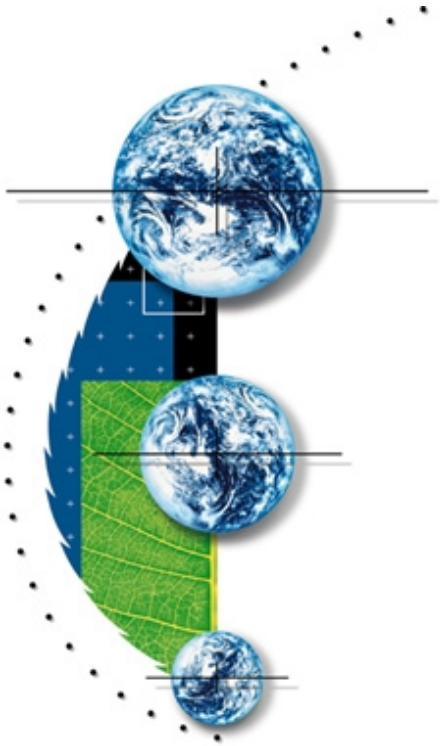
TELECOM DEVELOPMENT SUMMIT

Executive Summary



TELECOM 99

Geneva, 10-17 October

Inter@ctive 99

International Telecommunication Union

Development Summit Update by

Fernando Lagraña,
Vice-President TELECOM & Head, Forum Division

The Development Summit was a new presentation within the Forum structure designed to provide opportunities for discussion of a broad range of development issues at all levels of participation. It contains the Development Symposium, which as in the past was presented on a stand alone basis. The upgrading of the overall development track to that of a Summit was in recognition of its importance and expanding interest.

ITU fellowship holders make a major contribution to the success of the TDS. The Secretary-General of ITU, Mr. Yoshio Utsumi invited 83 Members States of the World (LDCs and LICs) to nominate two managers with responsibilities in operations and planning to participate in the TDS, attend the other sessions of the Forum, and visit the Exhibition through the fellowship scheme. A total of 75 countries accepted the invitation and 150 fellows attended the event.

By being able to attend and participate in TELECOM events, these managers are provided with a unique form of training whereby they acquire first-hand knowledge of the latest developments in telecommunications that can be applied to meet their own country's needs. Their attendance also provides them with the opportunity for interaction with other representatives of ITU Member States, industry experts and ITU regional staff.

Prior to attending the TDS sessions, the fellows of each country submit a short report on the telecommunication development status of their country. These reports have been found to be of considerable value both during the discussions in the working group sessions and when establishing the framework of the recommendations for consideration by ITU.

In addition, a report summarizing the progress made in implementing the recommendations made by the working group at previous events was prepared by Ernst & Young and was available at the event.

Many telecommunication industries which appreciate ITU's efforts and the value of the TDS have provided and continue to provide financial assistance to help meet the costs of the fellowship programme. In this context, I should thank the following industries and institutions for their valuable financial contributions without which the Symposium could not have achieved its goal: **Alcatel, Cable & Wireless College, Cisco Systems, Inc., Ericsson, Fujitsu Limited, Hewlett-Packard Company, INTELSAT, MCI WorldCom, NEC Corporation, NTT Communications,** Telecommunications Industry Association (TIA), The Republic and Canton of Geneva.

Opening session DEV.1

Monday, 11 October 1999	

Chairperson:	**H . E. Mr. Chen CHIMUTENGWENDE,** *Minister of Information, Posts and Telecommunications* (Zimbabwe)
Welcome Address:	**Mr. Yoshio UTSUMI**, *Secretary-General,* International Telecommunication Union (ITU)
Introductory Remarks:	**Mr. Hamadoun I. TOURÉ**, *Director,* Telecommunication Development Bureau (ITU/BDT)
Keynote Speakers:	**Mr. Tony REIS,** *CEO,* Swisscom AG (Switzerland)
	Mr. John CHAMBERS, *President & CEO,* CISCO Systems Inc. (U.S.A.)

Dr. Marko JAGODIC

The Chairperson of this session is H.E. Mr. Chen CHIMUTENGWENDE, Minister of Information, Posts and Telecommunications of Zimbabwe. Mr. Chimutengwende has been a minister for the past ten years and a member of parliament for 15 years. He is Chairman of the WorldTel Assembly of Governors and Deputy Chairman of the RASCOM Assembly of Parties. He is a former journalist and university lecturer in mass communications. Your Excellency, the floor is yours.

Thank you.

H.E. Mr. Chen CHIMUTENGWENDE

ITU Secretary-General, Mr. Yoshio UTSUMI, Director of BDT, Mr. Hamadoun TOURÉ, Honourable Ministers, Distinguished Delegates, Ladies and Gentlemen,

I am gratified to have been invited to chair this opening session of the Development Summit at TELECOM-99. All of us gathered here are well aware of the importance of telecommunications in almost all areas of human endeavour. It is in this light that I welcome you to this session. Studies conducted by ITU have revealed that each new telephone line in the developing world contributes approximately USD 4 500 to the gross national product. This establishes the link between effective communications and economic development. The challenges in the developing world include reducing poverty, eliminating illiteracy and improving health services. All this can only be addressed in an environment in which communication works.

Ladies and Gentlemen, The missing link in the evolution of most developing world information infrastructures has been and continues to be the lack of finance. This is partly due to the fact that most developing world economies are dependent on the West and are forced to serve the interests of the West through the perpetuation of the undemocratic and unfair system of international political and economic relations. This system is designed to keep the developing world totally manipulated and exploited by the industrialized countries, and must be changed if we are to have genuine cooperation. Our strategies as developing countries have to address this issue first and foremost. At the regional level, complementary strategies have to be developed to optimize the utilization of resources. For instance, it has become clear that satellite technology will play a key role in most future technological developments. It therefore makes sense for the developing world to invest in satellite technology. Africa, for example, pays out some USD 700 million a year for routing its telecommunication traffic through the western world. This is why in Africa, through RASCOM, efforts are being made to enable African countries to create their own capacity through the launching of a satellite system dedicated to Africa and designed to allow for interconnectivity and the creation of more capacity for the rural areas of the continent. As the current Deputy Chairman of RASCOM, I should like to take this opportunity to thank ITU for its cooperation and support for RASCOM, the Regional African Satellite Communications Organization. On the broadcasting front, I should like to single out and praise the initiative by a brilliant African entrepreneur, Mr. Noah Somara, who created World Space. World Space has already launched its first satellite, AFRISTAR, which has recently started direct digital audio broadcasting to the whole continent.

I understand ASIASTAR is scheduled to follow early next year. I am pleased to learn that this service is being exhibited on one of the stands at TELECOM 99, demonstrating the multimedia application of this relatively low-cost technology that brings high-quality sound broadcasting to the lower-income masses of the developing world.

It was also an ITU initiative that led to the creation of an innovative institution for cooperation by the name of WorldTel. My own country has given a concession to WorldTel to create a telecommunication development and operating company to provide it with much-needed lines and services. Initially, 150 000 new lines are to be provided next year under this project. The company, known as WorldTel Zimbabwe Private Limited, will operate as a joint-venture complementary service provider and partner of our national operator, PTC. We have high hopes that WorldTel will live up to the great expectations of the developing world. The number of mobile subscribers in Zimbabwe jumped from 20 000 to 150 000 in the 12 months up to August this year. Our objective is to be able to provide telephone service on demand in two years' time, through privatization and other special arrangements. This means a fourfold increase in the number of lines, which is quite feasible in terms of our current plans and projects. Zimbabwe's fixed network currently comprises 250 000 lines, for a population of 12 million.

Finally, before I invite our host, the distinguished Secretary-General of ITU, to make his opening remarks to this Development Summit, I should like to remind him that of all the three Sectors of ITU, the Development Sector eluded most of his predecessors. In spite of the glittering masterpieces that are regularly mirrored at the ITU-sponsored four-yearly

TELECOM event, three-quarters of the world's six billion people are still far away from even the basic telephone. As you start the first year of your mandate, Sir, at the helm of ITU, I should like to appeal to you to break new ground in this Sector. Your predecessors did a lot, but still the present reality shows that not enough has been accomplished. The communication gap is there today, and is regrettably ever-widening.

On behalf of the developing world, I am challenging Mr. Utsumi to find ways and means to harness ITU's resources and connections to bring the miracle of mobile communications to the doorsteps of our ill-served people. I am fully confident that he will rise up to this historical challenge that has been placed on his shoulders. It is now my privilege to invite the Secretary-General, Mr. Yoshio Utsumi, to address this session.

I thank you.

Mr. Yoshio UTSUMI

Your Excellencies, Ladies and Gentlemen,

Welcome to the Development Summit at TELECOM-99. The programme of this summit covers issues that are current not only in the present telecommunication environment but that are also a top priority for the development of telecommunications throughout the world. Keynote speakers, panellists and guests will, in the addresses and discussions, share their wide-ranging experience and far-reaching views. This catalytic input will be of certain benefit to us all, including the developing countries here present, and will help intensify telecommunication development in the developing world.

In my opening speech last Saturday, I referred to the goals set in ITU's report, The Missing Link, which include the goal that all humankind should be within easy reach of a telephone by the dawn of the millennium. This goal is now almost within our grasp. Technologies such a mobile telephony, satellite communications and digital technologies mean not only convenience, but also a dramatic lowering of costs. And these lower costs translate into lower costs for building of infrastructures, lower running costs for operators and lower prices for end users.

Mobile access is also seen as the way forward in the world's poorest countries, where infrastructure is becoming cheaper and easier to install. Cellular phones can be brought to thousands of villages throughout poor countries through the use of micro-credit. Thanks to such new technologies and innovative schemes, and the injection of foreign capital into the telecommunication market, we are closing some of the gaps and improving access to the telephone. Soon, all of us will be within walking distance of a phone.

But as this gap narrows, others are widening, and here I am referring to the gaps between people who are connected and those who are not. We must now set a new goal and apply all the new technologies and momentum so that gaps in connectivity to the Internet can be reduced to the point at which such connectivity is possible from each and every home. Everyone in the world must be provided with the tools to access the global information economy and reap its benefits through the wealth of information available via the Internet. I believe this to be an achievable goal, but we cannot expect a miracle. Miracles will never happen without our effort, and I hope that this goal will stimulate all those here present to find ways of securing with both hands the future that is so visibly within our reach.

I should like to thank the Secretary-General of ITU, Mr. Yoshio Utsumi, for his welcoming address. I now move on to the introductory remarks by Mr. Hamadoun Touré, Director of ITU's Telecommunication Development Bureau. The floor is yours, Sir.

Mr. Hamadoun TOURÉ

Secretary-General of ITU, Mr. UTSUMI, Honourable Ministers, Distinguished Guests, Dear Colleagues,

Allow me also to take this opportunity to welcome you to this Development Summit and to these outstanding events which TELECOM-99 and Interactive-99 represent for the global telecommunication and ITU communities. As I participate for the first time in TELECOM as Director of BDT, I cannot help but be impressed by this outstanding gathering of telecommunication world leaders, decision-makers and key figures from all over the globe. Indeed, it is in this place that the very best of today's telecommunication and information technologies and services come together in one location. Government and private sector players from all parts of the world come face to face and have equal access and exposure to the best of today's information technology and services.

Here, this week in Geneva, there is no gap to breach, no digital divide. But in the real world, outside these halls, there is a gap – a yawning, open gap between national economies and individuals who have easy access to telecommunication services, ranging from the simple phone call to the ability to hook up to the Internet, and those who have no such access. It is my fondest ambition – shared, I know, by everyone here – that the existing gap should rapidly be closed and that no new gap in emerging services should appear.

Our challenge, then, is to go forward from the agreement that we share in principle to action in practice. We can succeed only if governments and industry from developed and developing countries alike work together with ITU to create sustainable approaches to providing telecommunication infrastructure and services to the developing and, in particular, rural areas of the world. This Development Summit will help us to gain to a better understanding of what needs to be done to close the gap. We will have the opportunity this week to hear eminent speakers address such issues as reform of the accounting rate system, the application of new technologies, universal service and Internet capacity development, to name but a few, all of which can have a profound impact on bridging the development gap. I can assure you that I and BDT as a whole will be listening with great interest to the various presentations and discussions over the coming week.

Excellencies,

In the past few months, since I took over as Director of BDT, I have been working with the BDT team and coordinating with the other elected officials of ITU to establish a focus and momentum for the Bureau that can measurably and visibly advance the development of telecommunication services in developing countries. We have already achieved some notable successes and tangible results that serve national and regional needs, particularly in the areas of regulatory and policy framework, that facilitate the goals of attracting investment and private sector participation, that create a fair market environment and that advance the public policy goals of local development and universal access, technical assistance that can be duplicated and continued after the pilot stage,

training for regulators and private sector individuals that embraces best practices abroad for application at home, and dissemination of relevant valuable information.

In the interests of accomplishing even more in the future, I have restructured BDT to maximize its efficiency and responsiveness. Our field offices are a key factor in our activities to further the development of telecommunications in the regions and assist private sector players who wish to do business in various countries. Our operational plan and measurable objectives, which I am happy to share with you, from the basis of my pursuit of best practice benchmarking for the performance of our teams here and in the regions. All of us, not only the developing countries, stand to benefit from closing the telecommunication gap, and I assure you that every effort will be made to ensure that no new gap emerges. The developing world is, after all, a huge untapped customer base. The sooner that all of us set out to adopt new approaches to identifying developing country customers, the sooner the business community will appreciate the growing rewards.

Indeed, all of us have challenges within the context of ITU, and it is my personal ambition and that of the BDT staff as a whole to rise to that challenge. Let us now challenge ourselves even more. Let us challenge you, the governments, to meet BDT's commitment to the creation of a hospitable environment for telecommunication investment and infrastructure expansion. Let us challenge you, the private sector, to meet BDT's commitments with ideas, programmes, investment and training, so that there will be a sustainable delivery of telecommunication services for businesses and citizens in developing countries and, at the same time, a stream of revenue for operators and manufacturers in the industrialized world. Let us challenge ourselves, in all that we do, to consider the talents and needs of all our peoples, women and men alike. Let us challenge ourselves, as leaders in our industry, to motivate our colleagues to pursue goals which may seem like a dream, but which are altogether realizable. Let us make the telecommunication revolution happen everywhere.

So, as we challenge each other, as partners in telecommunications, to create seismic history by helping to close the chasms that separate the developing and developed worlds, I invite you to participate in this endeavour and to take pride in measuring its results, which will also be your results.

In closing, may I express the sincere wish that this Development Summit will represent a new point of departure for a long and fruitful partnership with the ITU Development Sector. Let me again reiterate my commitment to an optimistic outlook for this Sector. I truly believe that, on the eve of the new millennium, all the ingredients are there for a wonderful chemical chain reaction from which the developing and developed worlds alike will benefit. A chain reaction in which BDT can serve as the small, yet proud, catalyst.

I invite you, over the next few days, to express your vision and your thoughts, and to make it happen. I thank you.

I should like to thank Mr. Hamadoun Touré, Director of ITU's Telecommunication Development Bureau, for his important introductory remarks. I now move on to our two keynote speakers, the first of whom is Mr. Tony Reis, the Chief Executive Officer of Swisscom. The floor is yours, Sir.

Mr. Tony REIS

Your Excellencies, Mr. Secretary-General, Ladies and Gentlemen,

It is something to be remarked upon that we, you and I, have taken the trouble just to be here today. Some of you have travelled halfway around the globe to visit an exhibition that promises to lay the solution for avoiding just these very trips. So why are we here, rather than using the benefits of the emerging information society? After all, telecommunications and computer technology mean that we can communicate with each other, regardless of time and regardless of place. At the click of a mouse, we could all, in our own good time and from anywhere, look at the exhibition stands which we have here, download information, ask for advice, and so on and so forth.

So, what are we doing here? Well, there is no doubt that telecommunication is required in all walks of life; however, and this is in part the answer to my question, telecommunication with its limitless possibilities cannot satisfy all our requirements, and in particular, one very human requirement, which is the need for direct communication. A contradiction? Not at all.

Telecommunication does allow us to broaden our horizons and extend the scope of our actions almost beyond our imagination; but telecommunication remains no more than a tool for communication – a tool that should be used appropriately and that should not prevent us from practising and cultivating direct human communication.

In contrast to telecommunications, direct interpersonal communication stimulates all our senses – what we hear, what we see, what we feel, what we smell, what we taste. Each of these senses adds its own element to our perception. In addition to what is actually being said, we gain an overall impression that helps us to detect contradictions and to consider, interpret and evaluate what has not been said. This is what makes direct communication superior to its technically assisted counterpart.

Now, the possibilities opened up by the electronic marketplace are, of course, fascinating. The market saves time and money, offering customers information around the clock. But, would you offer someone a job without having had a one-to-one interview with them? Would you conclude an important deal with a business partner without ever having had a face-to-face meeting? Many would not. But it can make practical sense, saving time and money, to recruit using telecommunications if the recruitment process is triggered by these means and if telecommunication subsequently takes care of all the administrative work.

I am sure I am not telling you anything new when I refer to the importance of communication in human society. Humans are social beings dependant on communities. Our entire civilization would be unimaginable without the cultural achievements of communication. And that is the paradox: that communication, in its evolution towards telecommunication, and as the basis of a functioning society, actually becomes a risk for this very society.

So, telecommunication makes people more autonomous, more independent, more mobile. It perhaps also makes them more lonely, despite the link to the whole world. But, more provocatively, the risk is that while communication connects, telecommunication may disconnect. Now you could argue that the human race has never before had so many opportunities to make so many and such varied contacts so quickly, to communicate and gather information on a worldwide scale.

And what about these so-called chat rooms or Internet cafés? Aren't these new modern communities that characterize our global age better than those close-knit village communities? A comparison between interpersonal relationships in the real and virtual worlds provide the answer. I should like to go into some of these striking differences.

It is quite possible to exchange ideas in virtual rooms, which are also communities where people feel bound by common values and interests and act accordingly. But, unlike the real world, where written laws and obligations govern relationships, people in virtual communities can shirk responsibility much more easily. They are anonymous travellers in the no man's land that is the World Wide Web.

Virtual communities are not binding and are usually short lived, unless they develop into real contacts – a common future based on similar interests, objectives or values. Whether such communities create any lasting culture is debatable, and in the virtual world, where anything is possible, why should anyone care?

Nothing can replace real encounters and real relationships. I am thinking here of the continuity and the quality of living with each other, of exchanging feelings and the physical contact. Indeed, I can't think of any case where posterity has been assured by platonic relationships – or do you think that cyber love could help here? So, we see that communication and telecommunications are not the same. They are not interchangeable, but rather complement each other.

What conclusions can we draw from this? Does telecommunication distance us from community? Ever since the invention of the printing press, people have been suggesting that new media uproot communities and push people into isolation. However, if looked at in absolute terms, this view is not correct. The following argument supports this. Neither the spread of printed material nor the development of radio and television have turned people into wandering hermits – quite the contrary. Such developments have encouraged us to think about what we have read in the paper, heard on the radio and seen on television and to communicate our views. What's more, use of the most recent medium, the Internet, is helping to promote language knowledge and literacy.

Last but not least, it is claimed that people are starting to get lost in the incredible mass of information that is available on the Web. From an anthropological point of view, people are now coming up against the limits of their capacity to perceive and process information. Human beings can only cope with so much information at any one time, and cannot communicate in the absence of certain boundaries, not even with technical aids. We therefore use selection to sift out information into a manageable quantity. The mass of information available tends to force people to further refine their capacity to differentiate and select in order to decide what information, and how much of it, they really need.

New media, such as the Internet, that allow the user to select information more precisely, have great benefits as a working tool for the individual, and countless benefits for the economy as a whole. From today's perspective there seems to be no limit on what electronic trade and commerce will bring in the near future. These benefits will be felt by all, but even more so by the disabled and others whose freedom of movement is in some way limited.

In answer to the question, "Does telecommunication distance the individual from community?", my response is that the new achievements in the field of telecommunications are leading to major improvements in everyday life, but that people cannot and do not want to do without direct communication, community and shared experience. Indeed, I am standing here in person to communicate to you information about telecommunication, rather than letting telecommunication try to tell you how to communicate.

Every innovation has its opponents, who advocate sticking to trusted routines and paint a gloomy picture of the future, without noticing that they are already in the middle of it. Even the information society has its sceptics and prophets of doom, but we cannot turn back the clock. The information society is a fact of life, and one that has a promising future. Telecommunication offers countless opportunities in the fields of business, education, medicine, politics and culture. There is huge potential for improving our quality of life by putting telecommunications to good use, but such opportunities have to be viewed alongside the inherent risks. Allow me to explain.

The desire for unlimited mobility is eroding our living space, and we now, for example, have to seek out traffic-free areas. The mass media age has brought with it a bigger deluge of paper than ever before, and while technological progress and automation have brought greater efficiency, they have also led to an increase in unemployment. What I am trying to say with these three examples is that all these achievements are based on visions that aim primarily to increase efficiency, but which do not consider human beings in the equation. The resulting negative consequences come from a one-sided interpretation of technological development.

I have a more drastic example of such failings: industrialization itself. Productivity gains from machines obviously represented considerable progress, which in turn brought about dramatic changes for the better, but only in one respect, as no one considered improving social conditions at the same time. In the case of industrialization, tomorrow's economic structure collided head-on with yesterday's social structures. I am convinced that one side of development is bound to lead to major disparities.

Today we are talking about redefining markets and deriving added value from change. This places major challenges in our path only days before the new millennium. Therefore, we must extend the structural change to other areas; otherwise, we will be creating new structures, but still using the old patterns of thought, and, as history shows, it is difficult and expensive to make corrections later on. Social upheaval is often unavoidable. Social unrest and the testing of political strength have often destroyed what has been achieved, at least in part, and lead to setbacks and temporary stagnation.

This is why we need a workable vision for the information society. We need a vision that takes full account of people and all their needs, and that allows for continuity into the future. We need a vision that takes account of human thoughts and actions, and I think that telecommunication offers an excellent opportunity that we must use. After all, telecommunication gives us room in which to move. With it, we can avoid being bound by the constraints of having to be physically present, without compromising the quality of life.

Telecommunication offers interesting prospects for stimulating economic development in both the developed and developing countries, in many parts of which a considerable amount of know-how and cultural heritage lies dormant, as yet untapped. We should be using telecommunication rather than letting telecommunications use us. By so doing, we can help to put people back where they can provide the greatest benefit and where they do their finest work – that is, in the community.

Ladies and Gentlemen,

Rapid change, a fast-paced environment and permanent reachability are unmistakeable signs of the times. There is no doubt that we must be flexible and willing to change and learn in order to keep up. However, we can do this only if we accept and respect our limits as human beings – our legs can only move so fast. This is why, even in these fast-moving times, taking your time can be of great benefit. Take your time at TELECOM-99 to get to know some of the interesting aspects of the world of telecommunications, but also take the time for interesting encounters with people. Use the TELECOM-99 platform for communication through personal contact.

Thank you.

I should like to thank Mr. Tony Reis, Chief Executive Officer of Swisscom, for his instructive and important presentation. We now move on to Mr. John Chambers, President and CEO of Cisco Systems, the worldwide leader in networking for the Internet. It's over to you, Sir.

Mr. John CHAMBERS

Mr. Secretary-General, Ladies and Gentlemen,

It is truly an honour to be here today and to talk not only about how telecommunication will change the world, but also about how it represents the second Industrial Revolution. The first Industrial Revolution very simply brought together people in factories and determined which countries grew and survived around the world, and which countries had the highest standard of living. It also determined who got left behind. And it occurred over several hundred years. The second Industrial Revolution will bring together people and information in virtual global companies. It will determine which companies grow and survive, and also which ones get left behind. It will determine which countries have the highest standard of living and which countries get left behind, thereby further magnifying a digital divide between the 'haves' and 'have-nots' that is already too large.

The first Industrial Revolution has spanned over two hundred years and is still going on around the world today. The second Industrial Revolution, which will be called the Internet Revolution in my opinion, will occur over two to three decades and will have the exact same impact. It will be an Internet generation of companies, individuals and countries. In short, everything is changing, and we are only now beginning to grasp this concept that a short time ago only those with a technology background could begin to understand. It changes every company and every place in the world, regardless of the industry or geographic location.

And, while we're going to talk about many of the drivers of this change, we'll talk about worldwide competition in business, we'll talk about productivity, we'll talk about enlightened business leaders and government leaders. Make no mistake: what is causing the rapid acceptance of the second Industrial Revolution is survivability. Those companies, individuals and countries that are going to participate have to move rapidly. It will be an era not where the big will beat the small, or necessarily the rich beat the poor: it will be an era where the fast beat the slow.

Many people don't realize, but the United States, for example, has already moved into the second Industrial Revolution, the Internet Revolution. During the first Industrial Revolution, capital investment was primarily in machinery and factories, and at the time less than ten percent of expenditure went to information systems, or technology, if you will. But as this has begun to change, and as we move into the Internet Revolution, whether we realize it or not, half of our capital investment is now in high technology. And while the concept is simple enough, information systems used to be an area that very few – including government leaders and business leaders – understood. It was viewed as an expense item in government or business. And then people began to realize that this could be a productivity tool, determining which companies grew and had the best profitability. And now, in the past 12 to 18 months, business leaders are beginning to understand that this is the competitive advantage for the future.

Information systems will determine the productivity, growth and survival of companies. And, as this occurs, the role of the technical people who make this happen, is changing dramatically. When I talk to technical audiences, such as the one I'll be addressing later this week, and I ask "How many of you information system professionals think that your business and government leaders get it?," only about five to 25 percent of those present raise their hand.

Much has changed in the last 12 months, and now I ask not only the question, "How many of you think your business and government leaders get it?," but also the reverse question, "How many of your business information systems can deliver on the promise and determine the future of your company?" The point that I am making is that the focus has shifted from a technology interest to the interest of business leaders and government leaders around the world. Last week alone, I went to five cities in the United States and in those five cities had over 25 meetings with 4,200 business leaders, many of whom came to understand that this is the second Industrial Revolution and that their companies have to change.

When I talk to President Jiang Zemin of China, President Lee of Taiwan, Prime Minister Goh of Singapore, Prime Minister Mahathir of Malaysia, Prime Minister Howard of Australia, Mr. Kim in Korea, Mr. Blair in the United Kingdom or President Clinton of the United States . . . they all understand that a large part of their country's success is now going to be dependant on what role they play today. They understand the correlation between a healthy economy built on high technology and productivity for all their businesses, which in turn means job preservation and creation. So what you are now seeing is business and government leaders around the world "getting it." At the same time you are also seeing the technology change the way we do everything in life: it will change the way we work, live, learn and play in ways that we are just beginning to discover.

Very often, in trying to help those less fortunate, we do a one-time event and then it's over. In the same way that the Internet is revolutionizing business, it also has a way of revolutionizing good works, from the United Nations right down to the ways in which we tackle relief efforts or charitable donations. And instead of engaging in one-time events, with artists and producers working in isolation, you suddenly find leaders in the United Nations and the business community asking how to work together. Suddenly people are coming together and using the Internet in an effective way to encourage people to continually direct their efforts into increasing improvement of the world infrastructure.

Let me roll the video to give you an idea of how people are grasping the power of this technology.

The Internet has almost unlimited potential for combining data, voice and video and for changing every aspect of our lives. It has a chance to really catch the world in a transition and, as any business leader will tell you, when you catch a transition, that is when you have a chance to gain or lose market share from a business perspective or to change people's lives. Transitions can occur economically, they can occur in product transitions, going from one generation of telecommunication equipment to the next, they can occur with technology transitions, when data, voice and video comes to a single network. They can change as customer purchasing power evolves, or they change because business models are developed. And whenever that happens, it allows for a realignment of business for the world order.

We are in the middle of a transition now. We are literally transitioning to where the infrastructure that we all used to define in terms of voice and telephones and access is now about convergence. The majority of the loads on the network will be data, and as that occurs it will change everything. Basically, you will look out five to ten years from now and 90 to 95 percent of the loads on the network will be data. As this occurs, voice will commoditize and be bundled to produce a development that many people in this room have challenged me on: voice and large data networks will be free. We are basically talking about an infrastructure of the past versus that of the future.

And I'm going to throw out a challenge to the group. I do not know why any developing country is today building up infrastructure that will only allow for telephony. Why not build out an infrastructure that allows for data, voice and video? Why lag behind a generation? And with such limited economic capability in terms of being able to spend money, why build on an infrastructure that is obsolete as soon as you build it out?

Circuits are dinosaurs. The same is true of PBXs, and we're going to do a demonstration here in a moment that will really bring that home to us, in terms of the architecture.

I want to invite up Jim, a member of my team. Jim, it often happens that when one does a demonstration in front of such a distinguished group, the demonstration goes down. That makes me nervous. Are you nervous?

I'm not too nervous today, John.

Tell us what we're going to do. In the past, we've done 80 of these demonstrations. We have shown that there is no difference between a circuit phone and an Internet phone. In fact, when people try our Internet phone, they usually think it is a traditional voice phone. So the quality is the same or even better. Tell us what you're going to show us today.

OK, John. Well, I think you will get an idea of the quality of the phones today. But one of the important things we're going to show you is how you can connect a new style of telephone, an IP telephone, right into the same network that you've connected your computer to, or direct into the data network.

So, as Jim gets that set up, what we are saying is that there will be one network infrastructure – even in the wide area, to your schools, your libraries or your home. And that infrastructure will carry data, voice and video, combined together. We're going to show you how you can now use the same infrastructure that has traditionally been just for data, and we're going to show you what it's like when you add a phone to it.

Well, John, this computer that we have here is connected into the data network in the wall here. And just to show you that we have a live data connection I am going to go ahead and click on a couple of Web pages here and you'll see that we are, indeed, receiving traffic over the system. Now, what I'm going to do is disconnect the computer system here and plug in this new IP telephone. Now, this telephone doesn't have a standard telephone connector but an Internet connector, and it will plug right into the same Internet jack that the computer plugged into. The phone will now log into the network. It takes just a minute to initialize. And there we have a dial tone on the network. So, John, why don't you go ahead and give me a call on my extension over here.

Allright, Jim, the quality sounds good and I'm feeling better about the demo staying up.

Thank you, John. Allright, so you can hear the quality of the phone call. It's a very good quality, and this is a voice-over IP phone call, travelling over the data network.

Thank you, Jim. What are you going to show us next?

Well, I just want to show you that, even though we've used our Internet connection here for the telephone, I can still plug the PC into the back of the telephone, into the extra port here, and, at the same time that we're talking over the telephone, I can click on another web page and you'll see that we are getting both data and voice at the same time, over the same circuit.

So, you've shown the ability to share that information. How can it work together, Jim?

OK, the next thing I would like to show you is how, once we have integrated the voice and data networks together, we can enable and run a whole new set of applications. So, I'm going to go to another web page and log in. This is the Cisco directory page. This is a page that we use inside our company to find people and to look up their phone number and address information. I'm going to go ahead and do a search on your name, John.

OK, I've always wondered what information the company has about me. I'm not going to embarrassed, am I, Jim?

No, I don't think so, John. So, here I have all of your information, your phone number, your address. But, instead of dialing the telephone with the telephone number, what I can do is simply click on your telephone number and what will happen when I click is that my phone will ring, and once I pick up my phone...

Jim, are you there?

Here I am, John.

So you're showing us, basically, very simple applications combining data and voice. We will add video to that in the future, and this is just the beginning, is it not?

That's right. The last thing I want to show here in the integrated applications is unified messaging. With unified messaging we can combine the voice and data networks to allow us to receive voice mail messages inside of a web page or as e-mail attachments. So, John, if you would go ahead and call me again, and this time I am going to let the phone go over to voice mail.

Jim, I'm used to you doing that periodically when you know that I'm calling!

We'll go ahead and have you leave me a voice mail, and then once you've left me the voice mail we'll go to a web page and check it.

Jim, this is John Chambers. I just wanted to congratulate you on how well the demonstration went at TELECOM-99. I am thinking you deserve a raise this year. Perhaps two or three percent – we want to keep inflation under control. Maybe a promotion in three to five years from now.

Allright John. What I'm going to go ahead and do is log into the unified messaging web page here. I'll click on log in, and now what we'll see is my voice messages coming up on the web page. We look at the last message here at the bottom, and this is a message from John Chambers. It was sent on Monday at 1004 and I can actually go ahead and click on that message and we'll listen to it through the PC. Let's see how that works. We'll just click here to listen....I was thinking that maybe that promotion may be just a little sooner!

I like people who dream, Jim! Go ahead.

Well, let's assume for a minute that I did get promoted, and I needed to move from one office to another. With an IP-based telephone, all I have to do is unplug the phone from the network and carry it to my new office. We'll go ahead and plug it in here. And what will happen is that the phone will automatically log back into the network just as if I had taken the PC with me and brought it to this station. The phone will log in and get an IP address, and it will retain my identity. So, I could take the phone from one office to another. I could take it to my home. I could take it to anywhere that there's an IP connection and my phone number will follow me, and we'll just hope it works here. We'll try it one more time. And there it is.

Jim, well done. Thank you very much.

In the past it would have taken a lot of people to make that change, often over several days. The new technology will be taken up first within the business environment, and over time within the home. In short, it changes everything. When people talk about the Internet they think of the transport, but it's really the applications and the end-user destination that count. So, think of it as a highway system that gets you an end-user location called applications.

People wonder about Cisco. We are the most profitable, fastest-growing company in history. We are the number five company in the world, with market capitalization of $220 billion dollars. We're number one and number two in 16 of 20 product areas in terms of market share. What's made us effective is how we use this technology. We're the most advanced users in the world. We handled a third of the world's total e-commerce three years ago. We knew when we saw the forecast of e-commerce of $2 billion by the year 2003 that it was off by at least five to tenfold. And it took us two years to convince the market of that.

We also do most of our customer support over the Internet. When a customer's got a problem, instead of talking to a human being, which is very expensive, he or she now talks to web-based applications. That saves me $600 million a year, with 3,000 people who, instead of answering customer questions, are now working on developing new products, which allows me to move faster versus my competition.

In terms of our employees, 60 percent of applications come in over the Internet; we do travel expenses over the Internet – they get paid in two days. The employees are more satisfied. I have two people supporting 20,000 for travel expenses thanks to the automated approach.

Everything is changing in our company. We have 34 manufacturing plants worldwide. It doesn't matter to me where they are. Only two of them I own. The other 32 interact with our systems and inventory over the Internet and look like one virtual plant to our customers. The result is a 75 percent reduction in lead times. What that means is that we are much more competitive than our competitors are able to be.

At the end of a quarter we can close our books, not in two weeks like most companies, but in one day, and by a year from now we'll be able to close them in one hour at any point in time we want. That sounds exciting to a CFO, but what it means to the average employee is that you have the data and format, your employees can make decisions, and you can empower down in your organization to change the way they work.

In short, businesses that use these Internet applications will pull away very rapidly from those that do not. Or, to put it a different way, the second Industrial Revolution will result in the fast beating the slow. What you're talking about is also occurring with service providers.

So, what you will see is company infrastructure focussing on lowering the cost through many of the applications I have just talked about. The voice side of service providers' operations will, over the next couple of years, fall from 95 percent of their business to way under 50 percent, and maybe as low as five percent. There will be movement in the new services, and those that do that effectively will pull away from those that do not. Timing is the key. If you're too early, you've got a problem. But if you're too late, you get left behind.

Here's a chart which two years ago I thought would cover a ten-year period. I said that, basically, data communication companies would combine, coming down to five or ten worldwide. This has occurred very quickly, whereas at that time one could only just see it starting to occur. We said that there would be a move toward all-in-one data, voice and video networks, and we thought that that would happen over a decade. However, most of the progressive service providers and most of the enterprise accounts are already looking at it as a two-year or five-year phenomenon, not as a decade phenomenon.

Once it was clear that there was going to be sharing on a global basis, there was bound to be consolidation among the phone companies, as I pointed out two years ago. And that is now occurring. Then we said that as all-in-one networks came into being, voice would become such a small part of the data network that it would commoditize, be bundled and be free. And you can imagine me standing in front of 275 of the world's largest telecommunication players, in March of 1998, and explaining to them that where 95 percent of their revenue was coming from was going to commoditize and, over time, become free. I was probably not the most popular speaker at that session.

Next you will begin to see data and voice telecommunication manufacturers combining and then you're going to see every electronic device attached to the network beyond a given point in time. So, the telephones and PCs that access the network today will over time no longer be the primary vehicle you access the network from. I thought that that was a ten-year vision. It's happened in two years.

You already have the people who make refrigerators, microwaves and pianos looking into how to connect the next generation of their products to the Internet. And the point that I am making is the rapidity of change. Cisco has done the same thing. Every time our customers changed the way in which they bought from us, we changed our structural organization. We changed our organization seven times in one decade. Each such change would have taken the automotive industry, for example, several decades. And the point I am making is that the speed at which many of us now think that things are going to happen is going to be greatly surpassed.

Market capitalization is nothing more than the financial community's expectation of your future revenues and profits. We were fortunate enough on 1 October 1994 to have a market capitalization of $7 billion versus the $11 billion of our top seven competitors. See what happened in five years. The fast will beat the slow. If you move quickly and your competitors move a little bit slower than you, you pull away.

You might be thinking: "John, that's only going to happen in your industry." Well, let's talk about other industries. Let's talk about the entertainment industry, let's talk about the financial markets with Merrill Lynch, let's talk Barnes and Noble that did a tremendous job on books. And look what has happened in just three years. Again, the point I am making is rapidity of change. This will happen in the service provider market as well. It will also happen in each country's market. What I am saying is that we are in the middle of a revolution.

The message, however, isn't network, network, network. It's taking the right applications for the right time, given the goals that you have and the right country locations. If you're too early with applications such as home banking and video on demand, you have an infrastructure that's non-competitive. But if you're too late, to use an American term, you get 'Amazoned' or you get 'Cisco'd' or you get 'Dell'd.' So it's picking the right applications at the right time and understanding where you are in your global economy.

Looking ahead five years is almost impossible to do, but let me take a little bit of a risk. Almost every electronic device five years from now will have a network connection. Whether you use it or not will be your decision. Education will change forever. Most education then will be available over the Internet, and we will, over the subsequent decade, learn how to use it effectively. Time and distance, as Tony said in his presentation, will no longer be factors.

In the Industrial Revolution of the past 200 years, people moved from an agricultural to an urban society and often moved from one country to another to find jobs. In the Internet Revolution, the jobs will automatically go to where the best-educated workforce is, regardless of which country they're located in, as long as the infrastructure is there. So, you're talking about a mobile economy as opposed to a mobile workforce.

What excites me the most is the leveling of the playing field not only between companies but also between countries. It won't be the big that will beat the small and it won't be the small that will beat the big: it will be the fast that will beat the slow. So, we all have a chance to participate in the second Industrial Revolution. Many people don't grasp how fast it's occurring.

We commissioned a study with the University of Texas and asked them to show us how much the Industrial Revolution had changed the United States in the last five years. They segmented the revolution into about 40 categories ranging from infrastructure all the way to e-commerce. We talked about how much revenue was being generated by that, and how many jobs it had created in five years – 1.2 million jobs, $300 million dollars in revenue, up from five million. You might not think much about that, but that's what it took the automotive industry 100 years to do in the United States. It's what it took the telecommunication industry 100 years to do. Let's compare these numbers to the gross domestic product. Let's assume it will only grow at a quarter of that speed over the next decade. And let's assume the $300 billion is off by $100 billion, and that it's only $200 billion. Half of the gross domestic product in the United States would be directly tied to the Internet Revolution in a decade.

So, what we're talking about is change. It will change businesses and governments forever. The competitive advantage of the future will be the Internet. I don't need to explain that to Senior Minister Lee or Prime Minister Goh in Singapore. They already have the best education system in the world and they're building out the infrastructure of the future. They are not only connecting every single school and business, as I said earlier, but every house. They are preparing for the second Industrial Revolution.

Being customer-driven used to be a management style – it will now be a requirement, because if you haven't got your finger on the pulse of your customer, and they change what's important in terms of buying, you get commoditized and left behind. Employees will be empowered. Whenever you ask business leaders how many of them believe in empowerment, everyone will raise their hand. And then you ask them, "Does that mean you're going to give them a free hand?," the answer is "no." Empowerment only works if the employees know where the organization is going and if they have access to the kind of decision-making that used to be handled by staff much higher up in the organization.

Change will have to be part of your culture. It's hard for every one of us to change. It's hard for the United Nations to change. But if you don't build a culture that thrives on change, you'll become obsolete and get left behind. This is true of every business in the world and I would argue every government and every organization. These changes will occur at an Internet pace. What we call dog years are calendar years: one year is seven years in a dog's life, one year is seven years in the Internet's life.

Everything is going to change: every business, every country. Business leaders, particularly in the industrialized countries, are getting it very rapidly, but so are government leaders. And my question as I look around is "Are you ready?" Is the educational system in your country preparing your young people for where the jobs will be in the future, or is it training them for where they used to be in the past? Have you built an infrastructure and created the competition in the infrastructure that will allow for data, voice and video combined to drive down prices? Do your business leaders understand where things are going and do your government leaders understand? This is the message that I deliver whenever I travel around the world. And the challenge that I leave with you today is "Are you ready?"

Thank you very much.

I should like to thank Mr. John Chambers, President and Chief Executive Officer of Cisco Systems, for his excellent presentation. This brings us to the end of our presentations for this morning. What the speakers have given us in this opening session is a very rich and deep exposé of the importance and magnitude of some of the aspects of the current communications revolution. They have dealt with a body of issues in a very decisive and instructive manner. I am sure you will agree with me that what has been presented here this morning will give us food for thought and be very useful to us in the other sessions of the Development Summit which are going to be held over the next few days. But the challenge to all of us remains that of determining how this communications revolution involves and benefits the majority of the world's population. Having posed this question, it is now my pleasure to declare the opening session of the Development Summit closed.

TDS.1

Monday, 11 October 1999	

TELECOM Development Symposium (TDS)

"NEW OPPORTUNITIES IN DEVELOPING COUNTRIES"

TDS.1	Centre of Excellence Concept

Chairperson:	**Mr. Pierre GAGNÉ,** *Chief,* Policies, Strategies and Financing (PSF) (ITU-BDT)
Moderator	**Mr. Jaime HERRERA,** *Head,* HRD/HRM (ITU/BDT)
Keynote Speakers	**H.E. Ms. Claudia de Francisco ZAMBRANO,** *Minister of Communications* (Colombia)
	Mr. David MELLOR, *President,* Telecommunication Academy (United Kingdom)
Panelists	**Mr. Istvan FODOR,** *President,* Ericsson (Hungary)
	Prof. Madhukar PITKE, *Vice Chairman,* Axes Technologies (India)
	Mr. Yoshimi FUKUHARA, *General Manager* NTT-ME Information Xing, Inc. (Japan)
	Prof. V. Kithsiri SAMARNAYAKE, *Chairman,* Computer & Information Technology (Council of Sri Lanka (CINTEC) (Sri Lanka)
Rapporteur/Right of Response	**Mr. Mario MANIEWICZ,** *Regional Officer in Human Resources Management and Development,* Americas Division (ITU/BDT)

TDS.1

Monday, 11 October 1999	

TELECOM Development Symposium (TDS)

"NEW OPPORTUNITIES IN DEVELOPING COUNTRIES"

TDS.1	Centre of Excellence Concept

The Centre of Excellence is an ITU initiative directed to the developing world but it also includes the participation of all types of partners, universities, training institutes, private companies and operators, governments, etc. – interested in participating jointly with ITU in the development process for developing countries. With the support of TELECOM surplus, the first centres were created in Dakar (Senegal) and AFRALTI in Nairobi (Kenya). Soon the ITU will also have Centres for Excellence in Latin America and Asia.

The panel will provide the opportunity to discuss the Centre of Excellence concept, as a mechanism for the provision of high-level training and assistance to senior and top authorities in all aspects of telecommunication sector reform, regulation, new technologies and new services, as well as modern management techniques. The mechanism is based on partnerships, the use of networks for working purposes and the participation of both private and public telecommunication organizations.

The Centre of Excellence concept was reviewed as a mechanism to provide high-level training to senior level officials and top managers in the telecommunication sector, in key areas such as : telecom policy making, telecom regulation, new technologies and corporate management.

Although this ITU initiative is mainly directed to developing countries, it focuses partnership with all interested bodies from the developing and developed world, from the public and private sectors, from the industry and the academia, etc. ITU has assigned a budget from the TELECOM surplus funds in order to provide "seed money" to support the development of 4 Centres of Excellence: 2 in Africa, one in Asia-Pacific and one in the Americas.

The uniqueness of this project was pointed out in view of the following factors:

- Target audience (senior level officials from both the public and private sectors)
- Focus areas (policy, regulation, new technology and services, and modern management techniques)
- Seed money concept
- Partnership approach

The panelists stressed the importance of updating top level official's knowledge as a key element for national policy-makers and regulators to be able to accelerate rather than slow down the development of their national telecommunication sectors. The new commercial and technological panorama obliges national authorities to react with promptness to the market challenges.

For the Centres of Excellence to fulfill their objectives they should involve the participation of Governments, regulators, private operators, technology and equipment providers, universities, etc., combining these national components and integrating them in the regional context. The broadest possible participation is fundamental for the Centre of Excellence success.

It was a consensus that Human Resources is the most valuable asset in telecom organisations. Training and education will potentiate their performance and productivity. The Centre of Excellence initiative should be a way to assure that they receive such training from the best provider in a timely manner.

The Centre of Excellence should not limit itself to disseminate existing courses/content only by coordinating with established Training Centres and Educational Institutions, it should also promote the development of new products/content, based on the synergy to be obtained from a collaborative effort of several partners.

The Centre of Excellence should help build local expertise, not only academic knowledge. Partnership would help set up that expertise, via sharing of experts, experiences and information. For this to be useful, a proper balance should be established between knowledge transfer from the developed to the developing world and the development of local know-how on aspects that address the local needs and specific conditions of the intended beneficiary countries (i.e. programs focusing on universal access, rural connectivity etc).

TDS.2

Monday, 11 October 1999	

TDS.2	Settlement and Accounting Rate Reform

Chairperson:	**Dr. Michael A. CALVANO,** *Area Representative,* Asia & Pacific (ITU/BDT)
Moderator	**Dr. Tim KELLY,** *Head, Operations Analysis,* Strategic Planning Unit (SPU/ITU)
Keynote Speaker	**Mr. Tsunikazu MATSUDAIRA,** *Managing Director,* International Affairs Department, KDD Corporation and *Chairman,* ITU-T Study Group 3 (Japan)
Panelists	**Mr. Greg STAPLE,** *President,* TeleGeography Inc., (USA)
	Ms. Kathryn O'BRIEN, *Deputy Division Chief, Telecommunication Division,* International Bureau, FCC (USA)
	Mr. Maurice GHAZAL, *Chairman* Global Network System, New Technologies and New Services (Lebanon)
Rapporteur/Right of Response	**Ms. Doreen MARTIN-BOGDAN,** *Regulatory Officer* (ITU/BDT)

TDS.2

Monday, 11 October 1999	

TDS.2	Settlement and Accounting Rate Reform

This reform is a priority issue for almost all developing countries. The panel will provide the opportunity to discuss the problem of cost-based pricing, the status of work being conducted by ITU-T Study Group 3, the focus group and the regional tariff groups, the introduction of analytical cost accounting systems.

The session on settlement and accounting rate reform highlighted the problems of cost-based pricing, the status of work being conducted by ITU-T Study Group 3, it's Focus Group and regional tariff groups, and the introduction of analytical cost accounting systems.

Ambassador Hill chaired the session and emphasized the opportunity to move forward through dialogue and multilateral agreement. Mr. Matsudaira made the keynote address entitled "Goodbye accounting rates". He argued that the present system is no longer sustainable due to the changing nature of telecommunications. He summarized the events which have taken place in this area starting with the International Telecommunication Regulations; the work of ITU-T Study Group 3 including Recommendations D.140 and D.150; the FCC's Benchmarks; the ITU Policy Forum and the resulting Focus Group; Annex E to Recommendation D.140 and the upcoming meeting of Study Group 3 in December 1999.

Tim Kelly, in his role as moderator, raised a number of provocative questions for the other panelists under the heading of "Preparing for a world without accounting rates". He questioned what is true level of variation between costs between developing and developed countries, and what will be the likely impact of the Internet.

Greg Staple stressed the importance of understanding the underlying push of technology and that the increase in capacity will lead to a decrease in costs. Mr. Ghazal discussed the perspective of Lebanon and said that the Arab States are struggling to meet the recommendations of the Focus Group by 2000/2001.

Mr. Njie addressed the problem from an African perspective and argued that Africans have been used as a scapegoat. On the subject of the Internet, Njie felt that Africans must not lose that battle as they lost the battle on Accounting and Settlements.

Ambassador Hill focused the debate on three main drivers in the accounting rate reform: technology, policy reforms, and market demand.

A lively debate ensued with questions from the floor on what to do when your not being paid for transit traffic, how to determine the costs for termination charges, and whether a mechanism should be established in the ITU to certify if calculated costs are appropriate or not.

The questions from the panelists and the floor were summarized and submitted to the working group for further discussion. (See attachment for the summary of questions.)

Attachment

Summary of questions raised:

- How fast should settlement rates come down for developing countries? How should developing countries prepare for the changing market? How can operators prepare for lower revenues from international service?

- What is the impact of the Internet on the settlement process? What are the implications for developing countries?

- What role can the ITU Centers of Excellence play in accounting and settlement rate reform? (Reference: question from Haiti, struggling with the technologies of yesterday)

- Termination charges: To what extent does the cost of terminating international calls vary between developed and developing countries? What causes the variation?

One of the conditions for introducing termination charges is to achieve cost orientated accounting rates. A way of quickly introducing the termination charge is to establish a Unit within the ITU that would certify whether calculated costs are appropriate or not. Do you think that the establishment of such a Unit would be realistic and useful for the reform of accounting rates? If so, what kind of Unit (i.e., permanent, temporary)?

- *Transit arrangements*: What is the alternative way to implement the recommendation on transitional arrangements of Study Group 3 if the US refuse to approve it? Can SG 3 develop an MOU and apply this recommendation between those that have signed it?

- *Transit calls*: There are problems with transit calls and discriminatory pricing practiced by some transit administrations. What is the position of the FCC on publishing transit rates? What can countries do about transit traffic problems when those transiting don't pay or pay late? (Reference: question from Pakistan)

- *Refiling*: What is the correct way of using efficiently the international network and the appropriate way of handling the traffic?

- *Competition*: Would the introduction of competition reduce rates too dramatically, and would this be sustainable?

Universal service – How can it be guaranteed? Who ensures the rights of citizens?

TDS.3

Monday, 11 October 1999	

TDS.3	Community Access

Chairperson:	**Professor Heather HUDSON,** *Professor and Director,* Telecommunications Management and Policy Programme, McLaren School of Business, University of San Francisco (USA)
Keynote Speaker	**Mr. Daniel ESPITIA,** *Vice-President,* Global Strategy, FINSTRUCT (South Africa)
Panelists	**Dr. Clement DZIDONU,** *Executive Director,* International Centre for Internet and Telecom Technology (Ghana)
	Mr. P. C. GUPTA, *General Manager (Development),* Gujarat Telecom Circle, Department of Telecommunications (India)
	Prof. Kenji SAGA, *Professor,* Faculty of International Relations, Asia University (Japan)
Rapporteur/Right of Response	**Ms. Paula UIMONEN,** *Researcher,* Department of Social Anthropology, Stockholm University (Sweden)

TDS.3

Monday, 11 October 1999	

TDS.3	Community Access

Having promoted the development of rural telecommunications and the concept of multipurpose community telecentres (MCT) for many years, BDT is considered a leader in this field. However, it must continue sharing experiences with the delegates of developing countries, in order to find possible ways to implement the concept in their respective countries and regions.

The idea of this panel is to give an opportunity to discuss examples of MCTs in rural areas, the role of the community in creating a successful MCT, the necessary funding and its duration, what it takes to make MCTs sustainable, the management profiles needed to make MCTs successful, the benefits and spin-offs for the community (impact on social, economic and cultural development), technology options, and so forth.

"Information is the key to all doors". As Professor Hudson recalled in her opening remarks, this statement by an Acacia collaborator in Timbuktu captured the need for information in communities around the world – a need that community access centres seek to address. However, providing adequate services requires a multifaceted approach, taking into account relevant services as well as adequate types of public access points. Regardless of approach, Professor Hudson underlined the need to develop sustainable models and identify appropriate policy criteria relating to services, tariffs, reliability and incentives.

Sharing the experiences of the South African Universal Service Agency (USA), Daniel Espitia provided a detailed account of the issues to be addressed. For a start, it was important to define clearly what a telecentre is, from both a technology/supply-oriented and a people/community-oriented perspective. This included defining the type of services to be provided and how this was to be done, taking into account existing needs and the technical and human resources required to address them. It was also important to identify a strategic role for the agency entrusted with the provision of community access. In the case of USA, a separation between policy and implementation had proved useful, with the agency focusing on the former while outsourcing the latter. Over the years, several models had been developed for community access, ranging from the one-person teleshop or mini-telecentre that entrepreneurs could operate, at a cost of USD 1000 and 3000 respectively, to telehubs and rural telecentre cooperatives. Lastly, given the resources required, Espitia noted the importance of involving the private sector. In addition, he underlined that a less hierarchical organizational structure helped to maximize existing resources. In closing, he noted that regulatory incentives had resulted in a paradigm shift in rural telephony, with providers now seeking to open up new markets to expand their customer base.

Drawing on a feasibility study in Gujarat, India, Mr. Gupta pinpointed issues relating to the provision of services in isolated regions. Although rural telecommunications were characterized by high cost and low revenue, the study showed the existence of disposable income and suggested a return of 19 percent on investment within five years, thanks to the large customer base. However, despite the growing customer base, Mr. Gupta emphasized the importance of region-specific applications to deliver services that customers would be willing to pay for, such as health care, education and trade.

Based on Asian cases, Professor Saga outlined a number of issues that needed to be addressed through appropriate policies. As the Indonesian Nusantara 21 experience indicated, there was a growing need for ICT services in rural areas. Nonetheless, problems of financing, technology transfer and human resource development (including management) needed to be addressed. He pointed out that communication and information-sharing mechanisms were crucial to overcoming those obstacles. He therefore recommended the establishment of linkages between different international organizations and centres of excellence, and the coordination of related parties through virtual means. In addition, he encouraged manufacturers to carry out more research and development on rural infrastructure. Finally, he asked all related parties to join the Case Library activities on the Internet organized by Focus Group 7 of ITU-D.

In the ensuing discussions, participants shared experiences from a variety of countries, including Nepal, India, Gambia, Mali and Haiti. Issues brought to the fore ranged from investment costs and tariff systems to problems of collecting revenue and the need for information about suitable models.

TDS.4

Monday, 11 October 1999	

TDS.4	Telecoms for Teleapplications
Chairperson:	**H.E. Mr. Purna B. KHADKA**, *Minister*, for Communications and Home Affairs Ministry of Communications & Home Affairs (Nepal)
Moderator	**Mr. Craig MATTHEW,** *Director*, Creative Communications Group (United Kingdom)
Keynote Speaker	**Monsieur Ahmed LAMRINI,** *Secrétaire général,* Représente Monsieur le Ministre de l'Education Nationale, Ministère de l'Education Nationale (Morocco)
	Dr. Salah MANDIL, *Director-Advisor*, Health Informatics and Telematics (MIT) (WHO)
Panelists	**Dr. Isao NAKAJIMA**, *Associate Professor*, Emergency Medical Service Centre, Tokai University School of Medicine (Japan)
	Mr. Muhammad JAVED, *Chairman***,** Pakistan Telecommunications Authority (Pakistan)
	Mr. Renato CORTINOVIS, *Officer*, Human Resources Development (HRD) (ITU/BDT)
	Mr. Emiel DE HERT, European Commission, DGXIII-F (Belgium)
Rapporteur/Right of Response	**Ms. Barbara WILSON,** *Officer*, Human Resources Development (HRD) (ITU/BDT)

TDS.4

Monday, 11 October 1999	

TDS.4	Telecoms for Teleapplications

Having promoted the combined use of information technologies and telecommunication facilities for distance working and distance training for many years, the BDT is also considered a leader in this field. New multimedia applications are now easily available in developing countries, and the distance-training approach is maturing towards teletraining for telecommunication organizations and tele-education for communities in general. The ITU has also being promoting the concept of telemedicine to improve health-care services in rural areas using the available telecommunication and multimedia facilities.

This panel will provide the opportunity to discuss such applications, and how they may be incorporated as services of the multipurpose community telecentres.

Consideration will be given to the ways in which industrialized organizations may establish contact with developing countries in order to provide the equipment required and set-up the infrastructure to deliver the services in question.

The meeting was full for this panel on teleapplications, and all delegates showed keen interest, convinced that telecommunications has a critical role to play outside its immediate sector today. In a world where a gap exists between industrialised and developing countries, where poverty and illiteracy abound, the panel discussed the contribution and role which telecommunications can play to improve this reality, not forgetting those millions of people who live outside the cash economy. Immediate applications which were specifically addressed were tele-education and telemedicine/health.

The same week that the international community celebrates the birth of the 6 billionth person, it is important to remember that 120 million children are out of school and that 800 million people are illiterate. The speaker representing **tele-education** presented the value, objectives, and hopes which are placed on interactive education. When numbers of people to be trained and educated are substantial; when making education more widespread and available to segments of the population hereto less favoured; when the concern is to improve the quality of education as well as its management; rationalising costs, etc., then tele-education is most definitely a practical option.

The presentation and discussions not only discussed and emphasised the contributions this application can make to education and social development, but it also included the steps required to introduce such a strategy: the setting up of the main centre, the many regional sites, training the educators who will produce the content and broadcasting aspects, etc. It is a complex and exciting project, meshing technical resources, pedagogical functions as well as institutional measures. It was also very interesting to hear the role that the infrastructure for tele-education can take in providing information networks in the provinces for the use of other Ministries, in the strive for further national development. It is normal that such major projects begin with assisting rural areas; and the keynote speaker emphasised his Government's commitment to provide education and opportunities, particularly for young girls, from the rural areas.

One cannot discuss teleapplications without mentioning the extraordinary advantages and impact that telecommunications can make to the health sector. ITU and WHO have been collaborating since 1991, and the WHO representative presented some of the advances made in **Telemedicine**. There has been great progress made in linking the provider of care to the beneficiary of care over a distance; and there is a feeling of relief that medical and health care can now be provided to millions of people who never had access. Consider diagnosis in pathology, radiology; and ultrasound combined with tele-education… Telemedicine has become the trigger for a new paradigm of health services, the new relationship between the provider and receiver of services. To those of us in telecommunica-tions and the medical profession, we also realise that this link is not necessarily constrained by national frontiers, as various cross-border agreements will attest. Also discussed were: the healthcare reform being undergone in most countries; health information; the industry itself which is moving so very quickly; telecom tariffs and the fact that they are coming down; cross-border trade; legal considerations; and that telemedicine can help rationalise resources. Also discussed were the technical considerations of introducing and installing telemedicine: the characteristics for the telecom design, recommendations as to the type of networks; image quality, etc.; as well as the attitudinal ones – for example, training doctors and health care professionals to work in this very different mode and environment. Suffice it to say, there is a great deal of experience now available from experts who have lived through these initial stages of introducing telemedicine; and these experts are pleased to share their practical experience.

Though future applications involving telecommunications will undoubtedly be introduced before the next TELECOM, priority was given to tele-education and telemedicine during this panel. Most delegates from developing countries can see the enormous and immediate benefits to be derived from these two applications, especially in the areas of quality and reduced costs. We acknowledge that telecommunications has become the natural meeting point of the private, public and educational organisations so that vital services can be provided to more people. However, we also recognise that more partners are needed to provide and sustain these services; and hopefully great progress will be seen in this area before the next Development Summit.

DEV.4

Wednesday, 13 October 1999	

DEV.4	Internet in Developing Countries

Chairperson

Mr. Bruno LANVIN,
Head,
Electronic Commerce (UNCTAD)

Moderator

Dr. Tim KELLY,
Head, Operations Analysis,
Strategic Planning Unit (SPU/ITU)

Keynote Speaker

H.E. Dr. Mai Liem TRUC,
Secretary General,
Department of Posts and Telecommunications
(Viet Nam (Socialist Rep. of)

Panelists

Mr. Shashank KANSAL,
Sr. Vice President,
WorldLink Communications Pvt. Ltd. (Nepal)

Mr. Ayisi MAKATIANI,
Chief Executive Officer,
Africa Online Holdings Ltd, (Kenya)

Commentators

Dr. Hans D'ORVILLE,
Director IT for Development
(UNDP)

Mr. Danilo PIAGESSI,
Chief,
Information for Technology Development Unit,
Inter-American Development Bank (USA)

DEV.4

Wednesday, 13 October 1999	

DEV.4	Internet in Developing Countries

The advent of the Internet has been variously described as being as important for society as the development of the personal computer, the telephone or even the printing press. In theory, the Internet can widen and enhance access in developing nations because it offers a relatively cheap, versatile and technically efficient service that complements standard telephony. In fact, Internet access is viewed by many as a component of a re-defined "universal service". Furthermore, the Internet can allow businesses from developing nations to "leapfrog" into the development mainstream because Internet commerce will allow them to sell their wares and their services directly to customers. The advent of the Internet has challenged many well-established economic and business models in telecommunications, broadcasting and many other service activities. It also offers considerable promise in facilitating the delivery of basic services, such as health and education, which are unevenly distributed at present.

How is such an array of phenomena likely to affect developing countries and their integration into the emerging "global information economy". This session explores the current and likely impact of Internet development in a number of areas of social and economic concern to developing countries, ranging from some unique infrastructure challenges to pricing issues as well as services to be delivered over the Internet.

Dr. Salah MANDIL

Good morning ladies and gentlemen, and our apologies for starting a little late. My name is Salah Mandil from the World Health Organization and I am just helping to kick off this session. This is the fourth session of the TELECOM 99 Telecommunication Development Symposium entitled "Internet in developing countries". I think there is no doubt about the great strength of the Internet; there is no doubt about the fact that it is already beginning to influence a lot of aspects in all walks of life in today's world, and indeed has great potential to exert even more influence. It would not be an exaggeration to say that this TELECOM 99 is primarily about the Internet: how to fathom its potential; how to deal with the preparations for it, its uses, the technology required for it regulating it, and so on. Practically every keynote speaker has spoken about that aspect and the message has so far been very clear: the Internet – appreciate it, join in, use it. In brief, seek to influence it and seek to be influenced by it.

The question that we have to address is where do the developing countries stand in the midst of all of this? We are of the opinion that technology should not be considered a luxury in developing countries, in the industrially poor countries. It is they who need it in order to be able to move ahead and join in on the bandwagon of development. So this session has assembled for you some very prominent panellists – speakers and Chairperson – in order to give a better picture about the situation of Internet in developing countries, and give pointers to where it is heading or should be headed. It is my privilege to introduce to you the Chairperson of this session, Dr. Bruno Lanvin, who is a colleague from the United Nations and a friend, and a specialist in electronic commerce, international trade and telecommunications. He is currently responsible for the analogies negotiations related to information, telecommunications, technology and trade with a special focus on services and he is a well-known advisor to governments, the Member States of UNCTAD in the area of regulations on trade policy and national strategies. His experience in this field and in particular regarding the Internet is vast. He was the Chairperson of the Internet Society chapter here in Geneva during which time its membership rose exponentially from 50 to 490. He was the world coordinator for the Trade Point Programme, which is one of the largest, if not the largest, website on the Internet today, and he was the General Manager of "GET UP" which is a big part of the conference that was held in Lyon for the promotion of global electronic commerce. It is my pleasure to hand over the responsibility of this session to Dr. Bruno Lanvin.

Mr. Bruno LANVIN

Thank you very much and welcome to this session on "Internet in developing countries". We have a very exciting session ahead of us and a very power-intensive panel and I would not like to spend too much time on introductory remarks. I would rather come back at the end of the session with an attempt to summarize our debate. My intention is to give the maximum amount of time to interaction among panellists, with the help of our moderator Mr. Tim Kelly. This being said, we are having this session today on Internet and development and the points we are going to address will certainly be significantly different than the ones we would have addressed two years ago on the same subject. Moreover, one might safely venture that these points will probably be very different from the ones we would address under the same heading two years from now. This is a law of the Internet, it is changing very fast. However, on the Internet scene the development dimension has grown in importance over the last few years and it is continuing to grow in importance, and I strongly believe that a session like this one, organized at TELECOM 99, bears a special responsibility in not only assessing what has been achieved so far in terms of relationship between Internet and development, but also in anticipating the debates to come and identifying priority areas of action to make the Internet a true force at the service of development.

When I said that the points that we shall be addressing today would be significantly different from what we would have discussed a couple of years ago, I was referring in particular to the fact that we already have historians of the Internet, and when we look at the different stages of the Internet it is becoming increasingly clear that the history of the Internet is a three-stage process. There was

the first stage during which engineers, academics and researchers were building the Internet. This is the time when Vinton Cerf, Tim Berners-Lee and other pioneers actually imagined and created a tool first to interconnect machines and then a language and an interface that would allow individual users like you and me to actually use the Internet. This was what some would call the "geek" years or the engineer-focused and academic-focused type of years, and this is when the Internet was really created. We have recently entered a second stage, a stage in which another category of actors is shaping the Internet. This category of actors is that of the merchants, the people who are carrying out electronic commerce, the people who are using the Internet for business purposes, for economic purposes. This second layer is adding a new set of constraints, a new set of hopes as well as a new set of policies and objectives for developing countries willing to participate in the Internet revolution. And the third stage, which we are seeing in its infancy right now, but which I believe could be the focus of our meeting in two years from now, is how we move the Internet focus from the merchants to the citizens. If we look together at these three stages, starting from the engineers (i.e. the builders), then the merchants who are ensuring economic return on the revolution and moving it to citizens worldwide, we clearly see that social usage of the Internet is becoming a key element of its evolution. At the same time, developing countries in this context have both reasons to harbour new hopes and reasons to have new concerns. It is clear that using the Internet for economic, social or other purposes, be they educational, cultural, health-related or environment-related, still requires that somehow physical access should exist. It demands that the physical infrastructure exists and that it could be used at affordable prices; the concept of affordable prices has of course a very different meaning in a country like Nepal, with USD 180 per head per year, and a country like Switzerland. So we need to consider those elements that could further increase what is now seen as a possible digital divide. Although I strongly believe that these problems are not without a solution, finding the proper solutions today is a high priority area for reflection and action. On the other hand, developing countries have reasons to be hopeful. One of these reasons is that the power-costs relationship in terms of the Internet and Internet services is rapidly developing while another reason is that we see the development of new regulatory frameworks and new policy approaches which are favourable to the faster development of Internet in developing countries. Projections in this regard point at some encouraging trends: for instance, it seems to be now a point of consensus that, very rapidly, the number of non-English language websites will be greater than that of English language websites, and clearly the growth in non-English languages is currently significantly faster than that of the English language. Of course, one cannot ignore the fact that many developing countries also use English as their main language, but this reinforces the point. So there are reasons to be alert and to be willing to be involved in the mechanisms and the forums that will shape the Internet, to make sure that development is a prominent dimension in these efforts; and there are also reasons to hope that these positive trends will be actively pursued in the years to come. As always in areas where technological evolution is rapid, the key word will be flexibility. Developing countries who will succeed in making the Internet a true force of the development process are those who will be ready to adjust and to grasp opportunities as they arise.

But again, our panellists today will describe many experiences illustrating those points. Our keynote speaker will be Dr. Mai Liem Truc, from Viet Nam. He received his doctorate of philosophy and telecommunications in Germany and has more than 30 years experience working in the telecommunication sector. He headed several divisions and operation departments in the telecommunication sector in Viet Nam, and since 1997 Dr. Truc has been Secretary-General of the *Département général des postes et des télécommunications* (DGPT), in Viet Nam. DGPT is the Vietnamese administration, which is responsible for policy making and regulation in the field of post and telecommunications. Before that Dr. Truc was Director-General and CEO of the Viet Nam Post and Telecommunications Corporation, the incumbent carrier in Viet Nam. Currently, he is the Deputy-Chief of the National Coordination Committee of Internet in Viet Nam, member of the National Steering Committee of Information Technology, President of the National Frequency Management Committee and President of the Radio Electronic Association of Viet Nam. He also happens to be a member of several important national associations, which I am not going to list exhaustively now, but will just mention that Dr. Truc also headed various Vietnamese delegations to a significant number of ITU plenipotentiary conferences. So it is my pleasure now to give the floor to our keynote speaker of this morning, Dr. Mai Liem Truc.

H.E. Dr. Mai Liem TRUC

Thank you very much Mr. Lanvin for your introductory remarks. Good morning ladies and gentlemen. I am very honoured to have the opportunity today to share with you some views on Internet development in a developing country. I am sorry to have arrived a little late due to a traffic jam here in Geneva early in the morning. As we all know, the world has been changing from an industrial society into an information society as we approach the new millennium. In this global information age, the world economy and social activities will have to rely heavily on information. The success of any company or organization will depend on their ability to assess and to process information, enabling them to extract knowledge for their decision-making process. In my talk today, I am going to discuss the effects of the Internet on the economy and social activities of a developing country. I will then go on to talk about some problems developing countries face in their attempts to manage and develop the Internet. Finally, I would like to raise some issues relating to electronic commerce which are of major concern for most developing countries.

Mr. Chairperson, ladies and gentlemen, I will discuss first the effects, or some possible effects, of the Internet in a developing country. The Internet is becoming more widely accepted in many developing countries. It provides a limitless information resource for its users. Its impact on world economies and the culture of many countries is becoming increasingly important. The industrial age has gradually transformed into a global information age. In this information economy, the creation of information – that means the content, the transfer of information to the telecommunication network and the processing of information mainly by computers – could represent a critical sector in any economy. This sector would contribute large portions to the total wealth of a nation. The percentage of GDP contributed by the information communication industry might even become a major index to measure the development level of individual nations. It is, indeed, difficult to measure or even just describe the level of influence the Internet and telecommunications have on many economies and societies in the world. Many well-established economic borders need to be restructured in the advent of the Internet. The progress of the Internet and modern information communication networks has transformed the world into a global village in which people can promptly interact with others through the utilization of their own telecommunication service, such as telephone, radiophone and the Internet. Firstly, we need to talk about the influence of the Internet on economic activities. The Internet and the information communication networks have deeply affected the way companies and corporations are conducting their business. Many highly effective business processes have become outdated and need to be changed in the advent of the Internet. The Internet, along with the entire information communication industry, has been bringing the service sector of the world economy into an important position which can be compared with the manufacturing sector. In some highly developed countries, this service sector contributes the most important part of their total national wealth. The Internet has already changed the form of many products. Here at the TELECOM show in Geneva we can see some of the different service obligations of the Internet shown by various exhibitors. The music industry provides a very good example. Music products have been sold to customers in the form of gramophone records, magnetic tapes and compact discs. Nowadays, through the Internet, customers can buy music in electronic form directly from computer files. Not only the form of products has been changed, but also the delivery method both for products and services has changed radically. In the traditional way, customers need to go to a music shop to buy a tape or a CD-ROM, but with the Internet they do not need to go anywhere – they just need to sit down at the computer and download the music from the virtual music store in the virtual shopping mall. The Internet and computer networking technology has brought a new concept of working from the home. It means that employees can stay at home while working. Through computer networks, they can receive instructions and requirements and also submit their work to their employers. This new concept of teleworking has many advantages. For example, employers do not need to rent large areas of office space, which represents an important saving.

Furthermore, employees can save on travelling time and transport expenses. There are many more ways in which the Internet influences our economic lives, such as the electronic delivery of government services and health-care services. Computing networking technology enables the automation of the banking industry and supports the operations of many new financial services

such as credit card and electronic transaction services. The Internet affects not only the economies of countries but other societies and culture in developing nations. As I mentioned earlier, the world has become a global village. People are easily in touch with each other and the lifestyles of either nations or groups of people will become better known in the world and more widely recognized. The education system has been affected – besides traditional classroom learning, distance education methods have now become increasingly available. With this method, students can choose their own learning speed, and can learn in their own classroom or simply in their own comfortable living-room. With distance education, one can pursue continuous learning if one whishes to do so without no difficulty.

So now I come to certain problems regarding the management and development of the Internet in a developing country. Internet service has been introduced to many developing countries much later than in developed ones. As a consequence, the development of the Internet in those countries is still at the start-up phase and the penetration of this service remains low. Following are the major reasons for the low Internet penetration that I would like to mention to you. Firstly, a large number of Internet users today access the Internet service through the public switched telephone network, but most of the developing countries lack modern telecommunication networks and services. Telephone density in these countries is usually ten-fold lower than that of developed countries. Furthermore, the quality of the telecommunication services is not always guaranteed in a developing country. Secondly, developing countries also lack a regional or developed IT technology or industry, so they have to use their hard earned dollars to import computers and networking equipment to build their Internet networks. As a consequence, the computer density and penetration in those countries remains low. And thirdly, and very importantly, the charges for using Internet services in developing countries are too high to be affordable for most people in those countries. ISPs in developing countries, when seeking Internet access through the United States, have to pay the full cost of international telecommunication circuits that connect their nets with the backbone net in the United States and also charge for accesing port for this backbone. These costs represent a major component of the ISPs' overall operating expenses, leading to high Internet access charges for the users, the customers. So I call on ITU, the ISPs and the national network providers to reconsider the current charging arrangements for Internet interconnections so that we can boost the number of Internet users in developing countries.

Mr. Chairperson, ladies and gentlemen, most of the information stored on and transmitted over the Internet is valuable and useful for business, scientific communities, research and development activities, education and judgement. However, obscene and indecent materials are also available on the net. So we need to deal with the problem of undesired information flows such as pornography, libel and defamation that negatively affect national security, culture and society in developing countries. We must pull together to establish appropriate measures for controlling the accessibility and the distribution of such undesired information. Furthermore, many developing countries lack experience in the management of Internet resources. I therefore call upon ITU and other relevant international organizations and corporations to share the benefit of their experience in this matter with developing countries. I further call for more active participation and involvement of developing countries in the development of the Internet. I believe that ITU should be more active and play an increasingly important role in the development of the Internet and especially in activities concerning Internet cooperation for assignment and numbering. The presence of ITU in this matter could help to maintain a clear policy in the usage and allocations of Internet resources and to resolve trademark conflicts.

Mr. Chairperson, I now come to some news on electronic commerce opportunities and challenges for developing countries. Electronic commerce is a new but effective and efficient method of trading. It has been going through a process of extremely high-speed growth and development. It can benefit many economic activities, and we are witnessing changes in business, financial transactions and services, services for sale and many areas. In developing countries, electronic commerce is still at a primitive stage – and revenues being generated by this kind of trading are still insignificant. Governments in developing countries perceive e-commerce as an opportunity for the development of their economies because it may bring potential benefit to business. Businesses will have easy and low-cost methods of accessing a rich information source about markets and partners worldwide, so it will be easier to establish relationships between customers and partners. Using

e-commerce, expenses for offices, transactions and many other activities are expected to decrease a great deal. Manufacturers and service providers will be able to reduce the costs of introducing new products and services. E-commerce promotes the development of the IT industry, which is becoming increasingly important in the world economy, particularly in this age of the information society. In fact, electronic commerce represents one component of the tendency towards globalization and provides an opportunity for developing countries to narrow the gap between them and the developed countries. However, we recognize e-commerce as being a challenge as well, because it has a wide range of complex requirements – for instance, a suitable IT infrastructure, both computing and communication, or in other words, processing power and transmission bandwidth, because to access this IT infrastructure, it must not be too advanced for large portions of the population in developing countries to be able to access it economically. More resources are required to keep the e-commerce machinery running smoothly. Furthermore, the general public must acquire the habit of using computers and the Internet for their everyday activities, and of employing security and protection measures, including the use of identification controls and encryption, automatic transactions, electronic commerce, and electronic payments, the use of smart cards and electronic banking facilities. Intellectual property rights and exporting would become much more complex than in the traditionnal economy. How should we protect customers' interests? With regard to the legal and economic environment, we must establish and recognize a legal framework for the Internet: how to ensure the validity of electronic transactions, electronic signature, electronic payment, users' privacy, etc.

What will be the effects of electronic commerce on the culture and society of individual nations and the dependence on an Internet technology derived from a few developed countries, in terms of both hardware and software products. Mr. Chairperson, as I mentioned earlier, e-commerce presents both opportunities and challenges to many developing countries. We need to capture the opportunities with careful preparation and consideration. Open discussions about e-commerce and the factors contributing to the realization of e-commerce should be fully encouraged. Governments in developing countries should play a leading role in introducing e-commerce, providing and consuming products and services electronically within their respective countries, as well as creating a favourable environment for the development of electronic commerce. Mr. Chairperson, Internet and e-commerce are now accepted and used widely over the world. However, we must take reasonable action to minimize or eliminate any risk, direct or indirect, which may be the consequence of Internet and e-commerce. Governments should promote the development of Internet usage, but need also to have an accurate form of control over the information flow through the net, to filter out undesirable information and its effect on the culture and society. I hope that ITU and the developed countries will assist developing countries in building the necessary legal framework and to conduct appropriate field trials for e-commerce in developing countries. This work would bring benefits for both developing and developed countries because the promotion and development of e-commerce in developing countries will also bring opportunities for developed countries to expand their network or their market and to make their e-commerce more effective and profitable. With this remark, I should like to conclude my presentation. I thank you for your attention.

Mr. Bruno LANVIN

Thank you very much, Dr. Truc, for a very complete look at the major issues concerning Internet and development in Viet Nam. I am sure that, following this keynote presentation, most of what we are going to hear is going to refer again and again to the points we have just heard from Dr. Truc. I was in particular struck by the emphasis he put on electronic commerce. We have indeed entered the age of merchandizing, which should help us prepare for the age of citizenship, and it is clear that there are a number of issues concerning e-commerce that will condition how the Internet and development are related in the future. I was also struck by the emphasis that Dr. Truc put on field experimentation and field projects. What happens in reality, with regard to local government, administrations, enterprises, NGOs, universities in developing countries? It is clear that, in the area of the Internet, technology changes are too fast for knowledge to be found in textbooks. Knowledge

on Internet matters is to be found in experience. Whatever we can do together in developing countries will be a source of knowledge and an indication of the path to be followed. This will be a mixture of successes and failures, but experimentation is certainly a key word here, and I am very grateful to Dr. Truc for stressing this fact as well.

I will now turn to my left and introduce our moderator, Dr. Tim Kelly, who is head of operations analysis in the Strategic Planning Unit of ITU. Allow me just a word of explanation: the Strategic Planning Unit is actually the "brains trust" of ITU. This is where many of the forward-looking ideas proposed in ITU and in all the circles over the years were first put together, and we and other international organizations are very grateful to Tim Kelly and the people working with him for helping us to better understand some of the basic concepts related to the Internet in particular. Tim has been with SPU since 1993; before that, he spent five years as a communications policy analyst with OECD in Paris, and three years before that with Logica Consultancy Ltd. He has an MA degree in geography and a PhD in industrial economics from Cambridge University. Over the last 16 years, Tim Kelly has specialized in the economics of the telecommunication industry and he has written and co-authored more than 20 books on the subject, including ITU's World Telecommunication Development Report on mobile cellular communications, the "Direction of Traffic, Trading Telecom Minutes" report 1999, and most directly related to our subject today, "Challenges to the Network: Internet for Development", which was also published for TELECOM 99. If you have not read this report, I would strongly recommend you do so as quickly as possible. It contains many of the ideas that will indeed shape the debate on Internet and development in the future.

We shall then hear from our three panellists, and our discussants, and I shall quickly introduce all of them together now, so as not to interrupt the flow of their presentations. We will first hear from Mr. Ayisi Makatiani, who founded Africa Online which is represented in six countries. He was born in Kenya and went to MIT. He is a member of the World Economic Forum and of the Global Leaders for Tomorrow. I can add, since I was in Nairobi three days ago, where we had our regional meeting on electronic commerce for Africa, that Africa Online was one of the most prominent participants, and all the attendees were very impressed with the fast pace and performance of this young company. We will then hear from Mr. Shashank Kansal, here on my right, who comes all the way from one of the poorest countries on this planet, Nepal, and from the company Worldlink Communications Pvt Ltd – he is currently Senior Vice-President of Worldlink Communications in Katmandu and, as he calls himself, is a "third generation entrepreneur". He has been in business for more than ten years now, which means that he did start very young, and he is one of the most prominent and successful business people of this new generation in that part of the world. He has initiated a number of services and he is currently launching new ones, first with IT-related services and then with paging and cellular telephony. He may tell us about his work on that, and his experience is one that touches many aspects which have been mentioned by our keynote speaker about the difficulty of dealing with governments and with foreign partners, establishing ISPs, a theme that Mr. Kansal will develop. After Africa and Asia, we shall be hearing about the Latin American side of things from Mr. Danilo Piaggesi who, although Italian born, is now working with Latin American-oriented institutions. He is currently exercising a number of different responsibilities, many of them related to the Internet. He is currently the Chief of the Information Technology for Development Unit of the Inter-American Development Bank in Washington. He is in charge of project development, and manages the portfolios of both Africa and Latin America. In addition to these three panellists, we are also privileged to have with us this morning Dr. Hans d'Orville from the United Nations Development Programme in New York. Hans is Director of IT for Development, and he has accepted to take on the role of discussant. So, I would like now to give the floor to our first three panellists, after which our moderator will take over and initiate the first part of the discussion. After the coffee break, Dr. Hans d'Orville will usher us to the second part of this session by asking direct, probably provoking, questions to the panel, at which stage we shall enter into what I hope will be the truly interactive part of that session. Eventually, I intend to exert the privilege of the chairmanship to reserve the final ten minutes of this session for a summary of the discussions and draw a few conclusions that should be as practical and operational as possible. So, with no further ado, I now give the floor to Mr. Makatiani.

Mr. Ayisi MAKATIANI

Thank you Mr. Chairperson, audience and keynote speaker. I think, given that the topic of today's discussion is the Internet in developing countries, the best way of going about it would probably be to try and keep Africa Online as the case study, discussing what we've done, where we've come from and where we are going, with the focus on one area of Africa Online's business. This concerns mostly access, although Africa Online is also very much involved in electronic commerce regarding business to business, and business to consumer, and consumer to consumer business. But, because our biggest challenges in developing countries, particularly in Africa, concern access, and until we get to those people on the Internet, we can't sell things to them, and because I am addressing some of the policy makers who can actually go out and help us bring the Internet across, I'll focus on the access side of our business. I'll also tell you a little bit of what we are doing in going ahead.

Africa Online was started in 1994, and was founded in both Kenya and the United States as a way of closing the gap between expatriate Africans and Africans in Africa – it was one way of getting the news out of Africa into the United States and submitting it instantly, and a way of getting news out of the United States into Kenya initially, and being able to re-sell it. Our mission today is to be the Internet gateway to, from and within Africa, and that mission for us covers both Internet access and the electronic business solutions which represent the business side of our market. We are present in six countries. We are in Eastern Africa, that is, Kenya and Tanzania, and soon we hope to be in Uganda. We are in Ghana and Côte d'Ivoire, and soon we should also be in Nigeria and Senegal. And we are in Southern Africa, that is, Zimbabwe and Swaziland, and we are also having discussions about getting into South Africa.

Internet: let me give you a couple of conditions governing how we see what is needed to make the Internet available in an appropriate way to everyone in Africa. Africa is changing, and I shall focus on Africa in this case because that is the place we know and understand. Government is improving, even in the midst of other, more media-friendly, news such as what is happening in some of our countries in Africa, be it wars or other issues that are considered to be African problems. Telecommunication infrastructure is improving, driven by private wireless infrastructure, deregulation, liberalization and the entry of international competition. However, we are still a very poor continent, with the lowest number of computers per person, some of the lowest rates of GDP and very weak teledensity. Infrastructure is still very bad, regulation and monopolies are still an issue in many countries, investment from strategic investors is still very, very fickle, bandwith costs are extremely high, and there are areas we can blame for these problems. Quality of service from the monopolistic providers is still very bad, and you can't necessarily get around it as easily as in most other countries. Just to give you an example, in some countries, the PTT will only work from 9 to 5, and after that you're on your own. In a service such as ours, where you would normally provide a 24-hour service, you have to wait until the morning and then, provided you get a chance to talk to the right person, it will take you a while before you can actually offer your service. It makes it very difficult for us to be able to offer our service to the multinationals who are used to a certain level of quality, and who do expect it. However, how can we make a difference in our continent? We need to bring Internet to the masses. We need to bring the mass market to the Internet, and how are we going to do that? We are going to build communities of interest in Africa, we are going to build suppliers of content and service providers, and we are going to build systems that connect users to networks. And we have to do it somehow because there are communication needs in Africa just like anywhere else, except that the people cannot afford to spend USD 500 to USD 1 000 for a computer – they would have to mortgage everything they had to buy just one computer. These systems could help eliminate the middleman, while helping to create value for the customer. This is again touching upon the mass-market concept, the business to business concept. They will provide entertainment value, either directly or indirectly, and they will provide the ability to connect Africans to people outside of Africa – again, sticking to my example, Africa, as the developing area upon which I personally focus.

Now I will move on to a concept that Africa Online asked me to introduce: it is called E-touch. Now E-touch is what we term "the African solution to an African problem", because of the low per capita income and because of the need for communication.

There are still postal services in Africa, there are still telecommunication companies making a lot of money in Africa, the people still need to communicate. However, with an average per capita income of USD 250 to USD 500 per annum, it is clear that in a lot of the African countries, few people can afford to have individual dial-up access.

However, if you do provide them with public access locations where they can go and access the Internet, they will do so, and they will use it in large numbers. We have developed a concept. The concept works from the point of view that we have gone out and found the kiosks where people already run faxing businesses, or do photocopying, or run other small entrepreneurial types of businesses. Most of these people do already have a telephone and they do also have a computer. When someone goes there, they type a letter and when the letter is typed, often to apply for a job or something similar, it is printed and the client pays for each service. We discovered that we can very easily connect that computer to a telephone and, all of a sudden, that computer becomes e-mail ready, browser ready. It can connect to Africa Online and we are able to provide a service. What we have done is to go out and provide marketing support for all these locations. We provide promotions in the newspapers. We put them under our branded service and we provide them with the access and customer service technology they need. They are responsible for ensuring that telephones work, for providing computers, for ensuring that the place and the location are clean, that it is functioning, that people will be smiling and ready to offer Internet access to the customers who come through that door and will resell it as a value-added service in addition to the telephone and the faxing service. It has been extremely successful in Ghana and Kenya where we have tested it. As of today we have at least 500 of these centres and we will be expanding into all the other locations mentioned. We have more subscribers today for that particular service than we have for the regular dial-up and corporate news line services we also offer. We have signed agreements with a couple of post administrations to supply this service to all the post offices in the country, specifically in Ghana and Tanzania. We have a major network of support providers who will be providing services through this centre, focusing on the pharmacy network, real estate network, banking network and news network. Just to give you some idea of what we as a company intend to do, we intend to expand by extending this system to five other countries in, of course, Africa, and want to strengthen the inter-African connection so that people can move from one country to another and still know that they can expect a certain level of quality of service and can access the Internet.

Now, I have to emphasize that Africa Online is still very much a profit-oriented organization. We hope to be able to deliver this service at a profit eventually, although we are not making money today. We are helping people connect, and we do believe that, from a position of trying to help the continent, we have achieved something not only for our shareholders but also for the continent. We have commitment from our employees, from management and from the shareholders. We are very proud, and all our staff are very proud, to be part of this system. Thank you.

Mr. Bruno LANVIN

Thank you Mr. Makatiani. I believe everybody in this room could feel the kind of enthusiasm that this type of experience can raise in a continent like Africa. What we heard in Nairobi a few days ago was very much along those lines. Two elements again struck me in the presentation we just heard: first, it all started with the concept of community. The idea that was behind setting up Africa Online was indeed to help African communities worldwide to get together, and yet today this is the main engine behind the expansion of Africa Online to identify communities of interest and help them do what they want to do. The concept of E-touch using kiosks to relate the use of the Internet to public access is also an element which is key to this initiative and to its success, and could be

used in other parts of the world. Secondly, I was also struck by the word "proud". I think it is extremely important, whatever happens regarding the Internet and development, that everybody who uses or promotes it in developing countries can say "we are proud of what we are doing; we are not just importing a model; we are not just importing a means of using advanced technologies from other parts of the world; we are re-inventing it; we are satisfying local needs, and for that we are proud". So, I wish to thank again Mr. Makatiani for reminding us of these very basic ideas. I now turn to Mr. Shashank Kansal, who will tell us about his experiences in Nepal.

Mr. Shashank KANSAL

Honourable Chairperson of the session, Dr. Lanvin, participants, ladies and gentlemen, please let me start with my profound thanks and gratitude to ITU for including such a wide-ranging discussion in the TELECOM event. This has been the first time that such a development session has been included, and it is something which has to be recognized. There could not have been any better time than now for discussing such an issue because the Internet is playing such a powerful part throughout the world, and especially for the developing countries, that this is the moment for them to rise up and take a ride on the crest of the wave, otherwise they might find themselves beneath the waves. It is an honour for me to be part of a panel comprising such a distinguished group of people and, whatever I say, some of it has already been said during the previous sessions and will be repeated again. Nevertheless, I would like to say a few things and I have a presentation which I will begin after this comment: I am young and I too have a dream. It remains true, not only for me as an individual, but also for my country, Nepal. Nepal is one of the least developed countries, LDCs, one of the most beautiful yet poor, situated in the foothills of the Himalayas, home of Everest. Even the very poorest country, Bhutan, has opened its door to the Internet very recently, in the last six months, which in itself shows how powerful and necessary the Internet has become in today's world for applications ranging from education, health, government and, of course, commerce.

The first users of the Internet and e-mail services in Nepal were the non-governmental organizations, international non-governmental organizations, small organizations, cooperatives and consulates. They were the first ones. Some of the government organizations also started to switch over to the new services of e-mail and the Internet, which is very remarkable. In 1997, we acquired for the first time a private direct-link leased line to Montreal in Canada, and started our Internet services in Nepal. In 1997, the Ministry of Information and Communication in our country actually drew up the regulations for the first time, seeing what was taking place and that it needed to be regulated, and IT licenses were issued once the services were available. Regarding local lines, as everybody knows, local teledensity is still very poor in all the LDCs and Nepal is no exception. We also have a very poor ratio of telephone lines per user, partly because we have a terrain where the laying down of land lines is not at all easy, and that was one of the key factors as to why the Internet was developing very slowly. There were other services apart from the basic e-mail and Internet which have been introduced in Nepal, such as e-mail to fax. This helps people with no fax machines. An e-mail can be sent and it can be delivered to the recipient's fax machine; we re-introduced this service in 1997. When I visit abroad, I see how in the Western world people – not only the experts – are conversant with the new technology, how everybody is using it. The middle-aged people who are the decision makers are still using the conventional methods, but in 1997 we did see that people were using new services which were based on IT. We also had a fax to fax service installed in the Ministry of Information and Regulations – that is our IT service. It was an idea of the telecommunication monopoly for all the country and everybody was hand picked. It costs almost two dollars and fifty cents to send a fax to any country in the world using the PSTN and the direct technology of fax or IP through a partnership with a United States company. End users' prices are less than 30 cents per minute for a fax to the majority of countries. We also started global roaming for business travellers so that people could use their accounts with us, anywhere in the world, and we started with leased line services. People have been using mailing lists and internal e-mail very consistently, and Web publishing is something which developed in 1997 when

people realized that the Internet was very powerful and the best media to advertise. The year 1998 was very remarkable because prices dropped further, and the first noteworthy thing to happen in 1998 was that the Internet and e-mail access extended outside of Katmandu. Until then, whatever development was taking place was limited to Katmandu, which is the capital city of Nepal, and the rest of the cities were deprived of the facility. Anyone who wanted to access the Internet or e-mail had to dial into the capital, over PSTN STD, with long-distance charges. In 1998 more points of presence were opened outside of Katmandu by the private sector. The bandwidth was still not extended because the NTA – which was the new regulatory body that was set up – was to open up the skies for VSAT services for a direct international gateway for ISPs and telecommunication operators, and the bandwidth expansion with the local PTT was not in short multiples, but in high multiples, which was not economically viable for the private sector.

In 1998, customers also supported the Internet because they were finding it the easiest way of communicating and the easiest way of marketing. It was making their life far easier regarding all the communication needs that everybody has in today's world, whether it be a personal user, or a government official, or a non-governmental organization, or whatever. Several new business discovered new opportunities with the Internet. I have seen many remarkable success stories in Nepal. Let me just tell you one story. It gives a very profound insight. There was a farmer in Nepal who, while working, came across a tourist. We have many tourists, and that is one of our key foreign exchange earners, because Nepal is a beautiful country visited by a lot of people. And the tourist was lost, his wallet had been stolen or probably simply lost. So the farmer took him to his home and then the tourist stayed there for a few days and so enjoyed the hospitality that, when he went back, he suggested the farmer set up a hotel in his farm. So the tourist sent him all the infrastructure and helped him set up a small guesthouse for tourists. Moreover, he set up a website for this farmer and he advertises that particular website all over the world. You go to Yahoo and you search under Katmandu and guesthouses, and you will see his guesthouse there. Somehow this farmer had known me for a long time, so he asked me whether I could lend my e-mail address for him and whether I could pass on any messages that were received for him. And I was astonished, in less than six months this person was receiving requests from all over the world for bookings to stay at his guesthouse, even through we have a lot of hotels. Geneva also has a lot of hotels, and we don't have quite the same the rooms by the way, but we have a lot of hotels because that is one of our key resources. So, that is an example of how the Internet can actually change things: a farmer suddenly became a hotelier in one of the poorest countries in the world, with the help of the Internet and with very little knowledge of computers, very little knowledge of the Internet, e-mail or new technologies.

Between 1994 and 1997, the amount of e-mail only users grew rapidly from zero to 3 500, but in the period 1998-1999, e-mail only users' growth decreased in favour of Internet services, because people were migrating from e-mail only services to Internet services. E-mail users now number about 5 000 people. There are 5 000 dial-up accounts, that is including all the private sector companies. We have grown from three companies to ten companies very recently, thanks to the new policies which are very favourable for starting up new services in the country. What is remarkable is that, in Nepal, not everybody has his own computer or own infrastructure to actually give him access to e-mail. But, because it is so easy, people are sharing the same dial-up account to access e-mail and the Internet, so the number of dial-up accounts is always much less than the actual number of users of the services. In 1998 it was 1:2, but now it has been growing from 1:2 to 1:3 to 1:4, where one dial-up account is actually serving two, three or even four people to access e-mail and Internet services.

Between 1996 and 1998, Internet users increased from zero to around 6 000 dial-up accounts, with similarly 12 000 to 15 000 users. In 1998, growth of Internet users slowed down. Bandwidth constraints were one of the reasons why in 1998 we saw a lot of problems, because the bandwidth was still limited to 64 k/bits, or ISPs with multiple leased lines, in multiples of 64 they were had two 64 k/bits lines, which was too low for such a number of dial-up users. There were simultaneous log-ins of not more than 100 available at a time, with the three individual ISPs. So that was one

reason why the growth graph was going up and then started going down because of the constraints in the telecom infrastructure. Most of the figures are likely to be more than doubled between 1999 and 2000. Actually, this is one of the sites that I had used for one of my previous presentations, so I will keep on telling you more about what developments have taken place in 1999. In early 1999, we introduced deregulation for the direct international gateway, as I discussed earlier regarding VSAT. Now we have three direct international gateway providers who have two megabits each linked to Singapore. One of the ISPs is linked to Singapore, my company is linked to New York. We have a 2-megabit stream going into New York now. Over a VSAT that we have established, we are using satellite technology and downlinking in London, and taking the fibre-optic connectivity up to New York for our Internet requirements. We now have lower costs and more bandwidth and more POPs. With a leased line, people in five cities can dial locally and access the Internet. E-mail accounts have been increased. Those were the 1998 figures, and in 1999 major change is expected.

Now the current bandwidth is 6 megabits over VSAT with three providers, and the national teleco, NTC, which stands for Nepal Telecom Corporation, is also providing a VSAT connectivity for the Internet. So currently, by the end of 1999, there will be total connectivity of 10 megabits of Internet to Nepal, which is a remarkable feat in itself. The private gateway to international is also being made available through the new regulatory body ATA. ISPs are all under private ownership, except NTC which is the new entrant. A number of more ISPs are expected by the end of 1999. We already have more than seven, so we will have ten ISPs providing Internet connectivity, which will bring in more competition. Let me mention here that, as far as my knowledge goes, we are the only country in South Asia to give such cheap Internet access and with such a fast development of the Internet. We currently have dial-up users paying somewhere around USD 38 to USD 40 for a month of unlimited Internet access, which is very much contradictory to what we had just three years ago. A loan helped us to bring down the prices so low. The new regulatory body, Nepal Telecom Authority, has very liberal policies. We have one of the best telecom infrastructures in the region and subsidies will be used to provide access to the rural areas for the under-privileged. We are better than other neighbours, including India, in terms of Internet prices and as far as Internet infrastructure is concerned.

We are working on cyber laws and IT policy and education in computers. Internet regulation on the whole is progressive, but quite stringent with the local situation.

However, things are improving. Access to content is still the responsibility of the ISPs and the end users. Revenue comes from taxes on the revenue-sharing basis, which is better than having a lot of high taxing on licenses. Manpower has been available and training is being carried out locally, where we have developed everything with the local engineers. The majority of our development has been local, without any enforcement for technologies from the United States. We have VSAT, and fibre-optic connectivity is the future. The use of international languages in local content is being developed. The technology is being developed very fast nowadays. Private international banks have been using swift and credit cards, they have been issuing credit cards and they are moving towards the network's future. We are working towards e-commerce. We were very low in infrastructure and that is the reason why we took so long, but the way that development has been taken, e-commerce is sure to take place very rapidly in Nepal, in the way that the Internet has done. We have the greatest price reductions as you have seen, and more POPs have been around the country. The number of users is likely to more than double in less than six months, given the new price structure that we have for end users.

We have call centres like those Africa Online mentioned just now. We have call centres where people can come in and make calls and use Internet facilities and send e-mails, similar to the kiosks that Mr. Makatiani had mentioned. We do not have kiosks because of the price that would be needed to set them up, but our model is for small private ownership call centres, where a particular individual has two telephone lines for making international calls, sending faxes, printing documents and accessing the Internet and e-mail, in a similar way to what the kiosks do. Our model is better

for us because a lot of people can gain employment and the service is available in every nook and cranny of the city. I haven't even see such a model in Europe or in the United States, where getting Internet access is so easy. In Geneva itself, getting Internet access is tough unless you have a particular local dial-up access. In Geneva, not all the hotels have Internet access, but in Nepal, anybody who steps into Katmandu can walk out of his hotel, go around any corner of the city, and would find Internet access; there will be a small call centre which will allow you to make international calls, send faxes and e-mail. In this regard, we stand on top, as far as I have seen, compared to any city in the world. Thank you.

Mr. Bruno LANVIN

Thank you very much Mr. Kansal, and thank you for reminding us that there can be an "advantage of the late comer" and that, indeed, the technology available today is more powerful, less costly, more flexible than the one available yesterday. So there is to some extent an advantage in being the late comer when adapting and adopting the latest technologies. It was very important, I believe, to hear of the experiences of one of the LDCs because many things have been said about the Internet, much of them wrong, concerning its possible use in poor areas. Many people had predicted the end of geography. Yes, to some extent, distance-related pricing will disappear.

However, a country like Nepal remains a land-locked country and this will not be changed by the Internet. What can be changed is the way in which a country like Nepal can overcome this handicap. Another geographical characteristic of Nepal is that, of all the countries on this planet, it is probably the one which is closest to heaven, and this will not be affected by the Internet either! The point here however, I believe, is also to understand that although the Internet has been called a global revolution, until we make it work in the least developed countries of this planet, until it affects positively the life of people in the poorest areas, we will not have the right to call it a global revolution. It is one of our missions to make it a truly global revolution, and I wish to thank Mr. Kansal for telling us that even in the poorest countries on this planet, there are dynamic entrepreneurs and the revolution is indeed taking place.

Since we are already fighting with time, I would now like to give the floor to Mr. Danilo Piaggesi.

Mr. Danilo PIAGGESI

Good morning ladies and gentlemen,

In the commitment that the IDB has undertaken this year, particularly for the coming year, by the year 2000 this is represented by creation of this unit called information technology for development. This means of course the application of IT particularly in the area of Internet, and here we're going to see how this works.

I would like to highlight the new unit. In the words of the President, it's been one of the first pioneers of the region to give an impulse of IT, particularly the development of Internet. The point here is that the IDB is trying to achieve a position activities of the projects. Achieve a position in this so that once you realize that there is a gap of knowledge in what we call INFODECALS.

How are we going to do this? Accepting cooperation. The fact that we're here today is an attempt to establish a dialogue with other international organizations. How do we conceive the era of IT? How do we see IT for the purposes of development? How do we see that role? We've considered the economic impact that creates a new economy, the impact on social development which creates a development of human capital and impacts on public administration that creates a digital democracy. That's a new term "digital democracy" which is acquiring more and more importance in the Latin American Region and the Caribbean Region. All these things to IT – Information Technology.

Of course within this great big area, Internet has a very importance role to play. And as you can see from this image, from this graphic, the region is just recently moving into this field, into this area of Internet but there is a very rapid rate of growth, particularly compared to other areas in Latin America. These are figures which have a great impact on this concept. This part of ECOM (Electronic Commerce) which is part of the Internet application through electronic commerce. All this part is represented by this particular image, this picture you're seeing now. (Details could be found in the Speakers' Book and CD-ROM of TELECOM 99 Development Summit).

What are the international strategies that we're following? I think its true that to be able to reach the idea of Internet for all we'd also have to promote a good telecommunication structure. And to do that we, as international institutions with a capacity to create a consensus, we have to grab support, financial support to achieve this purpose. Of course it's obvious that the concept that the IDB has on electronic commerce is the current one, and it has to be equitable, it has to promote sustainable development. Otherwise it's not a profitable investment.

What is the IDB objective? Have an impact in the area trying to use comparative advantages the IDB has which is to create consensus in the region and through the empowering of IT. The mission of my unit in particular is to support the bank in this effort. Supporting it through the objective of promotion and economic development through support to projects. Through this we give support to governments to set up projects that have components of IT, facilitating access, creating or granting resources for the training of people, promoting the participation of the private sector in international participation. Now that is a key point which I would like to put forward as part of your debate.

The Bank at this point in time finds itself with a doubt; it doesn't have a recipe, a panacea, of how to integrate the private sector within the social impact programmes using Internet. So this could be a topic for discussion in the second part of this presentation. An attempt which we're carrying out is a tool, a financial tool, using what the bankers call "science and technology programmes". These are funds which strengthen the scientific and technological capacity of countries. It strengthens the competitiveness of enterprises. We're talking about small and medium enterprises. What are the tools for the beneficiaries – well, we give non-reimbursable contributions for these small and medium enterprises and I hope that you can read my presentation (I hope you have it). There are up to 50% of the value of the project which is granted. There is research of course, investigation. This would be a non-reimbursable loan, so in the case of the small and medium enterprises (SMEs), it would be at least 50% of the value of the project proposed. But as regards research or investigation, that would be the total amount that the IDB could finance.

Of course the beneficiaries are the researchers, investigators, themselves. In all of this the basic concept is to transfer technology.

Now just an idea, an example, is Argentina which has designed a programme of 280 million dollars, where 140 million was put forward by IDB, 140 million by the Government of Argentina. The programme plans a project of Internet specifically for SMEs (Small and Medium Enterprises). Of course the other important effect of this programme is developing the capacity for research and development of the country itself.

Now there is a second point so as to establish this attempt of encouraging the use of Internet in the region. The Bank is not alone in this. It has begun, has just entered into this competition recently, but it is supporting other international organizations which have already acquired experience. In this case, the European Commission through DG 13 which is called the information society. With them we have established a co-financing programme with them (with DG 13) for the transfer of technology establishing European/Latin American consortium. Of course the objectives are the same and here we're always supporting the social side of Internet because it is education, health, environment, training sectors which are the traditional ones. So at this point in time the IDB is paying great attention to the social issue. So much that by the year 2000 during the Governors' Conference that takes place every year, by the year 2000 the topic of IT will be a sectoral

development tool which goes through all the traditional development sectors. So IT Internet as a tool for the traditional sectors of development. This is a new concept. Of course technical cooperation, our finance of projects, programmes, transfer of technologies, dissemination, promotion, technical assistance – all this is part of it.

Now when we talk about the participation of the private sector, of course we have to take into account the membership of projects; the fact that they are adapted to local realities. For us that hasn't always been the main thrust of the projects proposed. We have to develop international cooperation. This is a fact, it's a challenge for IDB. The IDB, the President of the Bank, has said this is the main objective.

I think that with this topic I have just touched upon very generally, the idea of IT and the application of Internet, I would like to conclude with just a note – something I've just read in the *International Herald Tribune* which says "what is good about the Internet?". What is good about Internet for developing countries – first of all there is better access to information. OK, this means – I'm going to give you the impression the bank man wants to give you – we're fighting so that the Latin Americas Region has access to information. Thank you very much.

Hans D'ORVILLE

Mr. Piaggesi, can I just add that if you look at the case of Bangladesh, which is one of the poorest countries, you will see that in Bangladesh a national cell phone network is taking root, and it shows that people, illiterate and poor as they may be, have a natural need for large-scale communication. And I say large-scale deliberately because this cell phone network shows that Bangladeshi from the villages communicate with their relatives in London, in Chicago, in New York, wherever they may be. And it seems that they're ready to pay the little cost – it's not very expensive – in order to satisfy their penchant for communication. So it is part of the human needs which need to be addressed.

Mr. Bruno LANVIN

Thank you very much Danilo.

Thank you very much for centring or focusing discussion on the most wide-ranging aspects of IT and the economic and social discussion describe the type of activities that are taking place in the IDB. I think it's very important, for example, to see that the international organizations are working to keep, to have respect, for regional realities. We say that we're applying in a uniform manner models in developing countries. No. We have to adapt to the realities of every country. Second point is that cooperation with the entrepreneurial sector – the private sector – is an essential, key element to be successful in this context. The point of view of Latin America and Caribbean reminds me of something I was told not long ago in Central America. I was asked, and this is just to make Tim Kelly more comfortable before giving him the floor, who was the first economist? And the answer was Christopher Columbus. Why? Because when Christopher Columbus left he didn't know where he was going, he didn't know where he was heading. When he arrived he wasn't where he believed to be and all this with public funds. But there are other examples too am I'm sure that as the discoverer Christopher Columbus, if he were alive today, would be using Internet. It reminds me of something else too which is also said about Internet. In Internet, and I believe more in Internet in developing countries, there are no paths. The path is created as you walk along. This is experiment which helped us to discover his new world.

I would just like to add one thing, you forgot a topic about Christopher Columbus – he asked for a loan – the Italians asked a loan from the Spaniards to carry out this activity. Right, thanks for spelling this out.

Now I give the floor to our moderator, Tim Kelly.

Dr. Tim KELLY

Thank you ladies and gentlemen. Our chair has set the scene for my presentation by saying firstly that lots of things have been written about the Internet and most of them are wrong. As the author of a recent report on that I will take some of the guilt, and he also told you that economists don't know where they're going.

Well, one thing I do know is that we all need a coffee break at some stage in the near future, and we also need to open up the discussion, so what I would propose to do is to start off this presentation and to open up the debate to the audience and maybe take a coffee break around 11 o'clock – if that's OK.

Internet changes everything – or so it's been said. But will the Internet change the development gap. The development gap has been almost a constant in the history of ITU and the history of the telecommunications industry as a whole. Will the Internet change in a qualitative or quantitative way the nature of that gap between, one the one hand developed countries and, on the other hand, developing countries? Will the Internet be like the cyber bullet to quote the word that Karen Lynch used in her editorial in one of the show dailies earlier this week. Will it be the cyber bullet which will finally, once and for all, begin to address this issue of the telecom development gap, or is the Internet rather something of a distraction? Some would argue that what developing countries need are clean water, good health, good education services and the Internet is a luxury. While those are two opposing views, I personally would tend towards the first of those two explanations because I know there's a wide variety of views, certainly within this group, and my aim is to begin to bring out those views.

In terms of structuring the discussion, I would suggest four major topics.

Firstly, how can we explain the differences between countries in terms of their level of Internet access. We've heard for instance some good examples from Viet Nam, from Kenya, and Africa more generally, and also from Nepal, and looked at some of the factors which have helped to spur Internet development in those countries. But is that the whole picture? What are the factors which helped promote the Internet and how can the Internet be promoted more effectively in developing countries?

Secondly, to touch on that issue I raised earlier. Will the Internet help to narrow the development gap or will it by contrast actually increase the disparities between the information haves in the developed world and the information have-nots?

Thirdly, a key issue for developing countries, and a key value to Internet access is price. What pricing scheme works best in developing countries? Certainly some of our entrepreneurs on the panel have had experience of introducing Internet in developing countries, and I'd certainly be interested to hear from them what pricing scheme worked best.

And finally, what is the role for governments and also for international organizations and international development banks in terms of promoting Internet access in developing countries.

To begin to look at the first issue, it's clear that there's a very direct relationship between wealth and the level of Internet. What this slide shows for instance is the correlation on the bottom access between Internet users per 1 000 inhabitants and on the vertical access, of wealth, or GDP per capita. As you'll see there's a direct positive correlation. But it's clear that some countries are doing a lot better than expected. For instance, Estonia in this picture, has an Internet user base of just over 100 per 1 000 inhabitants, and yet it has a GDP per capita of less than 5 000 dollars. So clearly it is possible to do better than this chart would predict.

So what really are the necessary preconditions for successful take up of Internet service. How important for instance is the availability of local content and local language support? Which countries are doing best? Which could we hold up as being best practice examples?

And the fourth question is, is it possible to have good Internet access without first having a good quality cell-phone network? Is it possible for instance for countries to leapfrog the stage of laying landlines, and maybe begin to access from the Internet from mobile communications or cable TV, or satellite TV, or whatever?

So those are the questions that I'd open up to the audience, either to common on, or to ask additional questions to our panelists. Do we have any takers that want to dive in at this stage?

You're all very shy, would any of the panelists like to take up any of those questions?

I'm sorry, I don't want to monopolize the discussion.

Mr. Danilo PIAGGESI

What I would contribute to the first point of the discussion probably will be wider and the second part is the first point – what factors explain differences in Internet access between countries? I guess that there is a big point, the issue is information and information. And the spin off of this concept is the creation of local content. We realize for instance in the LAC (Latin American and Caribbean) region that there is a deterrent; one deterrent is the lack of local content from the Latin American region. The person who has created one of the most successful Internet providers for the Latin American region is from Hawaii. But generally speaking there is the feeling in the LAC region that local content is over sight.

Mr. Bruno LANVIN

Thank you, Tim. I think right about the first question: we hear the very core of what we are looking at. How can we make this revolution truly global? And it is clear that reaching out to less heavily or less densely populated areas, especially rural areas, is a key element in the context of Internet and development. The experience we just heard about from AOL in Côte d'Ivoire and from what happened with Grameen Phone in Bangladesh are clear examples that something is indeed taking place. If we want not only the people who are acting locally but also foreign investors to follow the same pattern – that is, how to attract foreign investors to enhance the user, the Internet infrastructure's connectivity, in rural areas – it seems to be that the vital element is to reach for small and medium-sized enterprises (and I would even include micro-enterprises), because we have these entrepreneurs in the rural areas – the farmers, the people processing craftsmanship. And it is by reaching this population that we create critical mass. So, looking beyond the urban and heavily populated areas is an element that needs to be put right now in the equation, including negotiations with foreign investors. And I would add that it is not just critical mass; we need also to ensure that the masses are critical. That is, we need citizens who can make their voice heard in how the Internet is being used in their countries – how it is being used for social purposes, for education, for all the elements which are not strictly business-oriented. And letting people know about what happens in all the countries, about what has been the experience in neighbouring, similar type economies, is an important element in that respect.

(Delegate from Nigeria)

I identify with the comments of the African Online Chief Executive. I believe that it is actually important to develop Internet access for the rural areas of the developing countries. There is one aspect I think has not been focused on and that is the schools, the educational infrastructure. I think we shouldn't only focus on the illiterates in the rural areas. It is very important to train the young ones who are in school, to let them get the feel of computer education, and Internet access, since

that's how they're going to grow, develop, and have the confidence to relate with their counterparts in the developed countries as far as Internet access is concerned. And that's very important. We shouldn't only consider that it's actually a waste of time as far as the literate farmer is concerned. It is not. His child needs the Internet education. More than that, regarding the premise – and this is more with regard to what the moderator said – that maybe the developing countries need more water, they need more education, they have developmental needs other than, say, the Internet, in which case the Internet could be considered a luxury, I think, actually, there is a meeting point between this, particularly when you consider that the Internet is a means of education on its own, and that it's a means of enlightenment, providing information as to how to solve your water needs, your structural needs, the other infrastructures that you need. And in that context, I think Internet is really important for the developing countries. Thank you.

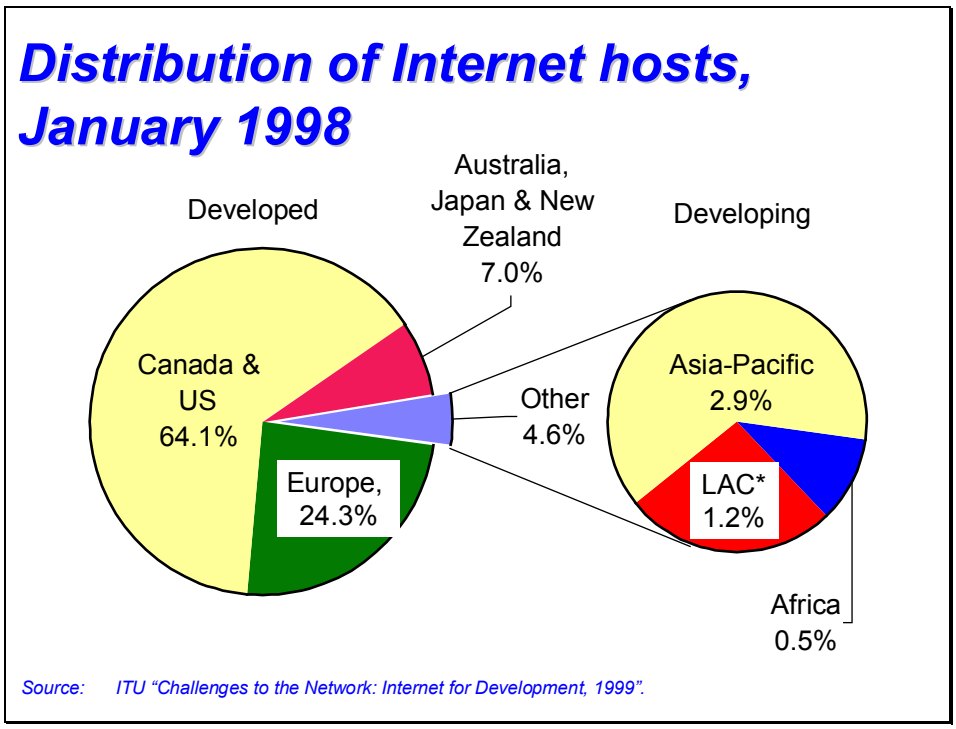
Mr. Tim KELLY

Those of you who are staying longer in the week here at TELECOM will know that on Saturday and Sunday we are opening the doors of TELECOM to all the local inhabitants, including all the children. You will find that once the teenagers and youngsters come into TELECOM, the atmosphere of the trade show will change dramatically. But, I would very much agree with our speaker from Nigeria – that it is very necessary. The young people, particularly in developing countries, are going to be the greatest resource in the future, and it's with them that the future of the Internet lies. Shasank, did you have a comment? I know you're a youngster, yourself...

Mr. Shashank KANSAL

Thank you. There are two things that I would like to mention. It's regarding Internet access. When we speak about the basic amenities, the participant from Nigeria mentioned water. Yes, of course, basic amenities are something which everybody needs and especially the developing countries. But, the Internet is something which, if not picked up now, will not come around again – there will be no second chance. There was an industrial revolution in the 1700s, and the countries who missed out are today called developing countries, or the least developed, or the underdeveloped countries. And it created a gap of 200 years until these countries could match the pace of the modern changes and modern technologies, and the Internet has provided a chance to do so. The way things are changing, there is probably no more need for geography. This might be the last chance to catch up with the new pace. The developing world must at some point of time become an equal citizen or a world citizen over a period of time. Also, needs actually make people adapt to new technologies. It is a remarkable fact, and this is just for your information, that there is an Internet cyber café situated on the Mount Everest base camp, which is probably the highest point for any cyber café. Some entrepreneur located in the Mount Everest base camp has set up this cyber café because a lot of travellers who travel to the camp need the connectivity of e-mail and Internet. It is all a matter of need. There was a need, and there was somebody who was planning how to make a private company which could make some money with some profit-oriented idea he had, and there it was. So, it is all a matter of need, and people can actually do things and set up the infrastructure themselves, just provided the governments and organizations which are actually working on a macro-level can provide the backbone infrastructure to make this happen if somebody so desires. Thank you.

PRESENTATION
Mr. Tim KELLY



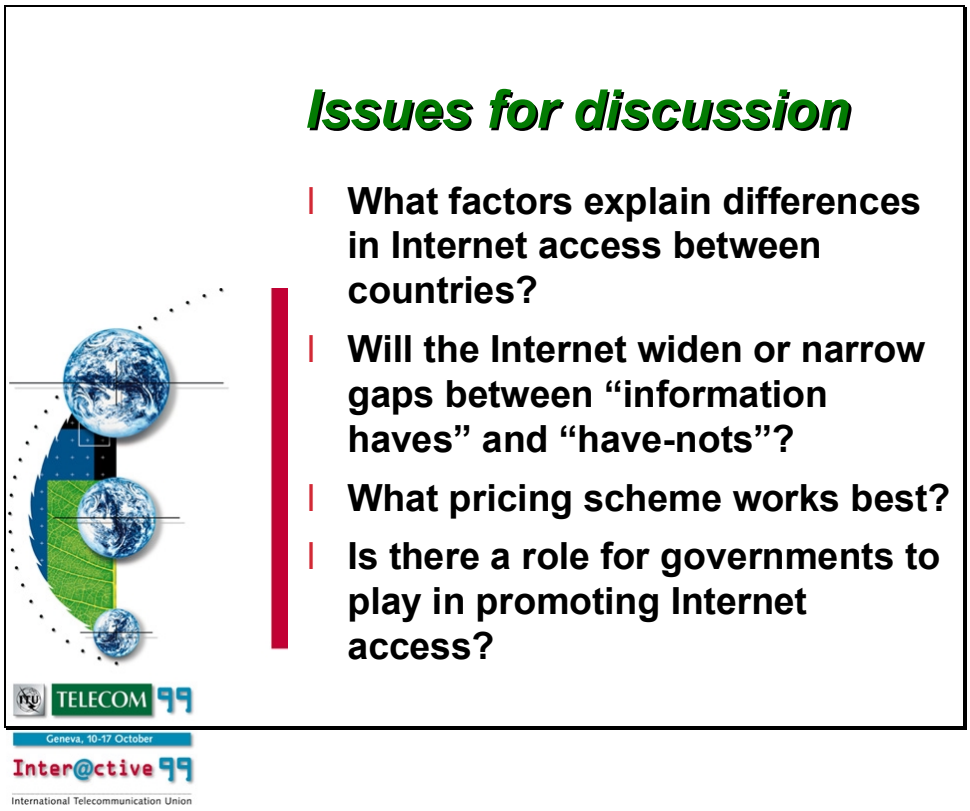
As this slide shows, the picture in terms of distribution of Internet is very unequal. Almost two-thirds of Internet access worldwide is in Canada and the United States, the United States being obviously dominant. A further fifth or 22 per cent is in Europe and the developed countries of the Asia-Pacific region, specifically Asia, Japan and New Zealand, account for a further six per cent. But the rest of the world accounts for just six per cent of Internet hosts, and those are split between other countries of the Asia-Pacific region, such as China, Hong Kong, India, Singapore; the countries of the Latin-American-Caribbean region, (around about two per cent) – Argentina, Brazil, Mexico, etc.; and Africa, (around about 0.3 per cent). Interestingly, I was recently doing some historical work on the history of the telecommunication sector, and back in 1910 the geographical distribution of telephone lines was almost identical to this, so 90 years ago this is what the telephone network looked like.

Going on then, in terms of discussion, and looking at what the Internet can do for the telecommunication development gap, I posed a series of questions and would invite further comments and further questions from the audience.

Why is access to the Internet so concentrated in the developed countries? Is it purely a question of wealth, or are there other factors involved? How quickly will this picture change? In the telephone network, it has taken many, many years for the development gap to even begin to be closed. Something like 27 per cent of all telephone main lines worldwide are now in the low and lower-middle income countries. Back in 1984, when the Maitland Report was published, that figure was only 12 per cent. So the share of low and lower-middle income countries has more than doubled over the last 15 years. But in terms of the Internet, the gap is as wide as ever.

Thirdly, are there any consequences for a slow Internet start for a particular economy? We heard something about the latecomer advantages of countries such as Nepal or such as Kenya that are relatively late in coming to the Internet – for instance, being able to go directly towards advanced digital services. But are there equally negative consequences? Might it be that those countries that don't currently have an Internet will be further left behind?

Fourthly, to pose the question again, will the Internet widen or narrow the gap between information haves and have-nots? Are there any comments or any questions at this point? I recognize a question at the front here…



Mr. Peter O'NEAL

Thank you, Tim. The bribe I should have offered you is one concerning what I'm about to say anyway. For some of us, Tim's work on the development report is, well, the Bible. It's the kind of critical information we've needed. Unfortunately, the problem with the Bible is that you can interpret it in different ways as you only too well know. What I'd ask you to do – I know he's given me a little bit of leeway at the moment to do this – is to take your pens and write down the details of following website, because it will save a lot of trouble. If you've got a pen ready, it's bangaloreit.com. What I'm suggesting is in the context of Tim's question, why is it so imbalanced at the moment? I think there's a power struggle going on at the moment. It's a power struggle which is financial and intellectual. If you want to put it in an African context, one wants to look at Timbuktu back when it was as one of the great centres of intellectual learning. If you want to see it in terms of India or Asia, it has to be recognized that there was a plan to control multinationals and content which predates by 1 500 years Machiavelli who tells you how to poison your enemy's water, i.e. viruses in computer systems. That's the context of what I'm suggesting now. The reason for giving you the bangaloreit.com is that the Bangalore Declaration is on that site. It is a ready-made plan adopted last November by the "computerarcy", for want of a better word, the founders of Silicon Plateau – people from China, from Sri Lanka, from Bangalore, and it's a plan on how to snatch back control of the Internet for developing countries with low-cost systems and low-cost communications. It has to be recognized in the context of that plan, that is we are faced with the old taxation model which was imposed on developing countries by their colonial masters. That's why the Indians and the Nepalese are actually paying the equivalent of £7.94 per minute to make a call for 1 000 km. Because they earn 20 to 30 times less. Somebody in London is paying 30 times less and they are paying a higher price anyway for the units in Nepal. The other warning in

the Bangalore Declaration concerns the indebtedness (the debt trap?). A number of countries are massively investing in telecommunication infrastructure with enormous credits which will create new indebtedness. Sala here just told me that, last year, 25 African countries – the poorest – paid 800 million dollars in routing charges, just routing charges, not telephone calls. So that new debt trap is a serious one. One has to start looking at options like power lines for communication which Siemens are developing, which people in Madras are developing, and that is, using the ordinary electricity cable, not optical fibre, going straight into the home, the shanty, wherever you are. Because people have the electricity first; that's a critical shift that may happen.

The final point I'd like to make is that I think the Internet is completely wrongly configured at the moment. In the next ten years, the five billion people who have no access at all on a regular basis will represent the biggest body of knowledge in the world. Monsanto is only packaging and re-labelling a body of knowledge for genetically modified seeds that already exists for the so-called "stupid, illiterate farmers" in developing countries.

They are not stupid, they simply do not have access to the levers of power. So the Internet must address how you get rid of the concept. It's not just content, it's input. You don't want to know about the streets in New York. If you're a farmer, you want to know how you can collaborate with other farmers to get control of patents. You don't have to be able to read and write to do that. You can talk.

The final point I wanted to leave with you – and you may think I'm a bit mad – is about rats and people who cannot move their arms and legs. I'm suggesting something now, and I was pooh-poohed in 1997 when I said that Bill Gates' empire was going to start to get into trouble – before all the legal suits, before people realized what Linux was doing. The concept has to be adapted such that, let's say, 20 years from now, it will be possible to communicate without using the keyboard, without using your voice, but telepathically to the database. Right, proof: this year, in January, Tübingen University proved for the first time, using paraplegics, that somebody can use the neural impulses in the brain to trigger a signal from the brain, by thought, to control the cursor on the screen. No direct wires from the brain, just the electrical signal. Followed up by research in Philadelphia, where they've had rats doing the same thing.

So, I'll leave that thought with you. But remember, look at bangaloreit.com. There has to be a complete change to the way we're looking at the Internet. Thank you.

Dr. Tim KELLY

In fact, talking of telepathy, Mr. d'Orville has telepathically communicated to me that I think he would like to say a few words next.

Mr. Hans D'ORVILLE

Tim, I really don't like to, but I thought I was supposed to as a commentator! Having heard already one comment from the floor, I thought maybe I'd chime in at this point, rather than commenting at the end of the whole exercise, which would be a little bit more difficult. The remedy I had was to play the devil's advocate, to try to account for some of the presentations this morning and to identify some of the salient points. I want to leave the diplomatic gloves at home also, just for us to analyse a couple of the more apparent aspects. So, let me start.

Taking what Bruno said: the Internet is here to influence and to be influenced by. I think this shows that we are operating in an environment of a number of paradoxes and dichotomies. Whatever we say – for example, is the Internet narrowing or increasing the gap ? – both are possible, however we look at it. Now, on a more practical note, I have been listening to the presentations by our panellists from Viet Nam and from Nepal. I was struck, maybe you were also. The Nepalese gave us five pounds of facts that we almost could not digest, and our Vietnamese friend gave us a generic

explanation. My question would be for both of them, "Where is the difference?" I have read a lot about Viet Nam trying to exercise some degree of control over the growth of the Internet, which, of course, would be at variance with what he has said, while concerning the Nepalese situation, we know less of government policies, but obviously it has grown. Here we have two different models which we have to look at and which will be of relevance for the future. This is a rather undiplomatic comment, but I thought the presentations just beg it at this point.

Now, let me look at the paradoxes and at the dichotomies of where we are at. I said already that the Internet is both widening and narrowing the discrepancy: it is widening because the industrialized countries are racing ahead at a speed which the developing countries can never, ever hope to catch up with, or to leap frog, or to jump start, whatever you want to say. At the same time, it's narrowing, because if nothing were done, the gaps would be even bigger. So, it's a very unsatisfactory situation, but it is a very difficult paradox to deal with.

The second one is, the Internet is a tool for empowerment. It empowers various groups, women, youth, small-scale entrepreneurs, and communities. But yet, it is also a tool which de-links certain groups in society. There are those who know how to use the Internet, who know how to use the machinery, while the others who are far from it will be de-linked from the general development of those in the developing countries who are really managing to catch up with the global trends.

The next dichotomy is that we find many governments paying lip service. Yes, we want to partake in the information revolution.

We want to go along with the knowledge revolution. Yet nothing in their public resources allocation betrays any lesson learned from this indication – on the contrary. The PTTs and everything else in the legislative framework are far behind in order to facilitate that. So, this paradox will have to be addressed. Governments should not only say we would love to be there; they have to make a commitment to taking concrete steps and implementing a concrete programme of action in order to bring their countries to where they want them to be in the middle of the knowledge revolution.

The next point is – and this is very much related to the statements that, yes, the Internet is a wonderful tool for social applications and we recognize it; we can provide long-distance education; we can practise tele-health and telemedicine; we can exercise environmental management; through digital democracy, we can enhance participatory tools and participatory democracy – yes, but killer pricing by PTTs and by governments prevents all that. So, why is there dichotomy? Why do we have these fantastic prices – $5, $7 a minute? Whatever bit on the fax, bit on the connectivity to the Internet? There is something which is wrong. Either we have got our analysis wrong or we are getting the prescriptions, the policies wrong, or the policy makers really don't know what they're dealing with. Now is that a situation which we have to address or not?

Number four: the Internet is a wonderful, innovative tool. We can do anything by now with it. And yet, we are faced by the fact that, for the purposes of the developing countries, there is an absence of true innovation. Where do we have the PCs with solar strips in an environment where there is no energy? Where do we have iconographic software to help illiterates use it, combined with voices and instructions? Where do we have electronic commerce payment settlements which do not depend on banks, and which are not dependent on the credit card environment? It is all very well to say our security must be ensured and, in parentheses, we just need a cash card, but if you need a cash card, you need a bank. If you don't have a banking relationship, you cannot operate. Where are these innovations from industry to help mainstream the Internet and, in this particular case, electronic commerce? Where is the readiness of governments and the private sector to help innovations in the social sector? We need these public access points or telecentres or community centres, however we call them, which are the only hope to mainstream access to information and knowledge in the developing world. I am yet to see, maybe with the exception of South Africa, a dedicated country programme to provide a web, a countrywide web, of these public access points and telecentres. Maybe we will find it soon in Latin America and any of those countries using the long-term policies of the IDB.

The next paradox which comes to mind is: we are operating in a globalized setting. The Internet, of course, is one of the prime factors responsible for the rapid pace of globalization. Yet, we are looking at localization and nationalizing. We have to, because we cannot operate in an environment where 80 per cent of the web pages (maybe 75 by now) are in English. We have to create local content which is of use and meaningful content to the population which is supposed to use it.

Now, speaking about innovation and content, there is one particular concern I have. If you go through the halls here at TELECOM, you see it. You have this convergence craze. And then Bruno said we don't know where we will be in two years from now. I sometimes have the shivers that maybe we are talking in two years about Internet 1 and in two years we see that the developed world has raised its head with Internet 2. They have created web TV with high-resolution digital television and cell nets and all that.

We may seem to be doing something which we call jump starting and leap frogging, but actually we are taking the technology of yesterday, while the technology which is now on the drawing board is eluding us because we don't know, and we don't have the people who could tell us how they would innovate for the developing world because they only innovate for the industrialized world. This is, I think, a major concern for a long-term policy analysis which developing countries would have to carry out.

Our Vietnamese friend pointed to one of the levels of international governance. I would say this is part of the innovation governance. You pointed out the domain name structure which has to be democratized on an international level. I totally agree. But this is not all. We are approaching the WTO ministerial meeting in Seattle, and Bruno is very instrumental in that in trying to bring developing countries into the discussion. We don't even say up to par to be at a negotiating-level playing field. Many developing countries just don't know or are not aware of the issues that are being decided upon and that will determine their possibilities of partaking in the global economy in the next 5-10 years, if not 20 years. We have the same syndrome in WIPO. WIPO is dealing with copyright. We do not know what the developing countries are signing away, or signing off, in these copyright agreements and global copyright commerce discussions. OECD is dealing with international taxation. Do the developing countries have a position on how they would want to deal with e-commerce and taxation? I doubt it. Do we have models of cyber laws? Our Nepalese friend spoke of the need to adopt cyber laws. Malaysia in your region has adopted a number of cyber laws. Do we need to adopt cyber laws? What are they? What is the shape? Can there be some international harmonization on that if we want to operate in a globalized setting?

Financing the revolution is another challenge. Where do we get all the money from? Will public or private partnerships be the solution? Will increased lending from development banks, from the World Bank for example, be the solution? This will be no handout. If you take loans from the IDB or from the World Bank, these are loans which governments and countries have to pay back. So there is not much charity involved.

And yet, most of the technologies which are right now at hand will come and emanate from the north. We have to look at what will be the impact of what our friend said about the open sources, and at other approaches – and maybe the free PC movement. But, it is not clear. There is very little strategy and strategic thinking going on. So, I have tried to highlight some of the points regarding where we have to go, and I don't want to sound too pessimistic. I am absolutely convinced that we have to promote the Internet for all. We need to pursue a strategy. But there are too many items on this strategy that remain open and not as yet not discussed. Developing countries most of all have to position themselves in order to make this happen. I often say a simple formula – what we need is A + Cs: that is, Awareness, not only among governments but also the parliamentarians and private sector, the civil society organizations in developing countries. That is the A. The first C is, we need Connectivity, and telecommunications are only one part. The other part is we need computers, or maybe tomorrow cell phones. The second C is Capacity in institutions. We need the ability to use all these gadgets. If we just put them there and nobody knows how to use them and you are not

trained in how to surf the net, or not trained in how to engage in complex digital e-commerce solutions, it will not help you. You need Content, another C, for language, culture and your particular application purposes which may be in a rural setting completely different that of than that of Switzerland or France or Germany. We need Creativity, we need Creativity, as I said earlier, on the part of industry. Industry cannot be allowed to ignore three billion people on earth and this just as we are celebrating the arrival of the six billionth earthling. We have to drive that point home – that there is a majority of people out there who do not have the tools, the technical tools, which could be innovated to allow them to access the information and knowledge which is the key. We have to go from Creativity to Communications. This means Communications linking up remote communities, removing the stench of isolation and exclusion – all that potential is inherent in the Internet and in other communication tools that can be used to help them. And we need Cash, cash either in the form of equipment or in hard cash in order to make this revolution a reality. Thank you very much.

Dr. Tim KELLY

Thank you, Hans. I've counted at least five or six Cs there – I've got computer, communications, capacity, content, creativity and cash. That's quite a shopping list! Would some of our panellists like to respond to this intervention?

Mr. Ayisi MAKATIANI

If your goal is to provoke, you definitely did succeed. On the issue of the widening gap between the have and the have-nots – and I think we in Africa Online, we do come up with these kinds of questions from time to time – I think it is probably true that the gap is widening or it is probably growing bigger because there are those who have learnt quicker and they are running with it, but I think that the lower end of that gap is also growing. So that the person who is living today at the lower end of that gap is probably living better than the person who lived at the top end of that gap probably 200 years ago, or 100 years ago. I think you have to address it; yes, there are people at the top end of the gap who are going up, and I think that is up to the governments and authorities to create their taxes and other mechanisms of getting resources out of the haves and passing them on to the have-nots in one way or another.

On the subject of innovation, I think that we in the developing countries at some stage have to start looking at being innovative for our own problems. I think the whole idea of sitting around and waiting for somebody in developing countries to come and fix our problems has to change, the attitude has to change. We have to come to a point where we say "what are our problems?" and then decide how we address them. On the issue of financing, I think that, as has been demonstrated in Africa, the return on investment in Africa is 35% per annum or more. Of course, the risks are also higher, but that's what makes up for the return on investment, and those returns are there. I think that if we can figure out ways of packaging our development, packaging what we need to be financed, and if we can try to figure out ways of being able to access the capital where it is, it is possible that least developed countries could start modelling themselves on the Asian Tigers, and there could hopefully be a flow of resources to those particular countries. Again, you did provoke. I am probably going to provoke you back, but, again, that's where I'm going to leave it. Thank you.

Dr. Tim KELLY

I think Danilo has a point he wants to make.

Mr. Danilo PIAGGESI

I just wanted to accept the provocation from Hans to say that he's right when he maintains that the financial aspect is probably not completely considered. I am astonished not to see here colleagues from the other regional banks or from the World Bank to discuss possible avenues of establishing special tools to enforce what has been said so far. We at IDB are at least to discover some other tools like, for instance, non-refundable money for research and development, and trying to be responsible for the awareness aspect of the global revolution. But there is indeed a lack of coordination among the major lending institutions on this particular aspect. I invite other colleagues from other institutions to open the discussion on the subject because it is probably a bottom-up discussion. If we don't secure funds for this revolution, we cannot, give assurances that we could hope to see in the short term the final outcome that all of us wish for.

Dr. Tim KELLY

Do we have any specific comments on that issue which Danilo has raised of funding, in particular the role of intergovernmental and regional development gaps? I see a question or a comment from Ghana and I recognize a comment at the back as well, secondly.

(Delegate from Ghana)

Thank you, Mr. Chairman. I have been listening very carefully to all the keynote speakers as well as to your representatives. They have all described genuine problems with which developing countries are faced. About 15 years ago, when the Maitland Commission was set up, the focus was on universal access. Most of its objectives were on developing countries. Now the Internet has developed extensively over four years – and we have all witnessed how quickly it has developed and how many people are attached to it – which is equivalent to 75 years when radio was introduced, but the Internet has taken only four years to fill this gap, to create this achievement. But I want to go back to this Maitland Commission set up 15 years ago, and compare this to African development or developing countries in respect to Internet development. We can see that even though, following the Maitland Commission, the gap has closed a bit, with regard to the Internet revolution, it has increased tremendously, and I don't see any reason why we shouldn't tackle it from the root. This is a concern which ITU, UNESCO and UNDP should tackle. Number one: when you talk about problems of accessibility, or when we use a yardstick saying that teledensity is so many percentage of the population, we can see that in developing countries we have large families. We have to tackle this problem. We have to educate our people to be able to control their families. In Africa, one speaker was referring to the teledensity of a particular country. You went back about five years and you repeated that the population was growing at the rate of 3.5 per cent per annum. So, we have to tackle it from the roots. The government should also take the initiative and the regulatory institutions should not create obstacles for the development of the Internet. Access to the international gateway should be made easy, adequate bandwidth in the radio-frequency spectrum should be given to the development of the Internet. Because of the nature of new technology coming, we have wireless local loop; now we have companies like Nortel developing the fixed wireless which is near ISDN capacity. When planning frequency bands, we should take into consideration the peculiar circumstances, the cost of laying cables, the cost of laying safe fibre optics and what next available medium we should use. I think this is the radio-frequency spectrum, and this is where we should also pay particular attention to be able to assess the needs of the rural and inaccessible areas so that they also can to have access to the Internet. Thank you.

Dr. Tim KELLY

I recognize a comment right from the back. Could you tell us your name when you receive the microphone ?

Mr. Gundé Désiré ADADJA (RASCOM)

We have been talking about Internet e-mail, but maybe we need to stretch our minds a little way back. In a very ancient civilization, the Sumerians, Assyrians, used cuneiform to exchange knowledge, to sort out their knowledge. Initially, the Egyptians numbered two million at the height of their civilization, with maybe about just 15 000 scribes writing in hieroglyphics, and I am sure that if you scout through the museums or go to ancient Egypt you will see their legacy. Even now, if you go to the post office in some parts of the world, there will be a scribe writing a letter for some illiterate so that he can post it to a relative or someone. In this regard, e-mail will be very important for this scribe because now, instead of writing the letter, sealing the envelope, affixing a stamp and posting in the letter box, reading it is perhaps near instantaneous.

Coming back to realities, we all are aware that after the Maitland Commission, ITU was very instrumental in setting up the RASCOM office here in Geneva for looking into the problems of the African continent. In 1987 we were forking out 800 million dollars per annum in terms of transit charges for communication within the African continent. At that time, a satellite would cost you 100 million dollars to launch and it would last ten years and that you again from such an operation redistributed back to African countries. Now you can modify 800 million dollars a year for ten years or 100 million dollars lasting 15 years for a geo-stationary satellite serving the African continent. We've done a lot, we now have a final agreement with Alcatel and a project is being processed for the launching of a dedicated satellite for Africa whereby, to have rural communications, you need only a 90 cm dish and you have instant communication using solar panels, etc.

Now that's just a brief background. We had an assembly meeting in Tunisia a month ago where the ministers gave the RASCOM project their blessing. Here now we have African leaders, chief executives, who are really influential in the development of 700 million people living on the African continent. I just wish to inform you that heads of delegations and chief executives are invited on the 15th of this month to the RASCOM/Alcatel dinner because this is a development that has a significant importance not only in terms of e-mail, but in terms of just wanting to say hello to a family and other aspects. It is very important. It's for 700 million people. African ministers of communications, chief executives, operators, regulators, come to this dinner because we are about to set in motion something that was started in 1987. I am sorry to divert like this, but this is a forum, it's a development forum, and I think we are focussing on some activities that are extremely important for the African continent. And you, African delegates, please bear this in mind. We have a solution. It's a brilliant solution. We've been going around the regions enforcing this. Sorry, not enforcing this, rather indicating this project. Mr. Chairman, I beg you, please allow me to make this small diversion because this is a development forum and it's most significant and important.

For this reason, I should also like to convey our sincere appreciation for the fact that the Honourable Minister of Sudan mentioned at the opening of the forum that it is a RASCOM project. African delegates, please let's focus on this. I assure you that we have call rates of 10 cents a minute, not $8, not $1.5, because in my country $30 is a monthly salary. For $8 you can feed your family for a whole month. Can I use $8 just for one minute, to say hello, or shall I feed my family for one month? I think we need to be realistic, it's both intellectual, it's practical. We must focus on the fact that we have a small earth. If all 6 billion of us are to give a lot – and the way that the West is developing, we shall all soon be sitting on the moon – then I think we should focus ourselves on what earth we want, as environmental earth, earth as belonging to humans, earth as a very delicate resource. I thank you.

Dr. Tim KELLY

Thank you for those comments and for that information. Are there other comments? I recognize a speaker from, in fact, Nepal.

Mr. Ramesh Ananda VAIDYA (Delegate from Nepal)

I would like to make some comments that have to do with two questions that you raised, the question about a difference in the gap between have and have-nots and the question of the role of government that our friend from UNDP indicated has not been actually developed by the speakers.

In Nepal, the way we see it, as far as financing, finding the resources that are required for the development of IT infrastructures is concerned, is that we already invest a substantial amount of money for telecommunication sector development in Nepal. Our investment plan for the next five years for the telecommunication sector is fairly close to the development investment planned for the irrigation sector. So that gives you some idea as to the level of investment we make in the telecommunication sector, a sector that is quite modern in Nepal.

Now we still have some gaps to meet technologically to expand it to the IT infrastructure. That's going to mean more investment in the sector. The only way we will be able to make this kind of investment for the development of the IT infrastructure is if the investment in the IT sector is going to generate the kind of result that impacts our market. Our market is the 20 million people of Nepal, which is much more than the 16 000 who are currently using Internet services.

We will be able to expand to that market only if we can improve the level of content of what is going to evolve on the Internet or Intranet. The content is going to be a very important part. I think that all government will be more pro-active if some of these questions can be answered by the Internet system. Can it help us in our efforts to achieve respectable economic growth rate, basic commercial areas of development? Can the Internet help us in our bid to ensure equitable selling of resources, for providing social services in the field of health and education? Can it help us in our bid to develop our energy sector in a cost-efficient way? Can it help us in providing government subsidies to people under conditions of transparency and accountability and good governance?

The good thing is, the answer to all these questions is probably yes, the Internet can help us. But first of all, we have to develop the content and we have to develop the infrastructure that will help us to do that. In the case of Nepal, it seems to us is that, first of all, an international backbone already exists. We probably also have to develop the regional backbone and the national backbone within the country. Here the private sector and the public sector will have to form a partnership to develop both a national and regional backbone. That is going to be very important. All this is going to be possible only if we can develop the content that is suited to the needs of people to provide them health, education, government and all kinds of services.

I think the government is prepared to play the role of investor and regulator, but would also have to play the role of the user of IT services, of Internet services. Then and then only, I think the level of expansion and the level of investment that will be required will be worth the attention at the national and government level. Thank you.

Mr. Bruno LANVIN

Reference was made to the Missing Link Report from the Maitland Commission 15 years ago. It is very important to re-read today what was in the Maitland Report because many elements are still there. At the same time, it is also important to realize how far we've gone with the Internet revolution in turning some very well established models upside down. For instance, recommendations in the Maitland Report about the concept of universal service have been a pillar

of the actions of ITU since then, and it still is a major element of action for international cooperation in the area of telecommunications. However, the concept of universal service is probably in need of being revisited fundamentally. It is clear that most of the traditional networks – let's call them, for short, socket-switching type of networks – have been optimized for voice traffic as opposed to packet-switching, which has been optimized for data traffic. The paradox comes from the fact that we always tended to consider that telephony came first, and through dial up and other means Internet connectivity came on top of it. However, though services like IP telephony, we are seeing a reversal of the model, where indeed Internet connectivity could constitute in many developing countries the first type of service required. To some extent, it is the same kind of model reversal that we have seen with cellular telephony, where suddenly governments and private investors started to concentrate less on digging ditches and putting down cable because there were other ways of providing access to information and connectivity.

The second "model reversal" I would like to indicate relates to a point that was also raised when mention was made about trademarks and intellectual property. We recently had discussions with our colleagues from WIPO in which they expressed a concern that, in many Internet-related areas, protection of intellectual property was moving from a legal base type of approach (typically trademarks and patents) to a technology based protection (e.g. encryption). Yet, we have been discussing another type of model which will be the model of "no protection at all". In his keynote address, Dr. Truc mentioned music and MP3 compression. We have there a very interesting example where we see artists and intermediates putting their products for free on the Internet. Why would they do that, apart from being totally mad? They would do that because the source of income has ceased to be the product you sell. The source of income is of an indirect nature. It comes through advertising, in particular. If we think for a minute about this new type of economic model, it has very deep, very profound consequences on the link between the Internet and development. Think for a minute of the WTO debate on taxation which has also been mentioned: if indeed the price to be put on products and services actually traded through the Internet is zero, where is the debate on standstill, where is the debate on fiscal pressure? With the well-known talent of economists to add bring complexity to the level of confusion, I thought that I should add these two additional paradoxes to what has already been said.

Let me spend the last five minutes of this session trying to indicate some of the salient points that came out of the representations and discussions. I shall not attempt to summarize the discussion, which was I think very, very rich. Instead, I shall try to identify avenues for action.

Firstly, In ten years from now we will not be speaking of the Internet anymore. That may sound like a sad thought, but what I mean is that we are going to see at a much faster pace for the Internet what we've seen for telephony. When was the last time you said "I am going to connect to the worldwide network of telephony and speak to my mother"? You said, "I am going to call my mother". You went from a technology-based approach to a verb, and we are going to see the same thing in Internet usage. When my kids talk about the Internet, they do not use the word "connect", they do not use the word "dial up", they use verbs like "to speak", "to take", "to give", "to share". This is where we are heading.

The technological revolution is largely behind us, and we are looking at a social revolution that the Internet can be part of. We are probably underestimating the changes that the Internet will bring to development and to society in general. We are probably underestimating the challenge to invent new models – economic models, business models, industrial models, legal and regulatory models. We are probably underestimating what an economy of sharing means about relationships, between North and South, between businesses and governments. But there are a few things we know for a fact. We know that basically the problems of development have not changed. We have basically in front of us the same challenges we had ten years ago, 20 years ago, 30 years ago, sometimes compounded. The fundamental problems of poverty eradication, of food, of health, of education, of infrastructure, are still there to be addressed in a large part of this world. What has changed are the tools, and the Internet is one of them. We have the same problems, but we have a new tool in our hand and it is called the Internet. What needs to be done is to make sure that the tool is geared to

the problems, that instead of leaving aside those long-standing problems, we do indeed take advantage of the productivity gains, of the innovation capacity, of the involvement of youngsters, of the impact of the Internet on education, to address these long-standing problems in a newly innovative and truly global fashion.

This session has helped us to identify areas where action could take place and I would like just to mention four.

The first one is to learn from experience. Indeed, we cannot expect any textbook or any academic communication or any session like this one to tell us what the Internet should be in developing countries.

Experience will guide us in our action to link development and the Internet. Experience exists. We have heard this morning already of a wealth of experience coming from private enterprises, from the government sector, from international organizations. I know for a fact, from having had discussions with many of you, that there is much more experience in this room than we've heard this morning. There are reasons to believe that indeed something can be done on the basis of such experience.

Second, we also learned from this session that enterprises and governments have a lot to share in making the Internet a force as a service of development. Mutual respect between government officials and private entrepreneurs is a key element to trigger the full Internet revolution in developing countries. Again, we have heard about some very encouraging signs in that respect. The Internet is not a technology. The Internet is a culture. A culture that needs to be built, and to build a culture, you need civil society as a whole. You need governments, you need enterprises, you need schools, universities, you need NGOs, you need trade unions, you need everybody who has stakes in using the Internet for development purposes. The issue of local content, the use of local languages, the promotion of local cultures is clearly a very important element in that respect. Promoting the Internet in schools, promoting the use of the Internet in rural areas, in less densely populated areas, is clearly a goal which need not be just a goal for government. It needs to be a goal shared by all these components of civil societies, including potential foreign investors.

Third, there is no model. There is no model worth importing. There are experiences. The model for the Internet in developing countries needs to be invented. It needs to be reinvented every day. Clearly, issues like setting up the right type of infrastructure, providing access, providing access at an acceptable cost, are vital elements in that context. Innovation and creativity will be crucial in that process of reinventing the models and creating new development- centered and development-originated models for the Internet.

And last, but not least, the Internet revolution is one in which developed and developing countries have a lot to share. The first thing they share is problems. I am just back from an OECD meeting on e-commerce which started yesterday and is finishing today. I can tell you that the concerns of OECD countries, of the most advanced countries, vis-à-vis the Internet and electronic commerce, for example, are exactly the ones we find in developing countries. Awareness is key. Knowledge of the issues is key. Developing countries shall not be discouraged by the complexity of these issues. If we represented the race for Internet connectivity and for Internet usage as a hundred-metres-dash race, I would say that the more advanced countries are about 4 or 5 metres ahead of developing countries. In the work of the Internet, experience accumulated in 20 years can be indeed recreated in a few years in developing countries, because they benefit from the experience of others, from the successes and failures of others. Indeed, if North and South have concerns, worries, fears to share, it means that they may have an incentive to work more closely together at bridging the gap between the haves and the have-nots of information and technology.

If I had one thing to shout from this podium, one thing to encourage the pursuance of the efforts made in your respective countries, in your respective organizations, including those represented on this podium, I would say, keep doing it, keep experimenting and do it with pride and authenticity. Do it with the certainty that the best you can do for the global community is to promote your own

way of doing things, your own culture. Let experiences blossom, let everybody experiment with the Internet everywhere. Together, let us help individuals and entrepreneurs to discover, to criticize and to reinvent this technology. These are some of the points which I believe came out of our discussion. I would not like to leave this room without thanking everybody who participated, that is, of course, our keynote speaker, our panellists and discussants, our moderator, and not forgetting Dr. Mandil, our briefing officer. My gratitude also goes to everybody who contributed, the interpreters and the people who do the background work in a very invisible fashion, and I am thinking of the people in the ITU-TELECOM secretariat, Sunny Bekele in particular. But more than anybody else, I would like to thank everybody in this room and wish you a good continuation of your work here and a very useful Development Summit. Thank you.

DEV.7

Wednesday, 13 October 1999	

DEV.7	The future for private companies in the telecommunication markets of developing countries

Chairperson	**Mr. Hamadoun TOURÉ**, *Director*, Telecommunication Development Bureau (ITU/BDT)
Moderator	**Mr. Ronald DAVIDSON**, *Director*, International, Final Analysis (U.S.A)
Keynote Speaker	**Mr. Shuji KUSUDA**, *Advisor*, Nomura Research Institute (NRI) and Chairman of the Japan Committee of Pacific Telecommunication Council (Japan)
Panelists	**Prof. Rohan SAMARAJIVA,** *Associate Professor of Communication*, Public Policy and Management, The Ohio State University (U.S.A.)
	Mr. Robert PHILLIPS, *Director*, Global Technology Resources, GTE (U.S.A.)
	Mr. Bakary K. NJIE, *Managing Director*, Gambia Telecommunications Company Ltd. (Gambia)
	Mr. Leonard S. DOOLEY, *Vice-President*, External Affairs (INTELSAT)
	Ms. Judith D. O'NEILL, *Partner***,** Thelen Reid & Priest LLP (USA)
Rapporteur/Right of Response	**Mr. Dag NORRBY,** *Information Manager***,** TELIA SWEDTEL AB (Sweden)

DEV.7

Wednesday, 13 October 1999	

DEV.7	The future for private companies in the telecommunication markets of developing countries

This panel will be an opportunity for the many representatives of private firms participating, visiting, or working at Telecom 99+Telecom Interactive 99 to have an opportunity to interact with the representatives of developing countries for the purpose of exploring the issues concerning investment in and development of emerging telecommunication markets. It would afford an ideal mechanism to bring the telecommunication companies of the industrialized and developing countries together. It would also facilitate companies and governmental representatives of developing countries to air their opinions, views, preoccupations, concerns and goals concerning investment in telecommunications in developing countries.

Mr. Eric Nelson of TIA, USA introduced this stimulating and well-attended session of the ITU Forum, Development Summit. Many of the attendants were representatives of the developing countries. In his opening remarks, Mr. Nelson stated that "a revolution lead by private companies is under way".

Mr. Hamadoun Touré, session chairman, emphasized that ITU now priorities private sector partnerships to stimulate acceleration of telecom development and actively is seeking private sector partners for various projects. Following the introduction by Mr. Touré of the panelist, Mr. Ronald Davidson, session moderator in his opening remark noted the considerably increased attention that the least developed countries now enjoy compared to the situation that prevailed at the time of Telecom'95.

In the panelists' keynote speeches a number of important observations were made. Mr. Shuji Kusuda of Japan briefed the audience on the NPO project in which retired Japanese telecom staff contributes to the telecom development in various countries by claiming very low salaries. Mr. Gustavo Roosen, CEO of CANTV took the audience on a tour trough the remarkable development that the Venezuelan telecom industry had undergone since 1991. Another developing country, the Gambia, is also showing a very positive development, which was most interestingly illustrated by Mr. Bakary K. Njie, Managing Director of GAMTEL. He also stressed the importance of honesty in partnerships. Associate professor Rohan Samarajiva of the Ohio University gave some good examples from the regulatory framework perspective and noted that emphasis has to be paid to strengthening the development of frameworks that produce the best for all concerned parties. In her speech, Mrs. Judith O'Neil enlightened the audience on the necessity for actors seeking partnerships to conduct a thorough risk management analysis both on overseas and home markets to avoid mistakes. Mr. Robert Philips, Director of GTE, USA gave the audience the supplier's view of the factors to be considered by any telecom operator in the long-term planning with emphasis on Internet and IP services. These services have to be made available; otherwise the least developed countries' industry and education sectors will not stand a chance in the fierce competition. A possible solution for some LDCs might be to form clusters and in so doing create a more attractive area for foreign investment and partnership. Finally, Mr. Leonard Dolley, vice president of Intelsat, talked about universal access trough satellites.

At 16.20 Mr. Hamadoun Touré opened up the floor debate that formed the second part of the session. The debate turned out to be very lively and productive with some 20 inputs from the floor. Summarizing the debate, the following was noted:

- To attract foreign investments and partnerships, it is important that LDCs market their opportunities and actively seek suitable partners on their home markets.

- Phase the financing – set targets (invest – evaluate – decide – invest – etc.).

- Securitization to ensure provision of universal service by privatized operators (through L/C, performance bond, etc.).

- Allow full competition between the service providers on the market to achieve faster development to the benefit of the end user.

- Encourage entrepreneurship (small and medium telecom industry such as telecom cottages, call centers, manufacture of terminals, etc.).

Thanking the audience and the panelist for their great contribution to a most productive session, Mr. Hamadoun Touré closed the session at 17.45.

Working Group A

Monday, 11 October 1999	

Working Group A	Centre of Excellence Concept

Chairperson:	**Mr. Seydi Ahmed SY SARR,** *Head, Marketing Department*, SONATEL (Senegal)
Moderator	**Mr. Pierre GAGNÉ**, *Head, Policies, Strategies and Financing Department* (PSI) (ITU/BDT)
Keynote Speakers	**Mr. John Ray Kwabena TANDOH**, *Director*, Frequency Management National Communications Authority (Ghana)
Panelists	Afghanistan, Albania, Bolivia, Cameroon, Cape Verde, Cuba, Dem. Rep. of Korea, Dem. Rep. of Congo, Djibouti, Eritrea, Ghana, Guyana, India, Kiribati, Lao, Maldives, Mauritania, Mongolia, Nepal, Pakistan, Sao Tome and Principe, Senegal, Uganda, Vietnam.
Rapporteur/Right of Response	**Mr. Mario MANIEWICZ**, *Regional Officer* in Human Resources Management and Development, Americas Division (ITU/BDT)

Introduction

The meeting of Working Group A opened with introductory remarks by the Chairperson and the two moderators, who shed more light on the centre of excellence concept.

The Chairperson said that he was particularly pleased with the contributions made by Member States during the TELECOM Development Symposium on the Monday, under the theme "New Opportunities in Developing Countries".

ITU initiative

The initiative directed towards the developing world was debated extensively. Members were particularly pleased with the motives behind the centre of excellence concept and made further suggestions as to how the project should be implemented.

Participation

It was unanimously agreed that participation should involve all types of partners interested in participating jointly with ITU in the development process, i.e.

- governments
- operators
- universities
- training institutes
- private companies and industries
- non-governmental organizations, etc.

First centres

With regard to the first centres of excellence established in Dakar (Senegal) and at AFRALTI in Nairobi (Kenya), and the other two that are to be established in the Americas and Asia, the Chairperson, Mr. Mario Manniewicz and Mr. Pierre Gagné briefed the meeting on the aims and objectives of the centres of excellence, to provide high-level training and ITU assistance to senior and top management in support of regulatory telecommunication policies, new techniques and extensive new technologies, along with corporate management techniques to enable developing countries to keep abreast of the fast-changing telecommunication environment.

Participants also noted certain characteristics of the proposed centres of excellence including:

- The need for the centres to be self-financing
- The focus of the centres on continuous training
- The need for the centres to be regional focal points for exchange on best practices
- The need for partnerships involving industry, academic, regional organizations, financing institutions, development agencies
- Possibilities for the centres to be used for consultancy purposes by governments and industry.

Recommendations

The participants recommended that the proposed centres of excellence evolve towards "Networks of Excellence". For this to be possible, it is suggested that:

- The network of excellence (NOE) concept should extend to all countries in a given region.
- The NOE should include regional, subregional and national training and research institutes.
- Each network node will be required to develop core competence from which other participants would benefit.

- Each NOE should have one main coordination body responsible for the overall planning and management of the regional network.

- ITU should help the NOE nodes to continuously improve their core competence and the beneficiary countries to have the necessary resources to take advantage of NOE products.

- It was also noted that NOE products and services address very specific areas of training (e.g. policy, regulatory matters, corporate management and new technologies), and other traditional training areas should continue to be pursued through regular BDT activities and programmes.

Conclusion

The participants expressed very strong and broad support for the four centres of excellence initiated by ITU. ITU was requested to continue working with interested parties in each region to ensure the successful implementation of the network of excellence and of its various nodes.

Working Group B

Monday, 11 October 1999	

Working Group B	Settlement and Accounting Rates Reform

Chairperson: **H.E. Ambassador Anthony HILL**,
Former Ambassador,
Permanent Mission of Jamaica (Switzerland)

Moderator **Dr. Tim KELLY**,
Head,
Operations Analysis,
Strategic Planning Unit (SPU/ITU)

Panelists Albania, Armenia, Bangladesh, Burkina Faso, Djibouti, El Salvador, Haiti, Honduras, Kyrgyzstan, Lao, Maldives, Moldova, Senegal, Swaziland, Tanzania, Uganda,Vietnam, Zambia.

Summary of conclusions and recommendations

- Differences in the costs borne by developed and developing countries in providing the international telephone service were highlighted in ITU Resolution 6 (Minneapolis, 1998). This requires asymmetrical pricing.

- A mechanism should be studied to compensate for loss of revenue with particular attention to the technical solutions and means adopted by ROAs in developing countries and supplements from international financial institutions.

- The role of ITU in helping the developing countries to reform their telecommunication sectors was highlighted. The creation of a mechanism for dispute/conflict resolution should be explored on a priority basis (e.g. for transit payments not made or delayed). The Council Working Group on ITU Reform should address the possible role of ITU in dispute/conflict resolution. This should take account of forthcoming WTO negotiations in the services sector.

- It is extremely important to develop a sound business plan. Developing countries should seek partnerships with the private sector for resolving technical problems.

- Developing countries need resources to invest in and develop their telecommunication networks and to find solutions to provide universal access/service.

- Accounting rates: payments reflecting costs for the utilization of the network should continue to be made to the developing countries, recognizing that settlement rates are falling.

- Transit tariffs should be lower to reflect costs and reductions should be staged more quickly.

- Callback and refiling outside the scope of ITU recommendations and national requirements raise moral and ethical questions. Operators should respect national sovereignty and national telecommunication laws.

- Developing countries should adopt a transition period for lowering their tariffs.

- Countries should inform BDT of their priorities so that they can be taken into consideration, to the extent possible, in the ITU-D Operational Plan 2000. Overall, ITU should be more prompt in responding to the needs of developing countries, including building appropriate private-sector partnerships.

- Developing countries must achieve a better understanding of available software for billing and settlement systems. Activity-based costing can lead to a good pricing strategy.

- ITU-T Study Group 3 will, over the coming period, develop a set of questions on tariff principles. Representatives of administrations of developing countries should play an increased role in the study groups dealing with these principles, especially ITU-T Study Group 3, in order to ensure their inputs to ITU-D Study Group 1 and vice-versa.

- The TELECOM surplus should be used for development activities.

Working Group C

Monday, 11 October 1999	

Working Group C	Multipurpose Community Telecentres and Telecoms for teleapplications

Chairperson:	**Mr. Terrefe RAS-WORK**, *Director*, Business Development (WorldTel)
Panelists	Angola, Armenia, Benin, Bhutan, Bolivia, Burkina Faso, Cameroon, Chad, Dem. Rep. of Congo, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guyana, Honduras, Kenya, Kiribati, Lao, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mongolia, Namibia, Nepal, Niger, Palestine, Papa New Guinea, Peru, Swaziland, Tuvalu, Togo, Uganda, Viet Nam, Western Samoa, Zambia, Zimbabwe, India, Philippines, Cape Vert, Guatemala, Palestine, Cote d'Ivoire, Canada, Djibouti, Mozambique.
Rapporteur/Right of Response	**Ms. Barbara WILSON**, *Officer, Human Resources Development (HRD)* (ITU/BDT)

The participants took active part in the debate and arrived at the following conclusions and recommendations:

- Governments must realize that telecommunication infrastructure in rural areas is essential for socio-economic development. To achieve this goal, the basic telecommunication infrastructure has to be in place; telecommunication networks must be highly reliable (especially if health services, education, etc., are dependent upon them); and they must be affordable.

- It is proposed that an inter-ministerial commission (under the initiative of the ministry responsible for telecommunications) be created, also open to participation by the private sector and NGOs so as to ensure a coherent policy on the use and development of telecentres and teleapplications, as well as to raise the awareness of the impact of ACT applications on the development of other sectors (education, health, agriculture, etc.).

- It was felt that rural telecommunications are commercially viable if there is good management and trained staff, all supported by sound government policy.

- Operation and ownership of telecentres by women is to be encouraged.

- Proper evaluation should be made of existing telecentre projects in order to: a) improve the projects themselves; b) identify how these centres are assisting social and economic development; and c) by providing this information, increase the participation of the private sector in these projects.

- Training for the management of telecentres is essential; and training materials should be developed and shared. Basic training in IT is also necessary for telecentre staff as well as the general public.

- Information should be provided concerning the role and benefits of teleapplications to the social and economic development of rural communities.

- The information provided in the telecentres must be chosen carefully in order to ensure its relevance: it must be developed and/or organized specifically for the information needs of each region.

- As telecentres are bringing urban service retail points to rural areas, the agencies responsible for providing the services should participate financially in extending them to the rural communities.

- Rules and regulations must be defined for the operation of telecentres in order to reduce fraudulent practices.

- It is important to reduce the costs of establishing and running the telecentres in rural areas. For example, import taxes and rates of access to the Internet should be reduced so that the telecentre, which is a social good, can be established and become affordable to the general public.

- ITU and other international institutions should continue to act as clearing houses for sharing information on telecentres on their websites, providing links to other related sites.

- Project documents requesting financial assistance must be well written, providing thorough justifications, objectives, descriptions, indicators, activities, etc. above all, it must be ensured that the resulting project is sustainable after the withdrawal of external funding.

- Each country will have to define its own strategies to ensure that their telecentres are commercially viable and sustainable. Experiences shared by the group pointed to the following:

  – a fund should be created in order to achieve the goal of universal access, with contributions from telecommunication operators, governments, etc. A fixed percentage of gross revenue from telecommunications would be welcome;

  – the community where the telecentre is established should be directly involved in its ownership, financing and management; its operation should be based on sound business principles (e.g. franchising has been a successful model);

  – negotiate with possible local partners to provide funds (such as the local/district administration, religious entities – any entity involved in community programmes), ensuring a return on their investment;

  – consider making the cybercentre mobile, for example by furnishing buses with computers and Internet access and moving them from one rural community to another;

  – offer tenders to those wishing to set up a rural telecentre and awarding the contract to those who require the least subsidies;

  – consider cross-subsidization to reduce tariffs for telecentres.

DEV.8

Monday, 11 October 1999	

DEV.8	Closing Session

Chairperson:

Mr. David MELLOR,
President,
Telecommunication Academy
(United Kingdom)

Mr. Roberto BLOIS,
Deputy Secretary-General (ITU)

Mr. David MELLOR

Your Excellencies, Distinguished Guest, Ladies and Gentlemen

It is my great pleasure to join you at this Closing Session of the Development Summit and to listen to the feedback of the working groups that have debated the issues that were introduced at the beginning of the week.

Reports of the Working Groups A, B and C were presented. (For details of the report see pages 73 to 81.)

I was particularly impressed that the fellows have debated the issue and have concluded the benefits of a network of excellence which was a point that was raised at the beginning of the week, and it is very encouraging to see that the debate has concluded that this is a sensible way to go forward, I would like to congratulate you on that debate. Are there any questions that anyone would like to raise from the floor?

Question

Mr. KISWARI from Syria

On the subject of the regions as defined by the BDT – there are five – I have heard the speakers speaking of Americas, Africa, Asia but they have never mentioned the Arab States. This is a development summit and I would like to see this editorially corrected. Thank you.

The point was noted by the Chairperson.

Mr. Patrick NICOLET, Partner, Ernst & Young

(Recommendations Telecom 95/Interactive 97, Implementation Analysis)

Mr Chairman, Mr. Lagraña, Ladies and Gentlemen,

It is a great honor and pleasure to be here this afternoon at the request of ITU. As previously mentioned, we bear the cost of the analyses, thus we also bear the responsibility of what has been written, and you will have found these recommendations in the report you received when you arrived in Geneva.

I won't enter into the details of our analysis, but simply outline *two background issues* as a contribution to the future action plan based on our field of expertise that is management consulting.

The first key point I would like to mention – and this has been debated all week – is that *the market is the driving force of our industry*. On the operational level, it is quite obvious that market means customers for our telco and IP services. At the Board level, however, market means Wall Street. Like it or not, shareholder value is the ultimate agenda. As you know, managers with a financial background are moving aggressively in the communications business in Europe, for instance with Mr. Klaus Esser heading Mannesmann after being the former CFO of Mannesmann, and Mr. Jean-Marie Messier, CEO of Vivendi, former investment banker at Lazzard Frères. The consequence for developing countries is the imperative need of meeting more than ever these CEOs´ agenda in order to raise an appropriate level of investment. One good example which has been debated and presented during this week is the Grammeen phone venture with the village phone project that is successfully based on the Grammeen Bank experience. This is why in the report we focused on IP and mobile issues, which are growth engines of the industry and very high on these CEOs´ agenda.

The second key point is *track performance of whatever you do*. Observations show that up to one-third of the decision criteria in Wall Street are based on intangible aspects, ranging from clarity of strategy to appropriate human resources management schemes. We have one good example of a

large intangible asset in the telecommunication world – that is, and will be, more and more important – content. Every culture has a wealth to exploit in this regard, and it has already been demonstrated by the strong and very lucrative trend of the world of music. These assets have to be managed and integrated in a clear value chain. That is why we put so much emphasis in this report on performance management.

We are all facing very complex issues and I don't believe that simple recipes will solve them. So be sure of our commitment to further work with ITU on these demanding tasks, and I thank you for your attention.

Mr. LAGRAÑA, Vice-President TELECOM and Head, Forum Division.

Mr. President, you have praised the work of some of the people in this room and before concluding, and before she escapes, I would like to give a great thank you to one person who is sitting at the back of this room but that you all know. Please give a round of applause to Sunny Bekele. Thank you Sunny.

Mr. Roberto BLOIS

Honourable Ministers,

Distinguished delegates,

Ladies and gentlemen,

During the course of this week I have heard innumerable positive comments on the excellent quality of the Development Summit, the useful outcomes it has achieved, and the promising future it has as a clearing house of valuable information for policy-makers, regulators, and entrepreneurs from emerging economies.

We live in interesting times. We live also in times of great challenges. Challenges to the network that has existed for more than 100 years and that is today on the verge of a profound transformation.

New mobile services call into question the future of local and long-distance wireline networks, and offer unprecedented opportunities in the very near future.

Cable television networks are opening up a whole new range of opportunities for the provision of communication and multimedia services. They are also forcing traditional voice carriers to undertake a thorough review of their business portfolio.

Satellite services are emerging as affordable alternatives to terrestrial systems. Few doubt that satellites, due to their ever declining costs and expanding capabilities, will start to play a central role in the early years of the coming century.

In sum, there is a growing range of communication systems through which any number of new communication services could be provided – at increasingly competitive prices – to a mass market of eager consumers.

Yet, many of you would certainly agree with me that among all of these emerging challenges and opportunities, there are none like those represented by the Internet.

The Internet has been growing at an unprecedented pace in the past few years.

Recent data show that it took the telephone 75 years to reach 50 million people; yet it took the Internet only four years to reach the same number of users. But these data are a little misleading.

The telephone network took 75 years to reach 50 million people because it is a real global network of tangible cables that criss-cross continents and oceans.

The Internet, which reached 50 million people in four years, is simply a new communication protocol that is carried to end users over the same telecommunication network that was slowly built over 75 years of arduous work by telecommunication professionals.

The fact that the Internet is nothing without its underlying telecommunication network backbone does not, however, mean that we can deny the overwhelming power that the Internet has to transform the way we live.

On the one hand, this new mode of communication raises, for the leaders of some developing countries, the spectre of cultural domination by more technologically advanced societies. It also nullifies years of network building by the local telecommunication industry, calling as it does for the refurbishing of a network that has not yet completed its life cycle.

On the other hand, the Internet promises to spread a whole range of communication applications across the globe, offering low-priced services to people who have never experienced the magic of telecommunications.

The Internet certainly represents a paradigm shift in the communications industry. It will touch every corner of the policy or regulatory realm, will call for creative, forward-looking thinking from public and private sector players, and will require a new dialogue between all players in the industry.

It will not be possible to tackle most of the key communication issues that our societies face today unless there is an open and candid dialogue between the players in the communications industry.

Universal access, be it wireless or wireline, will always grow slowly if it does not benefit from frank and plain dialogue among consumers, service providers, network suppliers, regulators, and policy-makers.

Other more sensitive issues, like Internet governance, are even more contingent on an open and frank dialogue between the concerned parties.

Tele-applications – such as telemedicine, tele-education, telework and others – run the risk of false starts if there is no dialogue in the marketplace, and if consumers are not consulted over their true needs and requirements.

To sum up, the healthy growth of the telecommunication sector in developing countries in the coming years depends largely on those with decision-making powers, being prepared to accept that we live in times of change.

Given that the Internet and all other services generated by the convergence of digital technologies are here with us to stay, I would like to invite you all to tackle the rise of new services head on.

To try to find ways to exploit the advantages that these new communication systems can provide for the benefit of the people of your nations.

To explore ways in which an open dialogue between all interested parties can flourish.

To seek the most efficient policy and regulatory measures to promote the diffusion of these services, and not to choke their growth by burdening them with over-regulation.

For all of these reasons I invite you all to join us at the next Development Symposium to be held during Americas 2000 in April of next year in my home country, Brazil, so that we can continue to share the experience and knowledge that will bring our peoples a step closer to better and more powerful communication services.

Thank you.

Mr. David MELLOR

Thank you Mr. Blois. It now remains for me to formally close this particular session and to thank you all for your participation and to wish you all a safe journey home. Thank you for your attendance.