October 2006, the number of fixed-line subscribers in China had soared from 145 million to 371 million: an annual growth rate of 21 per cent. The number of mobile users for the same period went from 85 million to 449 million, growing by 40 per cent annually.

China was now the biggest market in the world for both fixed-line and mobile phones added ITU Secretary-General Yoshio Utsumi in his address at the opening ceremony. "Not only does China represent a huge market, but it is also increasingly the source of new trends in the industry and of innovation," commented Mr Utsumi.

Yoshio Utsumi, Secretary-General of ITU

Xudong Wang, China's Minister of Industry and Information



Donald Tsang, Chief Executive of the Hong Kong SAR

In his speech at the Forum Opening session, China's Minister of Industry and Information, Xudong Wang, also referred to the spectacular growth of the country's ICT industry and said that China was expected to have 1 billion telephone users and 200 million Internet users by 2010.

Likening ITU Telecom World 2006 to the 2008 Olympic Games that were due to take place in Beijing, Donald Tsang, Chief Executive of the Hong Kong SAR, said Hong Kong was thrilled to be hosting the Olympics of the telecommunication industry, particularly as it was the first Telecom World to be held outside Geneva.

Hong Kong's fully liberalized ICT market had generated a lot of competition and an ITU survey showed that in 2006 it offered the world's most affordable Internet and mobile phone services. "This has resulted in Hong Kong becoming a forerunner in the adoption of triple-play services: a single broadband network providing telephony, television and Internet access," Mr Tsang told participants. He said that

ICT had boosted productivity, generated economic growth and improved the quality of life for Hong Kong people. "But we are not complacent and in the years ahead we will focus on digital inclusion programmes among small- and medium-sized enterprises, as well as citizens with special needs."

Viviane Reding, the European Commissioner responsible for the Information Society and Media, commented: "In Hong Kong, we see probably more clearly than anywhere in the world how ICT can help to overcome cultural, geographic and even political borders."

The importance of using ICT for social and economic development was emphasized by other speakers. Mr Utsumi urged participants to take up the challenge of not only ensuring the growth of a vibrant and exciting ICT sector, but also of working together to extend its benefits to the millions of people that were being left behind. He told participants that with the talent, energy and

Wu Bangguo (centre), Chairman of the Standing Committee of the National People's Congress listens to a briefing during a tour of ITU Telecom World 2006

AFP

commitment they represented, "we can together launch a new era of shared progress, harnessing the power of ICT for people all over the world". ■

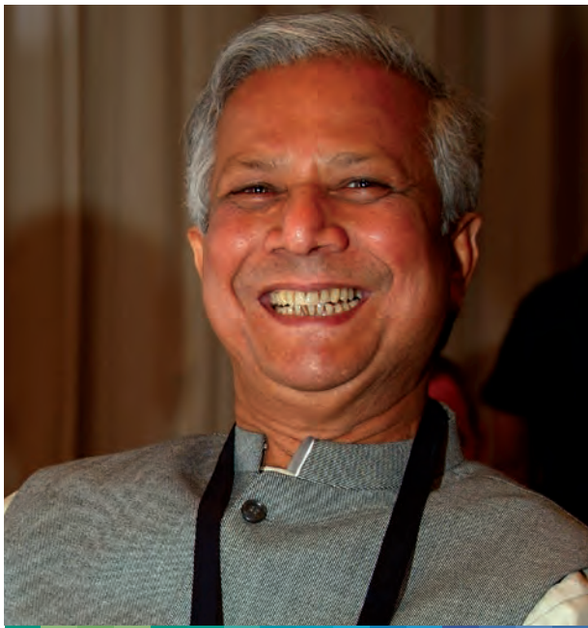
A new partnership to counter poverty

Nobel Peace Prize Laureate and 2006 winner of the ITU World Information Society Award Professor Muhammad Yunus of Bangladesh announced a new partnership with ITU that would use ICT and microcredit financing to fight poverty. Professor Yunus said the partnership would establish an online global ICT Empowerment Network that would combine ICT with microcredit to help the poor reach sustainable incomes. Connect the World partner, Cisco Systems, announced a USD 1 million contribution and QUALCOMM and consortium Enclusion pledged support to this new partnership.

One of the first projects announced within the ICT Empowerment Network was to bring the village phone concept to rural communities in Indonesia during 2007. Qualcomm and the Grameen Technology Centre would work on a pilot project in conjunction with CDMA (code division multiple access) operators.

"ICT offer an opportunity unprecedented in all of human history to end poverty," said Professor Yunus. "I am convinced that the best way to change a society is to give dignity and self-reliance to the poor women in that society. Both ICT and microcredit do that very effectively as they mutually reinforce each other when it comes to addressing the issue of poverty."

Professor Yunus, founder of Grameen Bank, was a pioneer in the use of microfinance to assist poor people, especially women. He gave the example of when Grameen first launched its village phones scheme in Bangladesh with women selling telephone services in villages. Following the launch of the mobile phone company, Grameen Phone, sceptics declared it a crazy idea to give cell phones to illiterate poor women in villages who had never even seen a conventional telephone before. Though, everyone in Bangladesh admired the Grameen telephone ladies.



Professor Muhammad Yunus of Bangladesh, Nobel Peace Prize Laureate and 2006 winner of the ITU World Information Society Award

He expressed confidence that the current business model could be used and that telephone ladies could also offer Internet services. "Now imagine empowering poor women with access to microcredit financing, mobile phones and the Internet in countries all around the world. We would unleash a burst of creative and entrepreneurial energy that would change millions of lives," said Professor Yunus.

He stressed, however, that the potential of ICT to help eradicate poverty would remain unrealized unless the poor were enabled to tap into the benefits of market forces. All projects under the ICT Empowerment Network had to be sustainable and should not be seen as charity, Professor Yunus added. As well as sound business models, the skills to use technology are essential to ensure sustainability. Cisco Systems was partnering with the ICT Empowerment Network through Internet training centres to provide students with loans to pursue studies in ICT as well as to assist with entrepreneurial mentoring.

Cisco and ITU had launched the Internet Training Centre Initiative for Developing Countries in 2002, and by 2006 there were 66 such ITU-sponsored centres in 56 countries, including in 20 least-developed countries.

From left to right: Art Reilly of Cisco Systems; Houlin Zhao, ITU Deputy Secretary-General Elect; John Chambers, President and CEO of Cisco Systems; Dr Hamadoun I. Touré, ITU Secretary-General Elect; and Jeff Spagnola of Cisco Systems

At ITU Telecom World 2006 Cisco announced that it would provide a further USD 1 million of funding in order to give people access to ICT business training. The ITU-Cisco Internet Training Centres were using a comprehensive curriculum created by the Cisco Networking Academy Program serving 500 000 students a year around the world.

"ITU continues to be a leader in ICT development programmes and partnerships worldwide that help narrow the digital divide," said Tae Yoo, Cisco's Vice-President of Corporate Affairs. "This opportunity for Cisco to provide a replicable and sustainable platform for people to enter the ICT world through education and entrepreneurial pursuits is a great example of the impact that effective public and private partnerships can have in the developing world." ■

Forum highlights

Leading industry CEOs, government regulators and telecommunication ministers and many more from across the industry took a closer look at our digital world during the Forum discussions. Key topics and themes explored in the Forum ranged from mobile, wireless, broadband, convergence, next-generation networks, multiple play, on-demand services, user-generated content, to personalized services.

One of the key topics raised in the Forum sessions was standards and regulation. Viviane Reding, European Union Commissioner responsible for Information Society and Media pointed out that today it was becoming more than ever difficult for governments to choose a particular standard among several competitors. This is because of the complexity of technologies and markets, and more competition at national and international levels. "Except where we have a real chance of a global accord on a single standard, we have instead to move towards competition between several open standards," she said.

Viviane Reding, European Union Commissioner responsible for Information Society and Media

"We know that the choice of the wrong standard can lock our economies into long periods of economic underperformance, while market-led solutions have consistently provided a much better environment for technology selection."

On regulation, CEOs at a special industry round table were keen to emphasize the need for governments not to stifle innovation.

"We have a few bottlenecks and one is regulation," said Reza Jafari, moderator of the round-table session and Chairman of the ITU Telecom World 2006 Forum Advisory Committee.

"Regulation has to be as minimal as possible," added Sanjiv Ahuja, CEO of Orange, United Kingdom. "Our request to the regulators is to 'keep a light touch' and let us continue to do what we do best, and that is serve our customers."

It was also important for regulators to keep pace with technological change. Patricia Russo, Chairman and CEO of Alcatel-Lucent, said that rules governing the United States market for example were last updated in 1996, but "our world no longer looks anything like it did in 1996". ■

How to bridge the digital divide

Another topic debated at the CEO round table was the issue of how to bridge the digital divide. Pricing was important said Carl-Henric Svanberg, President and CEO of Ericsson, and one way of bridging the divide was to make technology cheaper. But for Edward Zander, Chairman and CEO of Motorola, it was not just about low-priced devices. "Inexpensive mobile phones, for example, are just a starting point," Mr Zander commented, adding that customers in developing markets "don't just want cheap devices. They want iconic devices too." He pointed out that developing economies had forced new directions to be taken in handset design, such as screens that can be read in bright sunlight, and voice-activated commands for illiterate users.

Mobile technology was seen as an effective way to bridge the digital divide by providing Internet access in countries where fixed infrastructure was not widespread. A single access device, based on a common platform, could reduce costs in emerging markets, said Ki-Tae Lee, President of Samsung Electronics Telecommunications Network Business, who predicted that mobile Wi-MAX might be the first step towards a common Internet protocol platform.

The issue of cost of technology resurfaced in a Forum session on "Building digital communities". What steps can we take to ensure that digital communities are truly open to all? How can barriers such as language or wealth be overcome in building the digital community of the future? Indonesia's Minister for Communication and Information Technology, Sofyan A. Djalil, said that global equipment manufacturers and software companies should adopt a different approach and lower their prices in developing economies — or the digital divide will never be closed. "It is not a sustainable information society if developing and least-developed economies keep being net consumers of costly telecommunication equipment or exorbitantly expensive application software," said Mr Djalil.

Patricia Russo, Chairman and CEO of Alcatel-Lucent

One man who had successfully addressed the issue of cost was Nicholas Negroponte, Chairman of the One Laptop Per Child association, a partner of ITU´s Connect the World initiative. Mr Negroponte had launched a project during the second phase of the World Summit on the Information Society in 2005 to get laptops costing just USD 100 into the hands of schoolchildren in developing economies.

At a Forum session at ITU Telecom World 2006, Mr Negroponte said that the first laptops were beginning to come off the production line in Shanghai and that during 2007 between three and five million were expected to be distributed to children in Argentina, Brazil, Libyan Arab Jamahiriya, Nigeria, Pakistan and Thailand. There were plans to increase the number of laptops to 150 million by 2008, and to reach children in more countries. "The moral purpose of the project is really to look at education as the tool for eliminating poverty or creating peace, and bringing opportunity to people in a different way," said Mr Negroponte.

Education is a tool for eliminating poverty or creating peace, and bringing opportunity to people in a different way. One Laptop Per Child should help achieve this mission

Flickr

"Whatever big problem you or your country has on its mind will be solved in part by education, in no part without education, and in some cases just with education."

Education was also a special focus at the ITU Telecom World 2006 Youth Forum, which attracted 250 young people who were able to interact and develop mentor relationships with government officials, industry executives, technology leaders, content providers and strategists. Walda Roseman, CEO of Compass Rose International, who chaired the Youth Forum, said that she was pleased to see that there were equal numbers of men and women taking part, from 130 countries which included Belize, Cuba, Gabon, Paraguay and Qatar for the very first time.

The Youth Forum closed with the adoption of a Declaration committed to:

- Education and ICT: The aim would be to establish ten ICT clubs in universities on all continents by January 2008, to increase awareness of and skills in ICT.
- Corporate social responsibility and ICT: Participants would seek to form a "Fair Trade" label specifically for ICT, with the aim of increasing incentives for companies to act in more socially responsible ways.
- Governments and ICT: Forum participants would launch, by January 2008, a biannual electronic publication for all ICT stakeholders, in particular governments. The publication "will be created and edited by youth and will provide a unique platform for our diverse views and ideas covering important issues such as regulation, entrepreneurship, infrastructure and accessibility, investment and regulation of content", according to the Declaration.

European Commissioner Viviane Reding praised the benefits of the Internet in content delivery, while encouraging the audience at the Youth Forum to help prevent piracy. "I know most of you believe that content must be free, but there are upcoming artists, designers and actors who also stand to lose a lot because of piracy," said Ms Reding. "That is why it is important to find a balance between the interests of content creators and consumers." ■

Walda Roseman, CEO of Compass Rose International

Back to the digital divide

At the closing of the Telecom Forum, the Secretary-General of the African Telecommunications Union (ATU), Akossi Akossi, returned to the topic of bridging the digital divide. At the end of 2005, Mr Akossi said that Africa had 14 per cent of the world's population but only 4 per cent of its telephone subscribers. Only 3 per cent of Internet users were

The Youth Forum at ITU Telecom World 2006 closed with the adoption of a Declaration committed to education and ICT...

in Africa and about 4 per cent of Africans were using the Internet, compared to the world average of 15 per cent. In 2006, the continent had only 0.16 per cent of Internet hosts, and there were about two computers for every hundred people — far below the world average of 13 per cent.

"We still have a lot to accomplish in the efforts to bridge the existing gaps, not only with the developed countries, but also between rural and urban areas," said Mr Akossi.

At the same time there was room for optimism, since the telecommunication market in Africa was already in the process of being transformed.

"The mobile telephone segment has, in particular, witnessed tremendous growth, and competition has certainly increased the breadth of value-added telecommunication services available to the people of Africa," noted the Secretary-General of ATU. ■

New pavilions at the Exhibition

At the closing ceremony for ITU Telecom World 2006, the Director of the ITU Telecommunication Development Bureau and ITU Secretary-General Elect, Hamadoun I. Touré, praised Hong Kong's successful handling of the event, which had achieved a record number of participants and exhibitors. In total, 41 200 m^2 of exhibition space was used by 695 exhibitors from 37 countries.

Alongside exhibits by individual manufacturers and service providers, ITU Telecom World 2006 had for the first time pavilions representing specific information and communication technologies.

The G-PON (gigabit passive optical network) Pavilion was organized by ITU in association with industry members including Applied Micro Circuits Corporation (AMCC), Cambridge Industries Group, Ericsson, FlexLight Networks, Fujitsu Network Communications, Hitachi, LS Cable, NEC, Terawave Communications and ZTE.

Visitors saw interoperability demonstrations of G-PON equipment by manufacturers. The first public demonstration of interoperability in PON systems, based on the ITU–T G.984 standard, also took place at the pavilion. Widespread support within the industry of ITU's technical standards for G-PON equipment was important to ensure interoperability — key to making the digital home a reality — at an affordable price for consumers.

The Internet Pavilion was organized and primarily sponsored by three non-profit organizations: the Internet Corporation for Assigned Names and Numbers (ICANN), the Internet Society (ISOC), and the Number Resource Organization (NRO), which coordinate many critical aspects of the Internet.

"It is an important opportunity for our community-based organizations to reach out to as broad a range of stakeholders as possible," said Lynn St Amour, President and CEO of the Internet Society.

The WiMAX Forum, an industry-led, non-profit corporation formed to promote and certify compatibility and interoperability of broadband wireless products also had a pavilion at ITU Telecom World 2006 to showcase the certified products of its 400 members. ■

New products on show

Governments and companies were as keen as ever to unveil new products at ITU Telecom World 2006 reflecting the theme of the event. China's Ministry of Agriculture and China Mobile Communications Corporation jointly announced an animal tracing system that combined two-dimensional barcode technology with a high-speed general packet radio service (GPRS) network.

Workers can use a mobile terminal to attach barcode tags to animals, enabling them to be traced instantly. Data are sent via the short message service (SMS) to and from the Ministry of Agriculture. This allows animal quarantine agencies to collect and analyse critical data related to possible outbreaks of animal disease, and the system can therefore assist in the prediction and warning of an emergency or in responding to it.

Companies unveiling new mobile phone technology at the 2006 exhibition included Samsung which showcased its high-speed uplink packet access (HSUPA) systems for mobile phones. With HSUPA networks, users were already able to upload and receive photographs, video clips and data files, and share content more easily with friends and family. Motorola announced the launch of its new entertainment device, MOTOROKR E6, equipped with all the functions needed for business use, such as e-mail and SMS, but also featuring entertainment capabilities such as RealPlayer, USB connectivity and a standard headphone jack.

NEC chose the occasion of the ITU Telecom World 2006 to unveil its latest version of PaPeRo (or Partner-type Personal Robot), a personal robot which can read your e-mail or change television channels. PaPeRo is a communication device with an Ethernet jack, USB ports and connectivity to third-generation (3G) mobile phone networks. It comes with speech and facial-recognition software, allowing it to recognize its owner and respond to voice commands to look up information from the Internet by command or automatically. ■

Making the right connections

Making the right connections, networking and getting business done were the bywords of the event. A number of high-level partnerships were formed and announced at Telecom World 2006. Two giants of industry, Microsoft and BT announced a deal to provide IPTV services in the United Kingdom; and a pan Asian mobile TV consortium was

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hatched between SK Telecom, Toshiba, Global Media Networks, and International Mobile Broadcasting to provide the first mobile television roaming service in Asia.

The newly merged Alcatel-Lucent Technologies chose Telecom World 2006 to unveil its new brand identity and mission, to an audience of peers, partners and customers. Global research specialists, Yankee Group and Analysys International launched a partnership to offer research that puts the China market into an international context. Meanwhile, Aperto Networks formed a WiSE partnership of 50 companies to drive Wi-MAX interoperability.

With so many deals being done and new opportunities announced, networking was clearly high on the agenda for participants. Underlining this was the fact that almost 10 400 networking e-mails had been sent by the end of the event, using ITU Telecom's online networking system. The feedback from this service was very positive; people were happy that ITU Telecom was helping them connect together both on-line and off-line at the VIP lounge. ■

Innovation

Innovation was the buzzword in the Digital Life Theatre, a futuristic presentation venue at ITU Telecom World 2006. Themes explored included mobile television, how to create a superior customer experience, digital networking, how the family of the future will communicate, how to optimize user experience and how to create, share and distribute content. Youth fellows were also able to share in the Digital Life Theatre experience, with presentations from their peers on areas such as ICT literacy or the "human network."

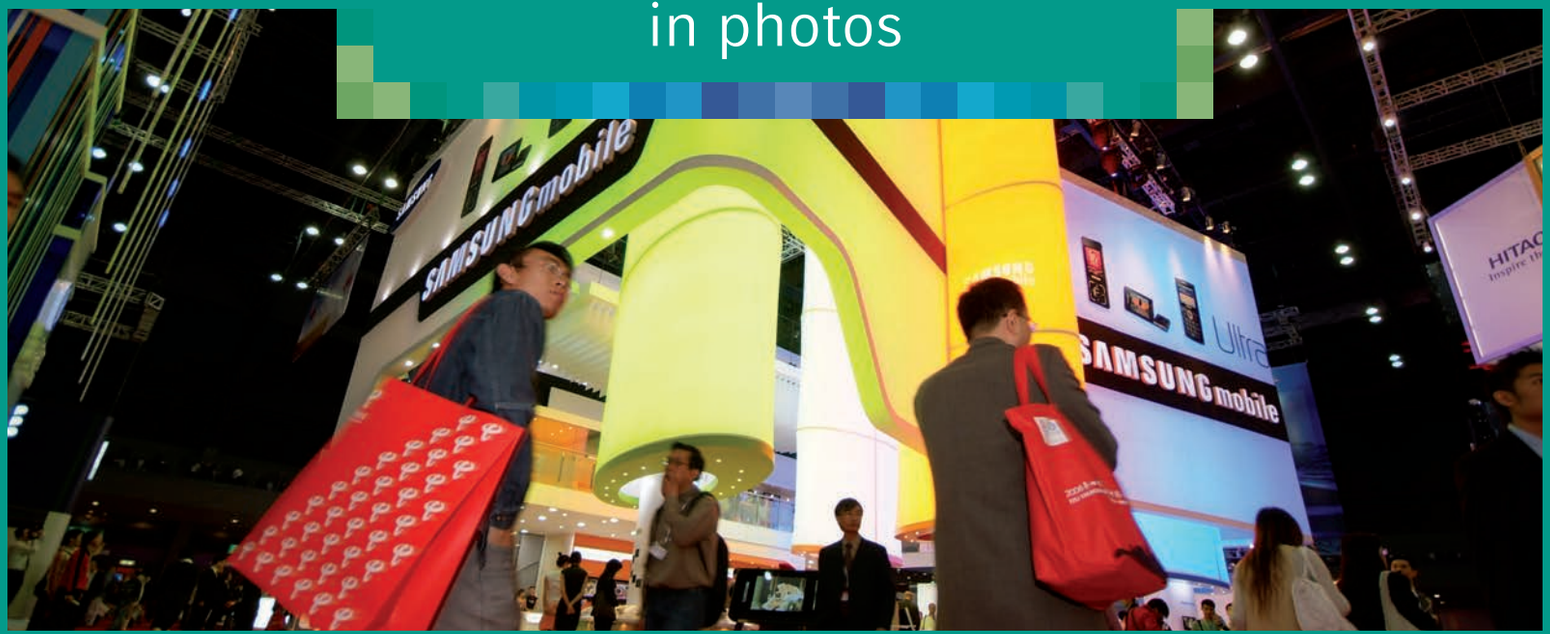
Propelled by explosive broadband growth and soaring mobile numbers, our transition to the digital world has been rapid and innovative. Many of us were probably not even aware of how important a role these technologies already played by the time of ITU Telecom World 2006. "If I have one hope as the show concludes, it is that these technologies can truly transform the way we live, no matter who we are or where we live in the world", said Fernando Lagraña, Executive Manager, ITU Telecom. "To achieve this transformation we must all commit to making ICT available and affordable to the whole world", he said, adding "As bags are packed and planes caught, and visitors return to their homes all over the world, how will the ICT industry remember this event? As well as the innovation, the lively debate, the busy halls and the fun, I hope its real legacy is as a milestone in our commitment to bridge the digital divide together". ■

ITU Telecom World 2006 in figures

Exhibitors	**695** exhibitors from **37** countries, including **21** pavilions of which four industry pavilions
Exhibition space, net (including upper levels)	**41 200 m²**
Registered trade visitors	**43 846** from **141** countries
VIPs	
Ministers/ministerial representatives at least at director-general level	**68** from **48** countries
Chief executive officers/ CEO representatives	**540** from **44** countries
Others	**347** from **32** countries
Total VIPs	**955** from **92** countries
Forum	
Speakers	**378** from **68** countries
Delegates	**2 117** from **86** countries (excluding youth fellows)
Total Forum participants, including speakers (not including VIPs and media)	**2 866** from **86** countries
Accredited media	**1 543** from **455** organizations and **47** countries. Of the total number of accredited media, **1 294** journalists from **378** media organizations and **39** countries covered onsite including **295** photographers, camera crews and support staff
Total participants	**61 958** from **141** countries

Source: ITU Press release, 8 December 2006.

ITU Telecom World 2006 in photos

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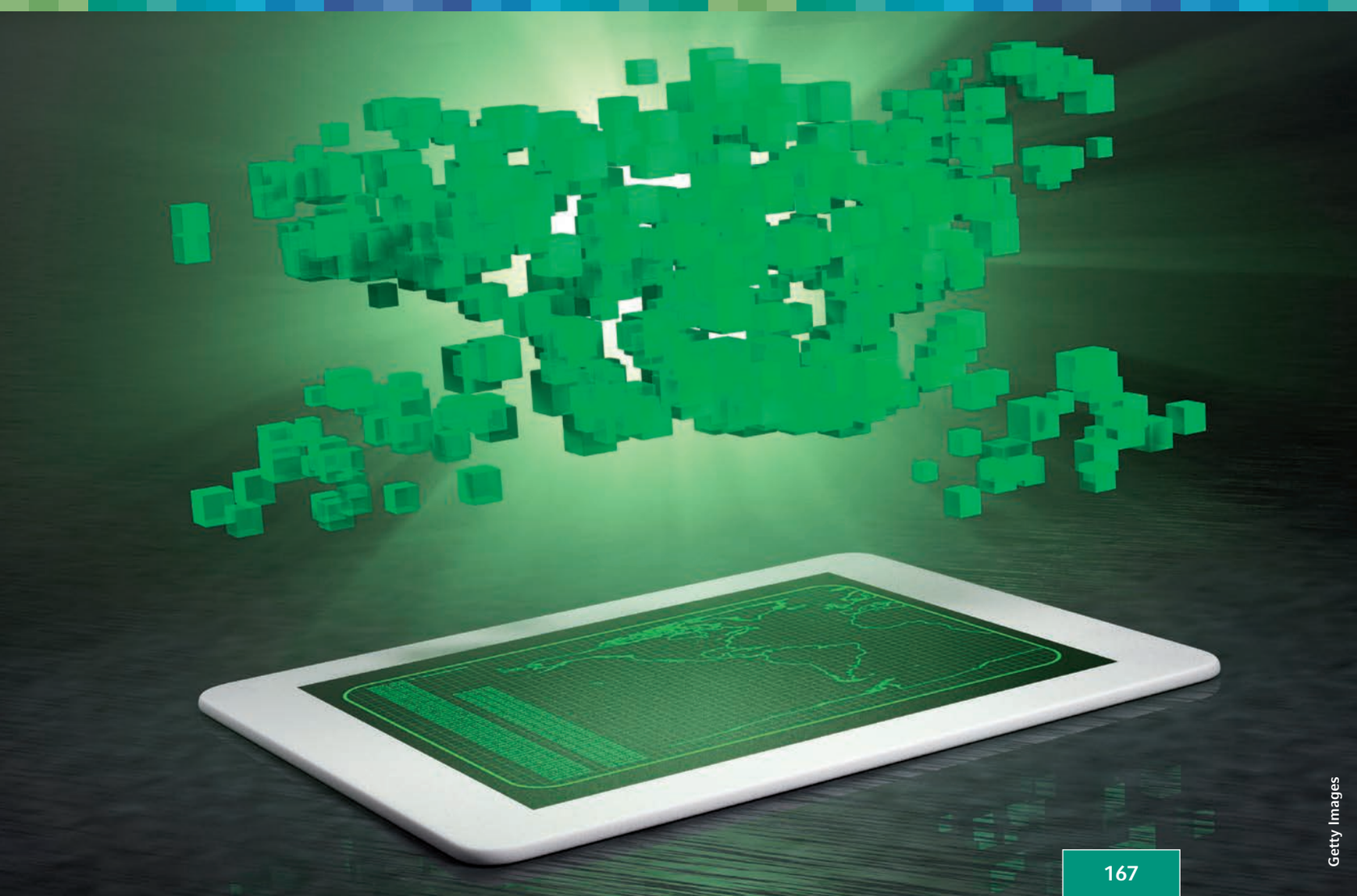
Open networks, Connected minds



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Open networks, Connected minds

At the opening of ITU Telecom World 2009, which was themed "Open networks, Connected minds", ITU Secretary-General Dr Hamadoun I. Touré painted a positive picture of the industry, as compared to conditions in 2003, the last time that an ITU Telecom World event had taken place in Geneva. "Back then, we had just achieved the first billion mobile phone subscriptions. By the end of this year we will have 4.6 billion. Back then, 680 million people used the Internet. Now, the figure is 1.8 billion — and more than half have broadband access," said Dr Touré.

Looking to a bright future ahead, Dr Touré called on the developed world to recognize the business opportunities ICT offered, and urged the developing world to make business flourish by creating the right environment.

Pictured at the opening of ITU Telecom World 2009 are (left to right): Moritz Leuenberger, Swiss Federal Councillor and Head of the Federal Department of the Environment, Transport, Energy and Communications; Rwanda's President Paul Kagame; United Nations Secretary-General Ban Ki-moon; and ITU Secretary-General Hamadoun I. Touré

"The current economic crisis has shown the resilience of the ICT industry," said David Hiler, President of the State Council of the Republic and Canton of Geneva in his opening address. "Its performance in today's troubled waters is a sign of maturity."

The 2009 event attracted over 2250 dignitaries to Geneva, including United Nations Secretary-General Ban Ki-moon. In his keynote address, Mr Ban described how ICT are being used to cut emissions and help countries adapt to the effects of climate change. Mr Ban explained how for decades the United Nations had provided seeds and fertilizers to farmers in Africa. "But now we are adding a new kind of tool: text messages," said Mr Ban. These allow information on weather, for example, to be transmitted swiftly and widely.

"Earlier this year, we teamed up with mobile phone companies and other partners to install 5000 new weather stations across Africa," explained the United Nations Secretary-General. "These will monitor the impact of climate change. When there is news, we will be able to transmit it immediately to farmers' mobile phones. We hope to reach as many African farmers as possible — because seven out of ten Africans rely on farming to survive."

David Hiler, President of the State Council of the Republic and Canton of Geneva

President Paul Kagame of Rwanda underlined how the powerful theme of ITU Telecom World 2009 — Open Networks, Connected Minds — had a particular meaning for Africa, even though the continent was a latecomer in embracing ICT and in starting businesses in that sector.

Highlighting developments since ITU's Connect Africa Summit, held in Rwanda's capital, Kigali, in October 2007, President Kagame said that there had been tremendous investment in communications infrastructure in Africa, which had produced some very good results. "Firstly, we have seen a reduction in charges averaging 30 per cent, thereby enabling more people to access communication services and improve their livelihoods. Secondly, these investments have produced returns of over USD 40 billion for the investors. Thirdly, these investments have contributed significantly to the expansion of our nations' tax bases, creation of small and medium-sized enterprises, as well as new jobs," Mr Kagame explained. Finally, he added, the new infrastructure was proving to be a powerful tool for regional integration, linking individual countries and connecting them to international gateways.

Since the Connect Africa Summit, said the President, over half a billion US dollars had been invested in communication infrastructure in Rwanda — 70 per cent of which was private investment. ■

A first-hand view of key trends

Chief Executive Officer of the STC Group, Saud bin Majed Al Daweesh, said: "It is a great pleasure to be part of ITU Telecom World 2009, especially among such distinguished participants, and to witness this high level of interest in telecommunications and in the IT sector. Our presence at this important event gives us a unique opportunity to exchange views, share experiences and get a first-hand view of key ICT trends. At STC, we are pleased to share some of our achievements and highlight the international experience we have gained from our fast-growing operations in ten countries around the world." ■

Saud bin Majed Al Daweesh, Chief Executive Officer of the STC Group

Wang Jianzhou, Chairman and Chief Executive Officer of China Mobile

Climate change tops the agenda

On climate change, Wang Jianzhou, Chairman and Chief Executive Officer of China Mobile, noted that ICT could play a role in energy conservation and the reduction of greenhouse-gas emissions. But the industry must start by examining its own performance. "We used to believe that the telecommunication industry has low energy consumption; however, following the construction of numerous base stations and abundant utilization of servers, power consumption has become one of the major operating costs and needs to be lowered," said Mr Wang. He explained that China Mobile had launched a Green Action Plan, which aimed to lower energy consumption via technical measures, including adjusting equipment, adopting natural wind cooling and water cooling, recycling packaging materials, and promoting renewable energy sources such as solar and wind power.

In the ensuing discussion after the opening of ITU Telecom World 2009, Heads of State and Government were unanimous in recognizing the role of ICT as a key tool in helping to mitigate and adapt to the effects of climate change. ITU Telecom World 2009 was attended by Presidents Paul Kagame of Rwanda and Robert Mugabe of Zimbabwe, Vice President Alhaji Samuel Sam-Sumana of Sierra Leone, Prime Ministers Pakalitha B. Mosisili of Lesotho and Mizengo Pinda of Tanzania, and Deputy Prime Minister Sheikh Ali Bin Khalifa Al Khalifa of Bahrain. These leaders acknowledged the need to have ICT recognized in any agreement that would be reached in the United Nations Climate Change

Robert Mugabe, President of Zimbabwe

Alhaji Samuel Sam-Sumana, Vice President of Sierra Leone

Pakalitha B. Mosisili, Prime Minister of Lesotho

Conference in Copenhagen, Denmark, in December 2009.

United Nations Secretary-General Ban Ki-moon urged industry leaders to use their wisdom to bring ICT tools to help mitigate climate change. "I know that the ICT industry itself is part of the problem, causing 2 to 3 per cent of greenhouse-gas emissions. But at the same time, by using ICT as tools, you can reduce at least 15 per cent of greenhouse-gas emissions in other sectors," Mr Ban observed. ■

Mizengo Pinda, Prime Minister of Tanzania

Sheikh Ali Bin Khalifa Al Khalifa, Deputy Prime Minister of Bahrain

ICT as a catalyst for recovery

At the opening session of the Forum Dr Touré stated that, despite the economic downturn which dominated 2009, the ICT sector had been very resilient, and that two-thirds of new jobs had been created in the sector over the past five years.

This view was echoed by John Chambers, Chairman and CEO of Cisco Systems, who said that one reason for his optimism was that groups who had traditionally not worked together were learning to do so. "If you look at the future of a country, public-private partnerships should be based on education, infrastructure, broadband, the ability to catch market transitions, and supportive governments, and all of these must work together in ways they have not done before," said Mr Chambers. He cited the example of a public-private partnership in relief operations following the earthquake in China's Sichuan Province in May 2008. Cisco, he said, had provided USD 45 million in a three-year commitment to support reconstruction efforts.

Reza Jafari, Chairman of the ITU TELECOM Board and Chairman and CEO of e-Development International, observed that "thanks to our exuberant industry, which is not only contributing to economic recovery but also helping development in general, we are seeing signs from different parts of the world that we are about to come out of the great recession of 2008 and the next step will be, hopefully, sustainable growth that ICT can help and support."

Hans Vestberg, incoming CEO of Ericsson, focused on cybersecurity in the light of the growing number of ICT users. "From a technology point of view we have a very important task, together with all stakeholders — namely governments, the public and private sectors, and vendors and service providers — to see that technology is enabled with security. Cooperation is needed in the whole ICT sector to enable growth. But if we don't take care of the technology and the security of that technology, of course we will not get that growth," Mr Vestberg stressed. ■

Looking at the benefits of mobile broadband

A VIP session on "Benefits of mobile broadband for the economy and society" looked at how the mobile industry had responded to the global economic downturn. Participants in the session underlined that access to mobile broadband has the ability to improve people's lives, create jobs, and generate tax revenues. India and China were seen as huge engines of growth in this market. "The fact is, when we bring a radio signal to a remote part of the country (India), people who have no address nevertheless have a mobile phone and income levels go up as people start using mobile phones," commented Sunil Bharti Mittal, Chairman and Group CEO, Bharti Enterprises, India.

Jon Frederik Baksaas, President and CEO of Norway's Telenor Group, unveiled a new study by Telenor to demonstrate how Internet access can boost economic growth and social welfare. According to the study, a 10-percentage-point increase in Internet penetration can increase gross domestic product (GDP) by 1 to 2.5 per cent and new business activities


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by approximately 1 per cent, and at the same time boost government revenues in some countries by as much as 8 to 9 per cent. Mobile broadband will boost GDP growth in countries where it is deployed, said Mr Baksaas. Expressing a similar view, Naguib Sawiris, Chairman and CEO of Orascom Telecom Holding Egypt, explained that "in Egypt, we grow 1–2 per cent every year in mobile broadband. By doing this, we are increasing GDP by 1–2 per cent every year". ■

Major broadband stimulus plans under way

Highlights from the "Open summit on ICT for economic growth" focused on some of the major broadband stimulus plans under way in a number of countries to stimulate long-term economic growth and create new jobs. Australia's Minister of Broadband, Communications and the Digital Economy, Senator Stephen Conroy, spoke of his country's "super-fast National Broadband Network" expected to support 25 000 jobs every year, on average, over the life of the project (an estimated eight years). Describing the project as a public-private partnership, Senator Conroy said that it would cost AUS 43 billion and would connect 90 per cent of all Australian homes, schools and workplaces with broadband services at speeds of up to 100 Mbit/s. It would use next-generation technologies such as optical fibre, but also rely on advanced wireless and satellite technologies for remote parts of rural Australia.

United States Assistant Secretary for Communications and Information, National Telecommunications and Information Administration (NTIA), US Department of Commerce, Lawrence E. Strickling, talked about the American Recovery and Reinvestment Act, which earmarks a total of USD 7.2 billion to fund projects that would expand access to, and adoption of, broadband services. Mr Strickling explained that NTIA would use USD 4.7 billion of this funding for grants to deploy broadband infrastructure in unserved and underserved areas in the United States, expand public computer centre capacity, and encourage sustainable adoption of broadband services. ■

Competition to drive mobile broadband development

Industry leaders stressed that competition, not regulation, should drive mobile broadband development. Robert Conway, CEO and Member of the Board of the GSM Association, said that key players in the mobile industry had asked the G20 governments for less intrusive regulatory regimes, and for the additional radio-frequency spectrum needed to extend the reach of mobile broadband services. ■

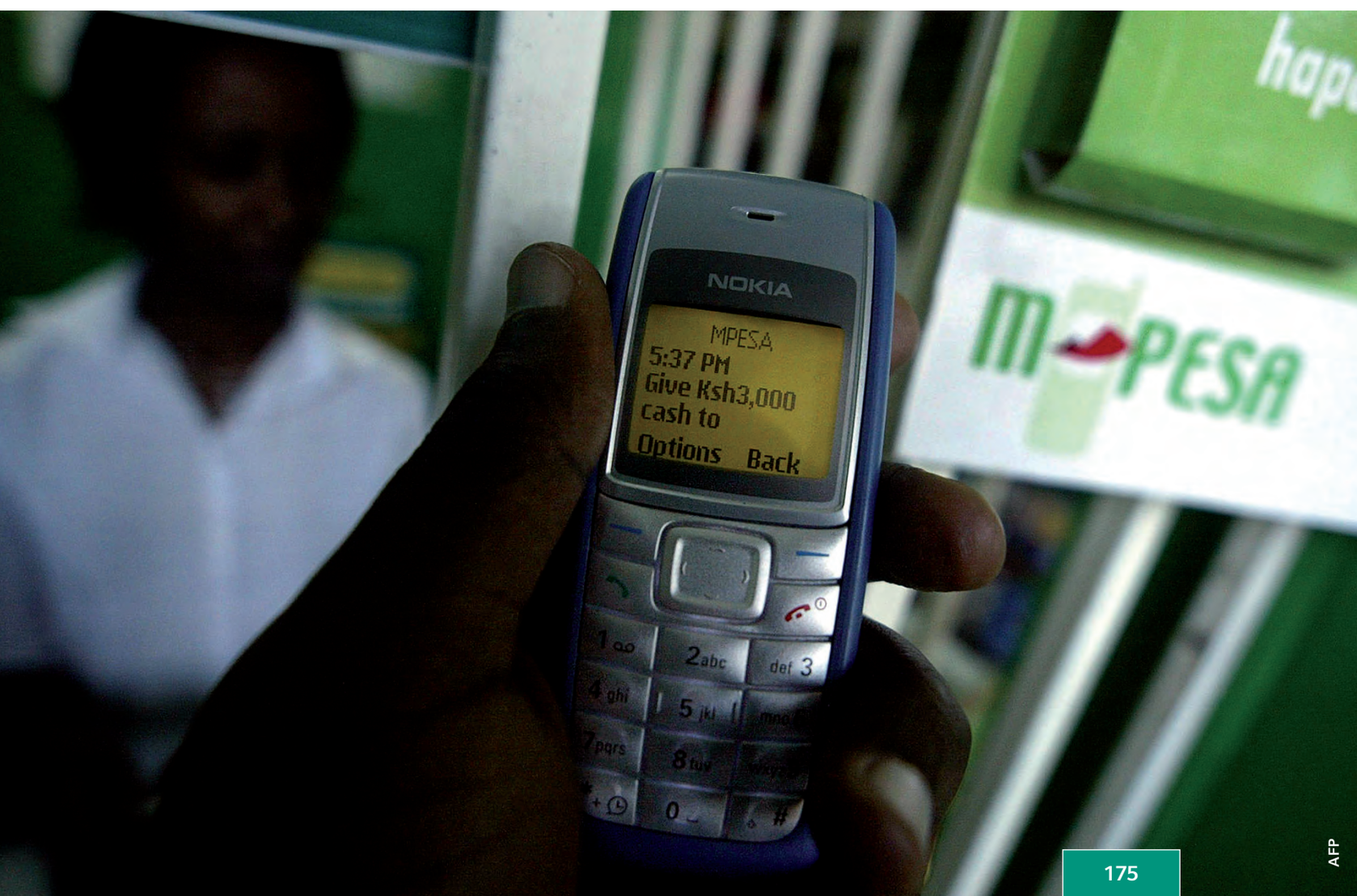
Cash goes mobile

Another VIP session examined how to create the environment needed for mobile financial services through cooperation

among regulators, financial institutions and mobile network operators. The speakers were Teppo Paavola, Vice-President and General Manager of Mobile Financial Services, Nokia, United States, and Kenya's Minister of Information and Communications, Samuel Poghisio.

With more than 4 billion mobile phone users worldwide but only 1.6 billion bank accounts, Nokia considered that global demand for access to financial services presented a strong opportunity to combine mobile devices with simple but powerful financial services. For many consumers, especially in emerging economies, this would be the first time they had access to such financial services. Rural consumers, said Mr Paavola, would particularly benefit from money transfers, while urban consumers used to online services would be able to pay utility bills, buy train and movie tickets, or top up their SIM cards, all through their mobile phones.

Kenya's success story in bringing mobile financial services to millions of its unbanked population was discussed. Kenyan mobile phone service provider, Safaricom (an affiliate of Vodafone), had become well known for its money transfer service,



AFP

M-PESA. This service offers a simple way for people to safely transfer and carry money using their mobile phones, and is a necessity for Kenyans who have no other access to banking facilities. Launched by Safaricom in March 2007, M-PESA had close to 7 million customers at the time of ITU Telecom World 2009. "M-PESA has transformed life in rural Kenya and revolutionized national payment systems," said Mr Poghisio.

The Kenya Communication Act, implemented by the Communication Commission of Kenya, enabled reform of the telecommunication sector, providing a base for successful mobile banking as a value-added service, explained the minister. ■

Keeping networks open but safe: Cybercrime must be countered

Francis Gurry, Director-General of the World Intellectual Property Organization, said that ICT provided an unprecedented opportunity for distributing and sharing content, but raised concerns about financing artistic endeavour. "For instance, in 2008, some 40 billion music files were peer-shared on the Internet illegally, representing a piracy rate of 95 per cent," he noted. "So the real question is how are we going to finance culture and creativity?"

Should the consumer or the Internet service providers (ISP) be liable? "We have to bring the ISPs into the value chain of creative production in order to solve the problem," said Mr Gurry. "A partnership is needed between content providers and those who run the channels."

More than 50 ministers joined in a discussion on the future of the Internet, with a focus on broadband and convergence, Internet public policy, and new and emerging cyberthreats. The Council of Ministers was addressed by Bangladesh, Bhutan, Cameroon, the Democratic Republic of the Congo, Egypt, Fiji, India, Indonesia, Lebanon, Lesotho, Malaysia, Mauritius, Mozambique, the Philippines, Samoa, Saudi Arabia, Serbia, Sierra Leone, Sudan, Sri Lanka, Swaziland, Tanzania, Tunisia, Viet Nam and Zimbabwe.

Speakers were unanimous in considering cybercrime "a global threat that requires global attention and a global solution". Indonesia emphasized that cybersecurity had become a prime issue for almost every ITU Member State.

Because cybercrime is often borderless and creates problems of jurisdiction, Lesotho called for an international instrument and for ITU leadership to take on board this issue and come up with such an instrument. Cameroon, followed by several other countries, noted the importance of the European Convention on Cybercrime, adopted in Budapest, Hungary in 2001, and called for new global measures. As Swaziland put it, "we would like ITU to champion the enactment of a Convention for International Cooperation in prosecuting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cybercriminals — there should be no place for them to hide".

Sami Al-Basheer, Director of the ITU Telecommunication Development Bureau, referring to IMPACT's new Global Response Centre in Malaysia, said that "in facilitating the access by ITU Member States to a global platform, we are realizing effective international cooperation. This is the very first time that so many nations are agreeing to work together to achieve a global culture of cybersecurity." ■

Freedom of communication

Moritz Leuenberger, Swiss Federal Councillor and Head of the Federal Department of the Environment, Transport, Energy and Communications, said that the theme of ITU Telecom World 2009 emphasized how ICT were integral to freedom of communication. "We must protect freedom of communication like we protect the environment," he declared. ■

Access for marginalized and disadvantaged people

In his video message to ITU Telecom World 2009, former South African President Nelson Mandela urged participants to support efforts to connect the world and bridge the digital divide: "ICT are the single most powerful tool we have for human progress," he said.

But providing connectivity, special training, services and equipment for disadvantaged and vulnerable groups on an individual basis is often too expensive for developing countries. United Nations Secretary-General Ban Ki-moon praised ITU's initiative to encourage its Member States to adopt school-based community broadband plans to bring ICT access to disadvantaged and vulnerable groups.

Through the Connect a School, Connect a Community initiative, ITU was working with a range of partners to identify and compile best practices on policies, regulation, applications, services and practical experiences. These best practices were then shared with Member States through the development of an online toolkit and related capacity-building activities.

Mr Ban said: "Connected schools can become connected community ICT centres. They can provide a vital link to marginalized and vulnerable groups. They can become an information lifeline for women, indigenous people, persons with disabilities and those living in rural, remote and underserved areas." ■

The voice of youth

Participants in the ITU Telecom World 2009 Youth Forum set out a declaration highlighting the need for cybersecurity and safety online. Raising awareness is the task of civil society, according to the Youth Forum, while "Internet service providers should provide solid solutions for child online safety". The declaration also proposed that safe use of the Internet should be made a compulsory part of the school curriculum and that ICT companies should help parents to become "more involved in communicating safe Internet usage to their children and to keep up with their children's ICT expertise".

On regulation, the Youth Forum declared: "We want to see open markets for telecommunications and ICT, in order to stimulate competition, and at the same time motivate local ICT companies in each country, to ensure affordability." ■

Former South African President Nelson Mandela (in the background), speaking via video link at the opening ceremony, underlined that "information and communication technologies are the single most powerful tool we have for human progress" and urged participants to "support efforts to connect the world and bridge the digital divide"

ITU Secretary-General Dr Hamadoun I. Touré addressing ITU Telecom World 2009

ITU Telecom World 2009 in photos

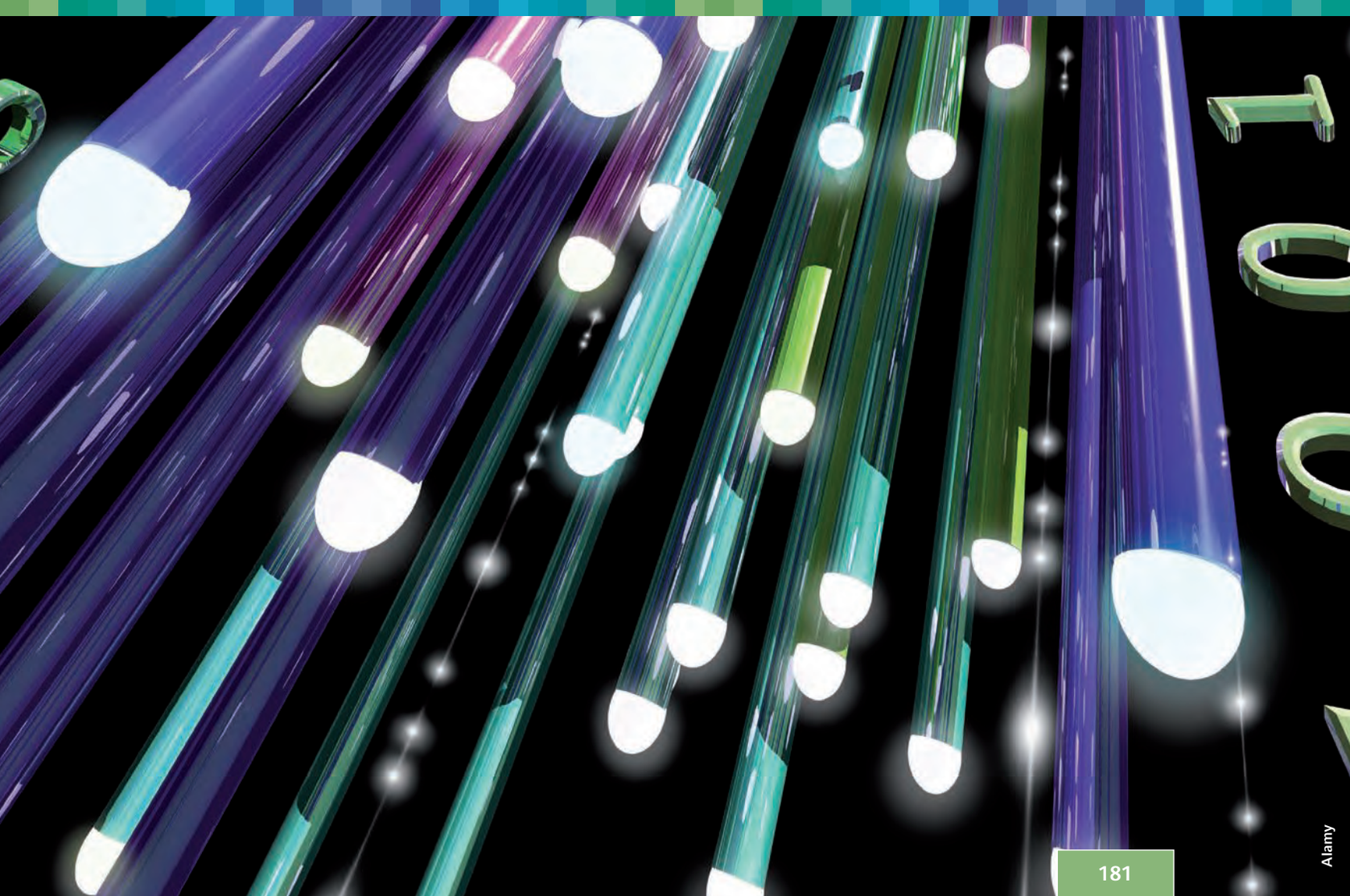
From left to right: ITU Secretary-General Dr Hamadoun I. Touré; Chairman and Chief Executive Officer of China Mobile Wang Jianzhou; and ITU Deputy Secretary-General and Acting Executive Manager of ITU Telecom Houlin Zhao

Director of the ITU Radiocommunication Bureau Valery Timofeev (right) during an interview with Telecom TV

From left to right: Director of the ITU Telecommunication Standardization Bureau Malcolm Johnson; Director of the ITU Telecommunication Development Bureau Sami Al Basheer Al Morshid; Chief Executive Officer of the STC Group Saud bin Majed Al Daweesh; and ITU Deputy Secretary-General and Acting Executive Manager of ITU Telecom Houlin Zhao

ITU TELECOM WORLD >2011

A new paradigm for top-level networking and knowledge-sharing



Alamy

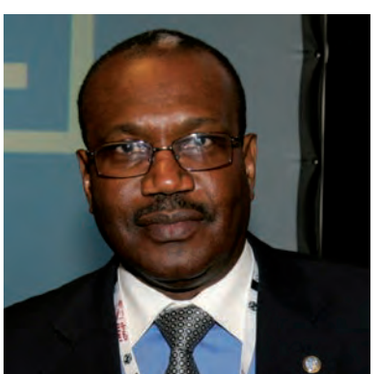
A new paradigm for top-level networking and knowledge-sharing

ITU Telecom World celebrated its 40th anniversary in 2011, bringing together in Geneva more than 6500 participants including Heads of State and Government, ministers, city mayors, chief executive officers (CEOs) from private-sector companies in the information and communication technology (ICT) industry, along with thousands of participants from around the world interacting in real-time via webcasts and twitter streams.

By 2011, the focus of ITU Telecom World had moved firmly towards debates and forums. But the original concept of acting as a showcase for industry technology lived on, and the floor show revealed some highly innovative technologies. ■

Opening the event for international dialogue on a high-speed future

A vibrant opening ceremony on 25 October 2011 sponsored by China Mobile featured: Gabon's President Ali Bongo Ondimba; Fiji's Prime Minister Commodore Josaia Voreqe Bainimarama; the Russian Federation's Minister of Telecom and Mass Communications Igor Shegolev; Switzerland's Head of the Federal Department of Environment, Transport, Energy and Communications Doris Leuthard; Chairman of Qatar Telecom Sheikh Abdullah Bin Mohammed Bin Saud Al Thani; Chairman of China Mobile Wang Jianzhou; and ITU Secretary-General Dr Hamadoun I. Touré.



Dr Hamadoun I. Touré, Secretary-General of ITU

"As we accelerate towards a ubiquitous high-speed future, international dialogue is essential to ensuring that we take the right decisions, learn from one another's experiences and avoid having to reinvent the wheel," said Dr Touré. "ITU Telecom World plays an increasingly central role in forging best practices that the public and private sectors can draw on when defining and deploying the networks that will offer best quality affordable services to all users."

Ali Bongo Ondimba, Gabon's President

Commodore Josaia Voreqe Bainimarama, Fiji's Prime Minister

Igor Shegolev, Russian Federation's Minister of Telecom and Mass Communications

The official ceremony was followed by an informal celebration in the OpenSpace arena in Palexpo, where participants heard from other dignitaries including Geneva's State Councillor in charge of the Department of Construction and Information Technology Mark Muller, the Executive Director of the United Nations Population Fund Babatunde Osotimehin, the Chairman of the Board of the Telecommunications Regulatory Authority of the United Arab Emirates Mohammad Al Qamzi, and the Chairman of the ITU Telecom Board Reza Jafari, who took the occasion to announce Dubai as the winner of the global bid to host ITU Telecom World 2012.

Intel Vice-President and General Manager of the Intel World Ahead Program John Davies announced an initiative by Intel and selected partners — Reaching the Third Billion Technology Users. Reaching the third billion means putting Internet access within affordable reach of another one billion people. To achieve this, Intel is working through its World Ahead Program to both bring down the cost of a connecting device and lower the financial barrier of the connection itself. ■

Doris Leuthard, Switzerland's Head of the Federal Department of Environment, Transport, Energy and Communications

Sheikh Abdullah Bin Mohammed Bin Saud Al Thani, Chairman of Qatar Telecom

Wang Jianzhou, Chairman of China Mobile

Broadband Leadership Summit: Broadband for the global good

The Broadband Leadership Summit at ITU Telecom World 2011 was co-hosted by ITU Telecom and the Broadband Commission for Digital Development, and brought together more than 330 senior policy-makers, Heads of State, industry leaders, academics and thought leaders. The Summit focused on the role of broadband as critical modern infrastructure driving economic growth, trade and productivity.

Rwanda's Prime Minister Pierre Damien Habumuremyi said that new broadband-enabled services and applications offer a wealth of new opportunities, especially for developing countries.

Australia's Minister for Broadband, Communications and the Digital Economy Senator Stephen Conroy agreed, stressing that "Broadband is the critical infrastructure of the 21st century and is of fundamental importance to development." Senator Conroy cited Australia's experience in building a national broadband network (NBN) as a significant investment in its broadband future to ensure that 100 per cent of Australians have universal access to speeds of at least 12 Megabits per second.

The Russian Federation's Minister of Telecom and Mass Communications Igor Shegolev explained how his country was aiming to get broadband to rural areas via a satellite network that would deliver Internet at rates that are comparable with urban areas. "The Russian Federation is one of the biggest territories in the world with low population density and we need to give opportunities to Russian businesses everywhere," said Mr Shegolev.

India's Minister for Communications and Information Technology Kapil Sibal agreed that government support was critical. The success of a recent project to give tablet computers to 100 000 schoolchildren in India was possible only because of public investment. Mr Sibal said that the collaboration of public and private sectors was needed to bring wireless services and affordable, accessible systems to remote and rural areas. "Unless we lower the cost, we will not bridge the divide," Mr Sibal added. "In India we have a tablet available now for just USD 35 and we have an opportunity to put that into the hands of children everywhere."

Participants also emphasized that education is vital to bridging the digital divide. There is a need in emerging markets to enable skilled people to work with the Internet, both in universities and in rural areas, not simply using it for e-mail, but also to encourage innovation by exploiting the resources of human intelligence throughout the world. "Grey matter is not the preserve of any community or nation and children all around the world need to be given the opportunity to develop," said Gabon's Minister for Communication, the Post and the Digital Economy Paul Ndong Nguema. He described Gabon's three-year plan for a national cyberstrategy, Digital Gabon, which aims to expand broadband services on the basis of high-bandwidth infrastructure (to boost e-learning, telemedicine and videoconferencing).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Senegal's Minister of State Alassane Dialy Ndiaye noted that broadband is not only empowering people individually, it is also transforming traditional social and economic activities through concepts such as e-learning and telemedicine.

For the Director General of the World Intellectual Property Organization (WIPO) Francis Gurry, broadband is the key to redressing the balance for developing countries which have traditionally been content-rich but distribution-poor. "But in order to realize the worldwide market for digital content to the full, the legal and administrative models currently in place must be adjusted to fit the new global digital marketplace," warned Mr Gurry. ■

Growth will put heavy demand on infrastructure

The challenges posed by the growth of broadband were also debated. Operators everywhere are under tremendous pressure to build out reliable, fast and affordable networks, according to Ericsson's Chief Executive Officer Hans Vestberg, who told delegates that we must rethink communications now that we have become a truly networked society. "It took 100 years to reach one billion fixed connections and just 20 years to hit five billion mobile connections," said Mr Vestberg. "Three times as many people will have access to the Internet over the next five years and by 2020 there will be 50 billion connected devices."

In less than ten years, connected devices could outnumber connected people by ten to one. Emerging new, networked technologies will be about distributing intelligence throughout the network and embedding it in the connected device, making it a two-way interactive communication device, rather than a one-way receptor. Cisco's Executive Vice-President and Chief Globalization Officer Wim Elfrink said that to foster such innovation requires an enabling environment on the part of regulators. "You need to think outside the box when talking about smart societies. Regulators need to think about unleashing that creativity rather than being Big Brother."

As well as the need for innovation, the session on Financing the Industry in Challenging Times emphasized that we cannot ignore the need for investment. Representing the Global Alliance for Improved Nutrition, Jay Naidoo said that the Broadband Leadership Summit had brought out the potential of ICT to foster development, but where was the money going to come from to drive that potential?

Tonga's Prime Minister Lord Tu'ivakano agreed that the challenge of securing finance was acute, especially in small developing countries like his own. "We should not shy away from investing in ICT but there is a belief that ICT should be self-funding," said Lord Tu'ivakano. "In countries such as my own, governments simply do not have the resources to support major projects."

Tonga was looking to the World Bank for a USD 37 million loan to finance a submarine cable connection. Nigeria's Minister for Communication Technology Omobola Johnson shared her country's experience in attracting investment in ICT thanks to its strong policies,

liberalized market and sound economic regulation.

While the Deputy Chairman of Hutchison Whampoa (Europe), Christian Salbaing, noted that the cost of providing infrastructure is going down — 3G was cheaper than 2G, and 4G would cut costs even further — Colombia's Minister of Information Technologies and Communications, Diego Molano Vega, said that providing access to affordable broadband services still remains a major challenge for people at the bottom of the purchasing pyramid.

Chairman of Grupo Carso Carlos Slim Helú noted that mobile penetration is reaching 100 per cent in the Americas, while the number of fixed lines is decreasing, so the younger generation is most likely to use their mobile to access broadband services.

Financing was also on the agenda at the session on "Megabits and MDGs". According to Burundi's President Pierre Nkurunziza, public-private partnerships should play an important role in the funding of broadband infrastructure. The President said that his government is working in partnership with the World Bank to build a backbone system in Burundi in order to provide all the country's inhabitants with high-speed broadband access. ■

Social media as an agent for change

Social networks are not only a means of communication for the exchange of thoughts and ideas, but they have also become an engine of revolution, progress and transformation, according to panellists at the Broadband Leadership Summit session Social Media for Social Change. UNESCO's Janis Karklins suggested that the same principles of freedom of expression which apply to traditional media should apply to social media. ictQatar's Secretary-General Hessa Al Jaber said that Internet rights should encompass a much wider vision with the broad objective not only of upholding basic human rights, but also preserving a healthy environment for the Internet and its users, one where the Internet can grow and fulfil its full potential. Ultimately, no one can control what people write on the Internet, she said.

Malaysia's Minister of Information, Communications and Culture Dato' Seri Utama Rais Yatim noted that the events of the Arab spring had demonstrated a clear role for social media as a harbinger of social change. ITU Special Envoy to the Broadband Commission and Finland's former Minister of Communications Suvi Lindén observed that social media are changing the process of decision-making through greater transparency.

UNAIDS Executive Director Michel Sidibé drew attention to UNAIDS' new Crowdsourcing initiative — a new social networking service seeking to engage 100 000 young people as actors of change to help implement a broad strategy to fight AIDS. He stressed that democratizing the issue and involving youth through social networks would go some way towards meeting the Millennium Development Goals — particularly Goal No. 6 on HIV.

The changing role of government was highlighted at the Summit session on Our Global Online Village. Tanzania's Vice-President Mohamed Gharib Bilal suggested that governments have a responsibility to create demand and promote innovative services for broadband infrastructure. Indonesia's Minister of Communications and Information Tifatul Sembiring agreed, noting that the Government of Indonesia has taken an innovative approach in promoting broadband by creating lead users at the national public administration and enabling public services over broadband. Azerbaijan's Minister of Communications and Information Technologies Ali Abbasov proposed that governments should have a special responsibility to track certain types of information (such as child pornography). The United States Coordinator for International Communications and Information Policy, Ambassador Philip Verveer, called for governments to make the case for broadband by bridging the access gap and by engaging in public-private initiatives. ■

Broadband Challenge recognizes communication as "a human need and a right"

The Summit closed with the Broadband Commission endorsing a Broadband Challenge that recognizes communication as "a human need and a right", and that calls on governments and private industry to work together to develop the innovative policy frameworks, business models and financing arrangements needed to facilitate growth in access to broadband worldwide. It urged governments to avoid limiting market entry and taxing ICT services unnecessarily to enable broadband markets to realize their full growth potential, and encouraged governments to promote coordinated international standards for interoperability and to address the availability of adequate radio-frequency spectrum. ■

Broadband Commission sets new targets for countries worldwide

Meanwhile, at its fourth meeting held during Telecom World 2011 on 24–25 October, the Broadband Commission for Digital Development set four important targets to be reached by 2015. These are:

1. **Making broadband policy universal.** By 2015, all countries should have a national broadband plan or strategy or include broadband in their universal access/service definitions.

2. **Making broadband affordable.** By 2015, entry-level broadband services should be made affordable in developing countries through adequate regulation and market forces (for example, such services should cost less than 5 per cent of average monthly income).

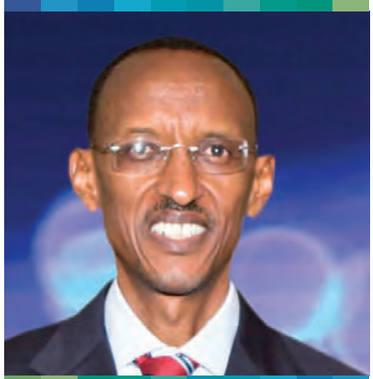
3. **Connecting homes to broadband.** By 2015, 40 per cent of households in developing countries should have Internet access.

4. **Getting people online.** By 2015, Internet user penetration should reach 60 per cent worldwide, 50 per cent in developing countries and 15 per cent in least-developed countries.

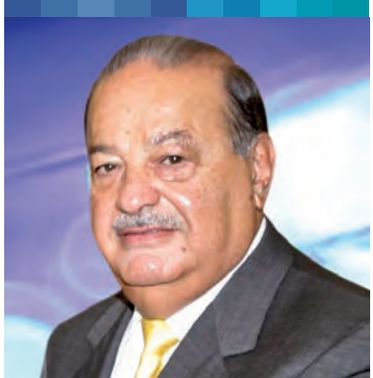
ITU agreed to undertake responsibility for measuring each country's progress towards these targets, and to produce an annual broadband report with rankings of nations worldwide in terms of broadband policy, affordability and uptake.

The Broadband Commission for Digital Development is co-chaired by President Paul Kagame of Rwanda and Carlos Slim Helú, Chairman and CEO of Telmex and América Móvil, with as co-Vice Chairs ITU Secretary-General Dr Hamadoun I. Touré, and UNESCO Director-General Irina Bokova. ■

Co-Chairs of the Commission



President Paul Kagame of Rwanda



Carlos Slim Helú, Chairman and CEO of Telmex and América Móvil

Co-Vice-Chairs of the Commission

Dr Hamadoun I. Touré, Secretary-General of ITU

Irina Bokova, Director-General of UNESCO

Forum highlights: Engage, collaborate, connect!

A Forum session entitled "Pathway to a Connected World", set the tone for the new style of the event — with multimedia, and interactive panels connected live to a global audience. Joining the delegates and audience in Geneva were thousands of children and young people connecting through metacentres around the world, plus those watching the live stream or asking real-time questions through an active Twitter feed.

Questions on the roll-out of infrastructure in rural areas focused on bringing costs down for end users. The Chairman of China Mobile Wang Jianzhou outlined how costs can be reduced through high volume and large-scale deployments, and pledged to work hard to lower costs as a part of China Mobile's social responsibility.

As handheld devices grow ever more sophisticated and demand for content-rich services such as mobile video increases, mobile data traffic is likely to continue growing at an explosive rate.

The Time-Division Long-Term Evolution (TD-LTE) spectrum workshop looked at the potential of TD-LTE technology to move to the next stage of wireless communication.

China is now in the process of TD-LTE testing. China Mobile's trial of TD-LTE had gone "smoothly" so far, according to Chairman Wang, and the company was now preparing to scale up roll-out. International collaboration and cooperation will be essential for global TD-LTE. Underlining the need for cooperation, Mr Wang explained how his dream was for "one device that could be used around the world", and how he believed that this would come true in a 4G era. ■

Chief technical officers outline the need for standardization

A meeting of 21 chief technical officers from leading companies in the ICT industry urged ITU to accelerate technical standardization work in the field of e-health. They stressed that reliable, interoperable standards are key to providing patients and health professionals with the means to use remote consultation services, advanced ICT-based diagnostic procedures and electronic health information services.

Regarding climate change adaptation, and following the tsunami and earthquake that hit Japan in March 2011, the meeting identified two crucial areas for further work in disaster relief: a system allowing individuals to notify a victim's friends, family or employer; and a guidance mechanism to help victims reach safety. ■

Digital cities

At the time of ITU Telecom World 2011, the United Nations had announced that the world's population was projected to reach 7 billion on 31 October 2011. As the global population headed towards that milestone, it also became clear that more and more people want an urban life than our economies and the environment can sustain. What can we do? One answer is to use information and

communication technologies, because these technologies can support a more sustainable approach to designing, building and managing cities.

Opening a day of debate on how connected technologies can shape the future of urban living for the good of city-dwellers the world over, the "Digital Cities Conference" began by examining what is meant by a smart city, and how public, private and civil society sectors need to work together to foster its development.

Turning the digital dreams of today into reality, not just in the developed world but also in the developing world, is clearly dependent on one critical element, ubiquitous broadband access. "I believe we will succeed in making cities better to live in because we have the power of ICT on our side," said ITU Deputy Secretary-General Houlin Zhao. ■

A new role for social media

A session entitled "The Perfect Storm" looked at how recent events — such as political uprisings in Egypt and the Middle East, and natural disasters such as the devastating earthquake and tsunami in Japan in March 2011 — prove that social media channels can be a genuine and powerful force for good. Egypt's Minister of Communications and Information Technology Mohamed Abdel Kader Mohamed Salem described how people turned to social media sites such as Facebook and Twitter during the uprising. According to Dr Salem, the number of Facebook users in Egypt increased from 6 million to 10 million within six months, and all of the government ministers are now using Facebook.

In Japan, events were somewhat different. In March the world witnessed a chain reaction from the earthquake, tsunami, nuclear meltdowns and power outages that brought chaos to the economic powerhouse. About 400 base stations or nodes were sucked away by the tsunami, meaning there was a time when even social media could not work. "Social media played a key role sharing updates quickly and enabled collaboration," said Satoshi Miura, Chief Executive Officer of Japanese carrier NTT. "But we also saw information being distorted. There was good and bad, and we were also confronted by limitations of social media. It was hard to find information due to the fact that there was too much information." ■

Making mobile broadband affordable

Panellists discussed one of the key themes of the event — the delivery of affordable broadband connectivity on the move. According to the Director of the ITU Telecommunication Development Bureau Brahima Sanou, affordability is improving. Recent ITU findings show that the cost of connecting to the Internet fell by 52 per cent between 2008 and 2010. "But the prices for mobile broadband are still more than the average

AFP

income in some 33 countries worldwide. How can we make it more affordable and how do we create incentives for investment?" asked Mr Sanou.

ZTE's Principal Business Consultant Christopher Mulley pointed out that telecommunication equipment providers have a major role to play in lowering the cost of mobile broadband. "We are developing technology and equipment that enable mobile network operators to reduce total cost of ownership in their networks," said Mr Mulley. According to O3b's Executive Vice-President John Finney, his company aims to connect "the other three billion" via the use of satellite communications where fibre is simply too expensive or challenging to deploy. "We are aiming to slash the price of satellite connections around the world where fibre fears to tread," said Mr Finney.

Etisalat's Group Chief Technology Officer Amaru Chavez Pujol highlighted the importance of spectrum efficiency, stating that it is essential for operators to examine new technologies to make the most cost-effective use of available spectrum, given the high costs of network investment.

Megafon's Technology Director Oleg Nikolaenko described a new project in the Russian Federation to deliver mobile network services across a 2000-km rural road connecting the east and west of the country. The EUR 100 million investment in the project was 50 per cent funded by the government, showing that private-public partnership initiatives are a key part of the financial mix.

GSMA's Chief Government and Regulatory Affairs Officer Tom Phillips highlighted how much of a problem tax can be. In some countries it accounts for up to 60 per cent of the cost of connectivity. Recognizing that radio spectrum is an important sovereign asset, he warned against trying to derive so much revenue out of spectrum that it would make investment unattractive.

Citing a recent report from Cisco, which says that Internet protocol (IP) traffic will grow at a compound annual growth rate of 32 per cent from 2010 to 2015, Cisco's Vice-President for Global Technology Policy Robert Pepper said more spectrum is needed to cater for this growing data demand.

The final challenge to overcome in the uptake of mobile broadband is that of awareness, argued Openmedia Group's Chairman Ernest Ndukwe. "We need to raise awareness about how important broadband is," he said. "Those messages need to get to the leaders, especially in developing countries. There is still a debate about where the money will come from, either subsidized, tax breaks or incentives." ■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Ministerial round table on ICT and climate change

At a ministerial round table on climate change, ITU Deputy Secretary-General Houlin Zhao highlighted the crucial role of ICT in reducing, monitoring, and responding to the effects of climate change, noting that "Business as usual is no longer an option if we want to ensure the right approach for our planet," and that ICT need to be part of the solution.

The round table brought together ministers from countries across the world including: Egypt's Minister of Communications and Information Technology Mohamed Abdel Kader Mohamed Salem; Serbia's State Secretary for Digital Agenda Jasna Matić, Ministry of Culture, Media and Information Society; Uganda's Minister of Information and Communications Technology Ruhakana Rugunda; Niger's Minister of Communication and New Information Technologies Salifou Labo Bouché; and Chairman of the Kenya Communications Commission Philip Okundi. ■

The spectrum challenge

The radio-frequency spectrum is a precious and vital resource. Every wireless technology depends on it and governments continue to allocate this valuable commodity in response to the

competing needs of different users. But space in the airwaves is getting increasingly scarce. A panel including Alcatel-Lucent, RIM and Qualcomm addressed core challenges relating to the scarcity of spectrum, noting the need to ascertain exactly who is using what, and whether spectrum is being used efficiently. A questioner asked how developing countries that lack infrastructure could balance the time and energy it takes to allocate spectrum with the cost of building up the infrastructure needed to meet expected data requirements. The panel pointed to sharing infrastructure as a solution. Alcatel-Lucent's Gabrielle Gauthey cited examples of rural areas where no duplicate networks exist and where stakeholders are increasingly agreeing to share costs, access and even spectrum. "Do we need four or five operators to build parallel networks? Surely it is better to just build one network and offer competition on services to help cut costs," asked Marc Furrer, President of the Swiss Federal Communications Commission. ■

Building a safe and secure cyberworld

Following an impassioned speech by Dr Touré on child online protection, and the importance of parental guidance and education of children, a ministerial round table focused on how to build a safe and secure cyberworld. Ministers shared best practices and experiences of how they were tackling specific cybercrime threats in core areas such as child online protection, economic fraud and cyberterrorism. Côte d'Ivoire's Minister of Post and New Information and Communication Technologies Bruno Nabagné Koné noted the need for laws to enforce user identification in cybercafés and over mobile networks. Mr Nabagné outlined how cybercrime is "basically a monetary crime, which endangers the image of a country, so the fight has become a priority issue for governments".

Participants praised ITU's Global Cybersecurity Agenda and the work it undertakes in fighting cybercrime. The role of the International Multilateral Partnership Against Cyber Threats (IMPACT), the executing arm of ITU in the area of cybersecurity, is to "translate ideas into action".

Burkina Faso's President Blaise Compaoré was appointed Chairman of the International Advisory Board of IMPACT. Announcing this appointment during ITU Telecom World 2011, Dr Touré said, "I am delighted to welcome President Compaoré, an active and high-profile advocate of a more global approach to cybersecurity, into the ITU-IMPACT fold. It is only with a truly coordinated international approach that we will win against the growing tide of malicious hackers and cybercriminals." ■

Cloud computing and the Internet of Things

Two sessions on the final day looked to the future in assessing the impact of cloud computing and the Internet of Things. For Microsoft's Corporate Vice-President, Technology Strategy and Policy, and Extreme Computing Group Daniel Reed, cloud computing and broadband access enable an unprecedented

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"democratization of access", where new applications and services that we cannot yet imagine will allow "the world's digital knowledge base to be projected into the palm of anyone's hand by virtue of the scale and access to cloud computing".

VMWare's Chief Cloud Technologist for Europe, Middle East and Africa Joe Baguely highlighted unprecedented business agility as the defining benefit of cloud computing.

Using services in the cloud is like being driven in a taxi that can at any given moment respond to changes in demand by expanding to the size of a bus, without any loss of quality of service for the original passenger. This "scalability at will" enables cloud computing models to cope with next-generation data of a complexity and scale never before envisaged.

Panellists discussed how the Internet of Things will enable forms of collaboration and communication between people and things, and between objects hitherto unknown or unimagined. The Chairman of the Board at the telecommunications standards organization, ETSI, Jonas Sundborg said that the key to the success of the Internet of Things will be interoperability. ■

Manifesto for change

The culmination of the ITU Telecom World 2011 event was a global Manifesto for Change that recognizes the importance of broadband for socio-economic development. Compiled with the help of event partner Ernst & Young, the manifesto draws on input from delegates and online participants. ■

Innovation on the show floor

Innovation was the byword of ITU Telecom World 2011, with showcases by event partners including Alcatel-Lucent, AT&T, China Mobile, China Potevio, Cisco, Datang, Du, Ericsson, Etisalat, Fiberhome, Fujitsu, Huawei, Intel, NTT Group, NTT DoCoMo, Qtel, Rohde & Schwarz, RIM, Satorys, Swisscom, Telkom SA, Turk Telecom, TDIA and ZTE.

"Innovation, by definition, is the future of our industry — and seeing some of the exciting ideas being worked on by the young and digital innovators attending ITU Telecom World 2011 has shown how innovation is now truly global," said Sheikh Abdullah Bin Mohammed Bin Al Thani, Chairman of Qatar Telecom.

New players from established and emerging markets were also showcased in the many national pavilions, including those of Algeria, Angola, Argentina, Azerbaijan, Belarus, Burundi, China, Czech Republic, Djibouti, Ghana, Switzerland, Japan, Kenya, the Republic of Korea, Malawi, Malaysia, Namibia, Nigeria, Poland, Qatar, Russian Federation, Rwanda, South Africa, Spain, Tanzania, Thailand, Uganda and Zambia. ■

Recognition for innovators

The winners of ITU's IPTV App Challenge were announced at ITU Telecom World 2011 by Malcolm Johnson, Director of the ITU Telecommunication Standardization Bureau.

The corporate app category award was given to Discover Japan from NHK Enterprise (Japan). The app offers users an introduction to the best of Japanese culture, both ancient and modern.

The award for best individual/small business app split the vote, with joint winners being 7 Days Gallery and Dengue Combat. 7 Days Gallery, by Alève Mine and Eric Bréchemier, is a digital space to promote new artists and designers. It showcases seven pieces of artwork from each artist or designer, presenting a different collection each day of the week. After browsing the collection of art works, users can also find information about the artists or designers.

Dengue Combat is an interactive television programme to promote awareness and knowledge to combat dengue fever. IPTV users can watch a video programme about dengue fever and they can also find the nearest medical care facility by providing their postal code, and verify their knowledge of this disease by participating in a quiz. ■

Focus on youth

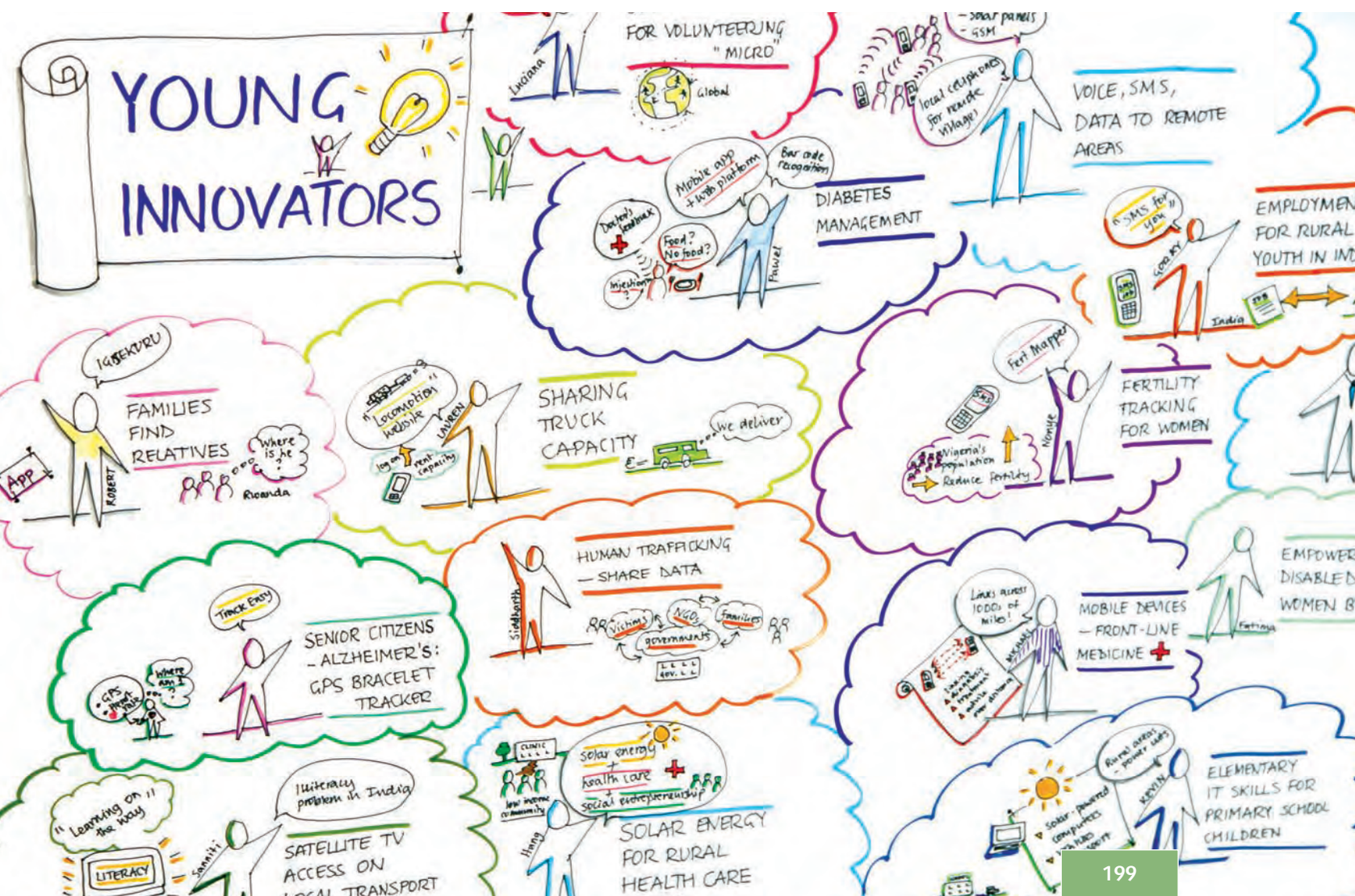
ITU Telecom World 2011 introduced another catalyst for innovation through a competition offering prizes of CHF 8500 seed funding to help winners turn their project concepts into reality. The Young Innovator and Digital Innovator competition brought 45 finalists from 22 countries to Geneva for training in how to pitch their innovative projects to potential investors. The winners, who were voted for by delegates in Geneva and around the world via online polls, were: ■

Young Innovator category

> **Sanniti Pimpley** (India) with a project to screen content onboard buses to help urban youth learn while on the way to work by bus.

> **Fab-Ukozor Somto** (Nigeria) with the MS2C (Mobile Skills to Cash) texting service that matches non-governmental organizations, private companies and public sector opportunities to text-messaged skill sets of citizens seeking work.

> **Richard Seshie** (Ghana) co-founder of Gas'Yo!, a project that helps make delivery of gas more efficient in the



last mile of distribution, thanks to mobile apps. ■

Digital Innovator category

> **Jian Min Sim** (Singapore), whose project involves developing a mobile app that gives volunteers the information they need to stay safe and informed.

> **Hasjra Bibi Cassim** (South Africa) for Showmemobi, a mobile app that shares South African stories through film and helps lift people out of unemployment.

> **Andrew Benson** (Sierra Leone), for Digital Hope, a service that uses digital tools to empower amputees to sell their own home-made goods.

WSIS Awards

ITU recognized the commitment of WSIS Stakeholders towards strengthening the implementation of activities related to the outcomes of the World Summit on the Information Society (WSIS). Countries that have contributed to the ITU's WSIS Fund in Trust were honoured during a special ceremony at Telecom World 2011. Certificates of recognition were awarded to United Arab Emirates, the Sultanate of Oman, Paraguay, Zimbabwe, Belgium-Liege, Mexico and Tanzania. The contribution of private-sector partners to the WSIS process — in particular Intel — was also recognized during this ceremony.

"Youth are the future, and nowhere is this more true than in our fast-changing industry, where innovation is being driven by a new generation of 'digital natives' for whom ICT are a natural and intrinsic part of the world," said Dr Touré. "I have no doubt that many of the 45 young innovators ITU has hosted at Telecom World 2011 will go on to big things, and help further reshape our digital world in ways my generation cannot even imagine." ■

Key event statistics

Over 6500 top-level participants on site including Heads of State and Government, ministers, city mayors, industry CEOs and technology gurus, along with thousands of participants from around the world interacting in real-time via webcasts and Twitter streams

332 global leaders participating in the Broadband Leadership Summit

34 of the world's major ICT names participating in the event as key partners

251 influential speakers from 64 countries taking part in the multi-streamed conference agenda

237 companies from 41 countries on the show floor

324 accredited media from around the world, including major global broadcasters, news agencies, national newspapers and ICT press

10 000 students from schools across the globe, sharing their work with 150 000 of their classmates across five continents.

Source: ITU Press release, 27 October 2011.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