

Internet Governance Forum.

Hyderabad, India.

"Reaching the Next Billion(s)"

Access

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>>MARKUS KUMMER: Okay, ladies and gentlemen, we are ready to get started.

I did say I would give a little bit of an update on the changes in the program. There is one workshop this afternoon which has been cancelled. The workshop which was number 34, Medicines on the Web, risks and benefits, has been cancelled. And due to the changes of the host country reception, the association of progressive communication will now have their book launch tonight in workshop room 7. So the APC book launch, "Global Information Society Watch 2008" will take place tonight at 1830 to 2100 hours (No audio) who is presently a member of the scientific council (No audio).

>>KIRAN KARNIK: Good morning (No audio) welcome. I want to start off by making a few brief comments and then handing over the mike to our moderator and then listening to our very distinguished panelists who will bring to bear different perspectives (No audio).

The way I (No audio) in many ways, it reminds me people in India (No audio) and looking in through -- (No audio) and you know that it's -- make it even more exciting.

And yet there's a huge number of people, a preponderant majority would have access to it. Nothing could be more important than to discuss in this IGF the ways and means by which we can increase that access and move, as rightly put, not just to the next billion, but the next billions, all of those outside of this.

And the three crucial aspects which I just want to mention as we move on to our discussions, which I think will facilitate this, these have been put in various ways.

There is one way of looking at it in terms of demand, supply, and development.

I would also want to slice the cake in a different way and look at it in terms of access, connectivity, and affordability.

The access part is the crucial one. And that will depend on connectivity, affordability, and relevance.

Connectivity is really related to technical aspects. And you will hear some discussions of it, which is also crucially dependent on regulation and governance. And I think you will hear the experts talk about it.

The affordability is particularly critical in developing countries. Internet should not only be accessed through the PC or the computer. Today, the mobile and mobile revolution around the world, probably nowhere as much as India, where we are adding 10 million mobile phones every month. Surely, that's the access device of the future.

And there will be more on that as we move on.

On the affordability, another key element is what you might call the business model, where we need to move away from ownership and look at alternatives, whether it's pay for use or alternative business models, maybe even revolutionary new business models, where the user doesn't pay at all. And if you think that something strange and undoable, just think of Google as one of the business models that have revolutionized how a user has access without paying.

Finally, there's relevance for utility. So as I say, connectivity, affordability, and utility, you heard some of that in the last session, the ability to build utility by having relevance, both content and access in ways in which you can reach out to it. It may be language, it may be culture. It may be, as I think you heard the last session's closing remarks, just through -- that speeds up speech to text and text to speech. These are some of the issues I want to stop. I'm sure you will hear many more from our panelists. And I will come back in the end with a few closing comments. I want to hand over to our moderator I will hand over to Anriette Esterhuysen, who is the executive director of the Association for Progressive Communications.

>>ANRIETTE ESTERHUYSEN: Thank you very much, Mr. Chair. Welcome to all of the participants once again.

It's very significant that we are having access -- an access to the next billions as a primary theme in the IGF. I think for many of us, when we embarked on the road of the Internet Governance Forum, we knew that access was a relevant issue. But it took -- I think it took quite a while to begin to establish what are the public policy and the Internet governance issues related to access.

And I think with our panel at the moment today, we really will be able to build on the discussions at the previous two IGFs, and, hopefully, also outline where to go to address the access gap and how the IGF can contribute to that.

I think the one sort of introductory remark that I would make, and maybe to explain why we have structured this session along the lines of demand, supply, and development, is that what we have learned is that these dimensions do not stand alone, and that it's really the interplay between them that gives us the key to addressing the access gap. We need to look at competitive models and we need to look at collaborative models. We need to look at content. And as Mr. Karnik was saying, we need to look at connectivity and affordability. And we need to approach this from a rights perspective as well.

So it brings -- the access debate brings together very many different dimensions of what we are addressing.

I'll briefly introduce the panelists, and then we'll start.

Speaking first, we'll have Mr. Gupta. We are very honored to have Mr. Shri S.K. Gupta, who is an advisor to the Indian telecoms regulator. And he'll speak on demand.

That will be followed by Raj, Rajneesh Singh, who is the regional bureau manager for ISOC, the Internet Society.

Speaking on supply, Jacquelynn Ruff, vice president for international public policy and regulatory affairs from Verizon Communications, and Peter Hellmonds, on my right, head of corporate social responsibility from Nokia Siemens Networks.

And then speaking on development, we have two speakers from Africa. And we have Allison Gillwald, who's the director of research ICT Africa, probably the longest-standing initiative that does research into ICTs in Africa. And our closing speaker will be Brian Longwe, on the far left. Brian is the chairman of a multistakeholder network in Kenya, KICTANet, the Kenya ICT Action Network, and is also involved in AfNOG, the Internet governance numbering organization in Africa, as well as AfriSPA, the African Internet Service Providers Association.

To start us off, I'm going to hand us over to Mr. Gupta.

>>SHRI S.K. GUPTA: Thank you, chair. Thank you, moderator. Good morning to all of you.

When we are going to talk reaching the next billion, we must first understand who are these next billions. They are a sizable but less affluent population spread mainly in rural and semirural areas, economically not so strong, young, with aspiring future, maybe having a limited exposure to Internet or computer or the ICT applications.

These next billion will demand access network with enhanced capabilities and widespread, application and services of perceived utility, supportive regulatory and policy framework, collaborations across industry to support different applications, like e-commerce, e-governance, e-education, e-health, et cetera.

I would like to remind that the first billion was achieved in 20 years. The second billion was achieved in four years. Third billion was achieved in the next two years. And I expect that this fourth billion will be achieved much earlier than that.

CIA and Ernst & Young in a very recent projection for India has estimated that 40% of new subscribers will come from rural area by 2010, and 60% by 2012.

The (inaudible) in India in rural area is 12.72, whereas in outbound, it's 72.47. This clearly projects what is the digital divide. And we had to work together to wipe out this digital divide.

Now, the questions which are of immediate concern is best-practicing wireless in rural areas and reducing cost of the services provisioning, reduce barrier to acquiring telecom services, encourage killer applications, friendly spectrum policy for location of the spectrum, and encourage infrastructure sharing to reduce cost to provide services.

This requires supportive I.P. network expansion, easy allocation of I.P. addresses, allocation of user-friendly even 64 numbers for I.P.-based services, content development in local languages, and best-practicing different applications of common users.

Now, if we look at the government of India declared the policy to increase the infrastructure to reduce the cost of service provisioning and announced infrastructure provider category 1 in 2000. As per this, only registration is required, such people can require no license, and 100%, they can create infrastructure, like tower, nonpassive components so that it can be shared to provide the wireless services.

TRAI also recommended sharing of passive infrastructure in 2005 and also put a lot of emphasis on ensuring backbone network connectivity in rural areas.

In 2006, with the help of USO fund, which collects from all service providers, given tender for 8,000 towers in different rural areas in 81 clusters, and most of these towers are getting ready by the end of this year.

Another 11,000 towers in these rural areas have been ordered in 2007, which will be ready by the end of 2009.

Availability of these towers will ensure that wireless services can be rolled out in the rural area much faster, and access is provided to all who want to get it.

In 2008, emphasis was again laid on infrastructure sharing and guidelines for active infrastructure sharing were also introduced. The government also developed a license fee for rural land line services so that this becomes more attractive and even land line services can go to the rural area.

National e-governance plans have already taken action to enhance applications useful to the subscribers to get number of applications which bring more interest in the users.

Now, the need is to develop cost-based pricing for sharing of the infrastructure, nondiscriminatory terms and conditions, clear policy work to encourage activity infrastructure sharing.

The challenges on economic front are high cost of the customer premises equipment, erratic power supplies in some of the rural areas, and content development in local languages and of perceived utility.

All this can be done with light legislation. That is very important, because we have to attract a lot of investment in this sector, and a stable, forward-looking regulation is a must. Promotion of the competition and technological (inaudible) are some of the concerns which are important. Cheap and

innovative I.P.-based services are another important area. And promoting applications like e-governance, e-education will enhance the ICT for the rural areas.

If you look into it, we are quite sure that we will be able to get the next billion.

Thank you very much.

>>ANRIETTE ESTERHUYSEN: Thank you, Mr. Gupta.

And now to hand over to Rajneesh.

>>Rajneesh Singh: Thank you, Madam Moderator. Just in case there's any doubt, I'm the bald one on the panel when we talk about access, access means a lot of things to a lot of different people. If I -- Allow me to call it the access ecosystem. If I sort of run through a few things that come into my mind when I talk about access, you know, they start from access to financial resources, to actually build systems or buy systems. Access to computing skills and education so that one may be able to use a computing device.

Access to a lot of power systems which you need to run devices, you need access to a computing device itself, access to provision infrastructure, you need access to the Internet once you have the infrastructure. Then you need access to content to actually use the Internet for something productive.

And then, of course, finally, you need to have access to localized content, which is more and more an important factor when we talk about the next billion and the next billions after that, because they will, as my colleague has said earlier, will not be from urban centers. They may not speak the same languages that we have on the Internet at the moment, so there needs to be some emphasis on that.

Now, if access were a Bollywood movie, it would have two villains. One would be bandwidth, or speed. And the second would be the cost of the Internet access for the average user.

Who are the heroes? Well, I hope the heroes can be all of us, the stakeholders who are involved in the IGF forum, governments, private sector, civil society, NGOs, anyone who attends this. I hope you can all be the heroes in this drama called "access," so that we can actually make a difference.

Now, if we look at some of the contributing issues that arise or pose issues around access, limited infrastructure and cost are predominantly the main ones which I have talked about. If you look at a typical developing country, you will see that they are very substantial network development enabling centers, but the rural centers always lag behind. They are always linked to national infrastructure. So, again, you will have infrastructure in urban centers, but there is no real national infrastructure which would cross the other part of the country. And, of course, there are upstream costs. Usually the developing countries pay the most to be able to access the Internet.

There are issues of demanding environment. Terrain is always an issue, particularly in Asia and the Pacific. There are issues with power. Power keeps going on and off. That doesn't help systems running.

Then, of course, there are national disasters in areas like the Pacific Islands, which have a major impact on how systems can run.

We have rural and remote communities where economic viability to support these communities is always an issue. In developing and emerging countries, we have small commercial markets. There is limited consumer spending issue, so that's an issue. How much will a person be able to spend to have a service. Then we move on to human resource issues. Often you will see that developing countries have issues with technical and skills management resources, even if they do train up engineers and technicians, sooner or later they migrate to more developed countries to seek greener pastures. There needs to be a constant education process to see that the skills force, the workforce does remain up-to-date on what's happening. That comes at a substantial cost.

Building for technology for productive use. Yes, you have the Internet, but you also need to be able to navigate the Internet. The Internet has a lot of things on it right now. Some are good, some are bad and some are absolute rubbish. But a user from a developing country needs to have the correct education to be able to recognize threats on the Internet. They need to be able to understand what's good, what's bad. They need to not be drawn into phishing scams and issues like that. So there's a whole lot of education around Internet access, which is very important.

Then, of course, there are regulatory issues. I won't get into that. I think other colleagues on this panel will cover that in detail. And Mr. Gupta has already talked a few points on this as well.

And then, of course, finally there's always this thing called "political will" where we sometimes do not necessarily have the complete political will to actually affect change.

If we get it all right, what does it mean? There are a lot of opportunities that can arise out of good access. I am told I have one minute. So I need to hurry up.

Network expansion, more investment opportunities in infrastructure for the private sector, local and regional hubs which could actually help backbone traffic and transit services. There's content development, infrastructure and hosted services which could come out of it. Outsourcing. And, of course, there are new markets and businesses which could evolve. Take SMSs, for example. In the mobile world, SMS was not a primary design factor, but it has become one of the best revenue (inaudible).

To close, let me ask you some questions. And they go something like this. Are we maximizing what access we have available? Are we putting too much effort into high-speed access when we perhaps can look at some low-bandwidth solutions which are also quite useful in some instances? Are we perhaps too conventional in our thinking? Is there enough incentive to look for innovative approaches to solutions that solve access issues? Are we adequately supporting the research community and industry to make sure they come up with these solutions? Should there be greater support for noncommercial-oriented initiatives, like community networks, for instance? Do we need to have a regulatory scheme in place for them so that that can evolve and grow?

And then, finally, how to encourage and, of course, implement the multistakeholder approach to problem solving. I don't have the answers to all of that, but I hope during the course of this week and this IGF and further IGFs, we can perhaps concentrate on these factors which are a bit more important than talking about access as an issue. We all know access is an issue. But we need to move to the next stage. So thank you.

>>ANRIETTE ESTERHUYSEN: Thanks, Rajneesh. And --

[Applause]

>>ANRIETTE ESTERHUYSEN: And applause is always good.

And -- but this is also a good moment to remind all of you that many of these questions that Raj has just raised and that you will also be raising will have some time for discussion this morning, but we've set aside substantial time this afternoon when access and multilingualism will have an open dialogue session where there can be a lot of discussion. And, in fact, there is a little question form. If it's not being distributed now, it will be distributed later. And if you can begin to record those questions and hand them to the secretariat.

Can we hand over to you, Jackie.

>>JACQUELYNN RUFF: Great. Thank you, Verizon communications is very pleased to be here, and we thank our host for all the excellent accommodations.

We have participated in all three of the IGFs and then the WSIS and so on because we do believe these issues are so important and that the multistakeholder context is critical to our moving forward in all of these areas.

The role that we play in the Internet ecosystem is that we provide a lot of broadband in the U.S., fiber to the home, wireless, et cetera. We have a global Internet backbone, we are an ISP in a number of countries. We provide Internet services to large enterprise customers, all with the assistance of some excellent I.T. software development here in Hyderabad from colleagues.

So we're very familiar with the theme that others have talked about, which is the need for investment for the large amount of capital investment to bring the services to -- connectivity to the next billion. And for that, we need an enabling environment, a public policy environment, that encourages that investment. Some of the hallmarks that I would say of that public policy environment are regulatory transparency and certainty, flexibility for a full range of business models, as others have described, licensing systems that permit this flexibility, and eliminating barriers to foreign investments, such as caps on foreign investment.

I'd like to very briefly highlight five key areas. And what I'm trying to do is what I think the IGF is so good at, which is to share concrete experiences that address some of the public policy issues.

So, first, the point about wireless mobile Internet access as possibly leapfrogging and moving us forward for the medium on Internet access I think is critically important. That clearly raises the issues of spectrum allocation, technological neutrality, breadth of licensing. And we're seeing interesting things, for example, in Brazil, a consultation under way now to try to figure out how to use mobile technology to actually -- they expect that to deliver 75% of the total Internet connectivity by 2018.

Second, for affordability, we need to promote competition in all parts of the connectivity chain: International, transport, gateways, domestic service, cable landing stations, and so on. And, again, we're seeing great steps forward, new submarine cables to Asia, between Asia and Europe. Hopefully, in Africa, those submarine cable systems which now have, I understand, contracts will become a reality for backhaul and cable landing stations, notably in the Philippines, they've introduced competitive back haul, which will be very important to bringing down prices in that area. And for in-country competition, I think there's a trend of unified licenses, with a lot of flexibility. We see that in Kenya and other countries. In Colombia, in Latin America, recently, they moved from having three licenses, each of which cost \$150 million, to opening up that licensing completely at \$1,000 each. You can imagine what a change that brings.

Third -- and we'll hear more about this from other speakers and in workshops -- having the Internet exchange points locally really means the traffic can be exchanged locally and is also incredibly important to affordability. And the policy points there are explaining the value of this, developing the human capacity and expertise to make these really work locally.

Fourth, I think it's very important that we recognize the role of business users, whether large or small, in driving Internet supply.

Because increased Internet usage by businesses in the developing world will contribute to economic growth, create demand that drives supply, serve as an incubator for ICT models that can amplify that growth. Going beyond e-commerce to e-health, e-education and e-environment.

And I would give NASCOM, the organization that Mr. Karnik led for so many years, it's an organization of I.T. large users and so on here in India, played an incredibly important role in supporting reforms in telecom services that were important to then developing the I.T. sector.

So it's important from a policy perspective to have regulatory procedures, decision-making procedures that can provide input opportunities to all stakeholders, including business users.

Finally, we should keep in mind that voice over IP offerings have been some of the most successful Internet applications. So they bring the direct benefit to the users, but again, they drive demand which justifies the investment in infrastructure by businesses. And we're seeing more and more countries that are embracing voice over IP on a competitive basis. That's been a very interesting consultation right here in India on trying to move in that direction, seeing some new regulations in Chile that will do that as well.

So I throw out these as examples of some very concrete experiences that I think are out there, that we can exchange here at the Internet Governance Forum, and all learn from them.

The trends are actually very promising in terms of the amount of connectivity going to the developing world being on the increase, the usage being on the increase primarily in the developing world. The question is how can we redouble the efforts and build on the experiences that we share as the multiple stakeholders and really amplify the success that we're already seeing.

>>ANRIETTE ESTERHUYSEN: Thanks a lot, Jackie.

Peter, over to you.

>>PETER HELLMONDS: Thank you, Anriette.

Ladies and gentlemen, it's wonderful being here, I must say, and that despite and maybe also because of the happenings of the last week in Mumbai. Very sorry. Our hearts are with our Indian friends and colleagues.

I think it's wonderful being here. Someone actually said we are the brave heros. We come here.

But I think really the charming people of India, it's a wonderful country. I have been traveling around Delhi yesterday, and here at the IGF, the third of its kind. I find myself among friends. I almost call you family.

But let's talk about access from the supply perspective.

You know my company is Nokia Siemens Networks, and we're a major supplier of telecommunications equipment to many of the big operators around the world. In fact, we supply to customers in around 150 countries.

So we have a little bit of an understanding of the issues that surround our customers and their customers.

Also, as regards to India, we have got major operations in India. Actually in 52 locations. So it's very dear to our heart, including one of our board members residing here in India.

Anyway, I think we do agree on a couple of essential findings here with my colleagues on the panel, and those findings have come out of the multistakeholder process during the WSIS and the IGFs.

So I have three points first to make.

First, for there to be increased access, we need a sufficient supply and an effective demand. And a functioning market that is competitive is very essential for that to be able to be settled.

Because competitive markets, they have shown that they provide for more choice to consumers, both for individual households and for businesses, and also for governments and NGOs.

So competition drives down prices, it increases choice, and it expands access.

And there's been quite some substantial research actually coming out of the World Bank recently, as recently as February this year, that looked at the impact of competition for access. And it's a very essential component that, overall, introduction of competition -- in the example that came out, I think, also in 2006 was overall, if you increase competition in sub-Saharan Africa, you could, throughout the continent, increase access by 100%. That's an important part. So if it brings down prices, it improves the affordability and it's one of the main factors that drives demand. And from a supply perspective, if we want to think about expanding the market, we need to realize we really need to drive down costs, provide for affordable access solutions, and that's something in the business world we call lowering the total cost of ownership. This may not sound much like this is an Internet governance issue, but it is. It's a key element in how the regulatory and policy environment structures the incentives in the market.

So the second point is we realize that simply building the networks alone is not sufficient as there are other factors affecting demand, such as the awareness of people, their incentives, their motivation, and the capabilities. That's not just an issue for the end users of the services, but also for operators and regulators, and other players along the supply value chain. Even in the developed world, there was not just a simple "build it and they will come." No. It required a great amount of investment into awareness raising and into capacity building and into developing the applications that provide for those incentives and motivation in order for us to be able to drive up adoption rates.

So when we look at building these networks for those at the bottom of the income pyramid, which is where many of the next billions of the users are going to come from, we will need to target not just to lower the total cost of ownership, but we'll also need to think about those other soft factors. And the Internet governance issue here is the need to provide also Internet governance capacity building to regulators and to governments.

The third point I want to make is that we're also aligned in the understanding that next to the increased coverage of networks and capacity building, ability of applications that need to be adapted to the needs of the end users, and also end users in rural areas, is key to improving the developmental outcomes. For example, in agriculture or in health care education that has been mentioned already, or in the efficiency of the delivery of market information or in the provision of governmental services to business and users alike.

And I am very happy that Mr. Gupta has outlined the use of the USO funds to build towers and to increase sort of the infrastructure. However, if you look at these other two issues, if we need to think about how the end users are using it, we need to say, well, just having the infrastructure, the network, doesn't make increased usage of it.

So in order to drive up demand, we also need to think about the customer premise equipment. And I think it was mentioned earlier that the price of customer premise equipment might still be high in relation to income in some countries.

Think about perhaps using USO funds in one way or the other to support the buying of CPE, of customer premise equipment.

I know in my country, in Germany, at least when normally everything that needs to be taxed, there was a couple of years ago they made the decision to exempt ICT equipment, telecom, computers, Internet access, et cetera, exempt it from tax.

And those are issues one can think about to improve the capacity of people to use the services.

I wonder, how much time do I have?

>>ANRIETTE ESTERHUYSEN: None.

>>PETER HELLMONDS: Okay.

So I'll stop here and I'll reserve the other issues that I can talk about for later, and I'll give it back to you, Anriette.

>>ANRIETTE ESTERHUYSEN: Thanks very much, Peter. And we will have time for more discussion.

So we have heard from two speakers on demand and supply. And now over to development. And hopefully you can also pick up on some of the points made by the previous speakers.

Allison, over to you.

>>ALLISON GILLWALD: I did have a presentation. I'm not sure if it's coming up or not, because I really just wanted to very quickly share with you some slides that are the outcomes of an initiative to move towards ICT evidence-based policy on the continent in Africa, which really, I think, provides a reality check about what needs to be done from the point of view of access.

I'll just carry on in case it doesn't come -- is it up? No.

Okay.

I just want to speak firstly, many people have spoken about some of the policy and regulatory challenges that exist there. I think there's been a lot of presentation on the supply side, evidence of policy failure on the continent. But what these next few slides are going to do is show you some of the demand side, evidence of policy and regulatory impacts on citizens in Africa.

And many of these are as a result of poor institutional arrangements and poor governance. And I think that's really the challenge from the point of view of the Internet governance, that if there are any lessons from telecom reform, it's that you cannot simply graft reform or governance around reform onto existing governance systems. They have to be owned, they have to be developed organically. And I think if one looks at the sort of failures of market reform in telecommunications and the resulting high prices that they have produced, this is really because the reform model has neither become a market model nor remained a strong public utility but remained somewhere between.

So I think if one looks at the importance of getting the correct institutional arrangements, it's looking beyond simply a moment of flexibility where you have from a leadership point of view or some other local political dimension a positive development that would open up the markets but that could change again at any time. So it's about really institutionalizing those arrangements and ensuring transparent governance. Because without those you will continue to have the policy and regulatory risk that will not result in investment.

And the other thing about that is I think with the emphasis on markets and competition, one asks, if the evidence is so strong that competition produces these results, why has it not been done? If it creates demand and brings down prices, why hasn't it been done? And that's really a political challenge, it's not an economic challenge, that one has to look towards the governance systems and how one might reform those.

So if we go to the next slide, the other point I wanted to make there is that the importance of that is as we look to strengthen markets, we have often compromised the strength needed in government and state in order to create enabling conditions for those markets, to create competent regulators that can create, for example, effective interconnection environments for people to come on board and offer services.

So if we begin to think about connectivity as a public utility-like power, et cetera, in the kind of Information Society model, how far away from that are we in Africa? And just quickly to look at some of the infrastructure options that have been promoted. Sorry, the slides are a little bit out of order so I will start this way around. Anyway, the point is we have very, very little, if we are talking about extending existing fixed-line networks, we have very, very little penetration. Of that, it's primarily business, and also if you look at those figures, almost 100% residential.

So the fixed line network is not an immediate solution.

What are the challenges there in terms of getting the necessary backbone buildout that we need in order to offer those services.

If you move onto the next slide, just some very quick points from this household survey across 17 African countries that look at both those (inaudible) services and those office services, you will see even in terms of the willingness of those who do not have services to come on board, they cannot even meet the cost of line rentals. So until the issue of affordability is addressed, this is simply not an immediate solution in terms of broadband access.

If you go on to the next slide, you will see that, again, even mobile, much excitement about mobile, most of the telephones -- many of the telephones in Africa are not enabled for Internet usage, and even if they were, very few people can afford to use them. Very few people can afford to use GPRS services, never mind 3G services. If you look at that, that is evidence of the fact that people are spending just under 20% of their income on mobile services. So until those mobile prices come down, all the excitement about mobile really needs to be treated much more jaundicedly.

If we can move on.

Just to say that, what you can see from that slide, which you can look at the Internet, look a bit more closely, is even with moderate price reductions, this is on voice calls, you can bring millions of people online. So those bottom of the pyramid type business models you were speaking about really have the potential of lowering the cost of equipment, and lowering the cost of services could bring down costs enormously and bring people online with potentially, you know, various e-mail type options if not full broadband.

If we can move on a slide, please.

Just to point out what we can be looking at in terms of more traditional notions of access and connectivity, the home computer there is less than 3% of people have actual connectivity at home. And until you get these figures up, you simply don't get that critical math that is required for the positive network effects to come into play that you will see business benefits, et cetera, et cetera. So we are way off those at the moment.

However, there is wide awareness of the Internet. Between -- at least 50% across the top three or four countries, and as I said, it does go down but still significant awareness of Internet, although usage is only at 15%. And that is happening at largely through cybercafe usage, if you look at it in the next slide, through public access, through work and through educational areas.

So it really requires an enormous innovation around how we think about policy, how we create opportunities for access, wireless access, service neutral licensing that can cut through some of these barriers. These are a result of very often protected incumbents. And basically, without those kinds of adjustments to the policy environment and to the regulatory environment, we're not going to see anything like this vision of a sort of public utility connectivity that we need for an Information Society.

>>ANRIETTE ESTERHUYSEN: Thanks very much, Allison.

Brian.

>>BRIAN LONGWE: Thank you very much, madam moderator. If you please keep the slides up and flip to -- flip forward a couple of slides.

Okay. Well, we'll get started.

The first thing I would like to talk about is just to say that Africans and Africa in general in developing countries will tend to share resources. In rural areas it has been found that one phone can serve up to ten users. However, traditionally, tele-density has been used as a measure of access, of the extent. Yeah, this is a picture which shows sharing of resources. A little bit extreme, but nevertheless, sharing of resources.

Just hold it on that slide for a moment.

So tele-density has been used as a measure of access. That is the extent to which communication technologies have provided a community.

In the past, Africa as a region has recorded extremely low fixed-line teledensity of below one percent. That is less than 100 lines per 100 people. Believe it or not, this is still the case. Africa's tele-density is still at below 1%. However, when one incorporates mobile lines in the tele-density analysis, the results are not only incredible, they are actually amazing.

As of 2007, Africa's mobile tele-density stood at an impressive 23%, or 23 lines per 100 people.

There was a recorded growth in mobile users from 128 million in 2006 to over 215 million subscribers by 2007.

This represents an annual growth of over 46%.

As Mr. Kiran Karnik mentioned, in India there is growth of over 10 million phones every month. So in developing countries, I think mobile is actually the silver bullet for the access equation. Given the fact that most operators have rolled out GPRS and EDGE coverage across most of their networks, as well as deployment of 3G access across their larger markets, it's entirely feasible, actually, that mobile and not broadband might present the opportunity for increased access.

Another key element thing that is crucial to the growth of access in developing countries is a suitable environment the dispersion of relevant content and applications that meet the day-to-day needs of the populace. Internet exchange points are the primary critical ingredient needed to create these conditions. By keeping all locally originated and requested traffic local, Internet exchange points serve a crucial role in enhancing the user experience, lowering operational costs, and providing a suitable framework for the growth and development of the Internet in general.

While many developing countries have adopted policies and regulations that encourage and promote competition in the mobile sectors, which has resulted in continued growth, the establishment of IXPs has received a relatively low priority despite the significant impact that such simple infrastructure presents to the community.

Access enhances the interface between government and the citizen at the transactional level.

I will give you an example. The Kenya Revenue Authority last year suggested that the Kenya Internet Exchange Point receive critical infrastructure status with 24-hour armed security guard due to the fact that 100% of all import/export declarations and documentation transit the exchange point via the revenue authority's web-based platform.

Going back to mobile, another example of impact, Safaricom, a Kenyan mobile operator, introduced a money transfer service or a payment service called M-PESA less than two years ago. M-PESA now has over 4 million subscribers. Within one year, M-PESA has been able to sign up more users than Kenya's entire banking industry signed up within a century of banking. Safaricom reported that over half a billion U.S. dollars has been transacted over their platform within 18 months.

What are some of the key policy concerns? The financial services and communications regulators in Kenya decided not to subject M-PESA through treating their services as a bank but chose to perceive M-PESA as a nonbank payment service. That decision has today affected and continues to affect millions of lives. Regulators can either promote innovation, access and development or hinder it.

Kenya's communication regulator has completely opened up their communication sector, and this applies the same to many other countries in the region, including Tanzania, Uganda, and Rwanda, by fully liberalizing every area. But providing structure through a technology neutral, unified licensing regime that separates facilities, services, and content, thereby spurring investments and providing investors with many different options in the different areas in which they can invest.

In Kenya alone, over half a billion U.S. dollars has been invested over the past two years.

And my closing point really is that relevant content drives demand, at the end of the day. We could build all the access networks we need but unless there is relevant content for users to engage with, there will be limited access.

Safaricom, M-PESA met a basic everyday need and this has driven the increased use of their mobile platform by touching the lives and livelihoods of both the rural and urban citizens.

Thank you.

>>ANRIETTE ESTERHUYSEN: Thank you very much to Brian and all the other panelists.

I would like to invite members of the audience to -- at least we can take five questions. If people can line up behind the microphones.

And some questions from me as well. In fact, I am very glad that Allison asked the question, that if we know what to do, if we know which regulatory models work, if we know which technical solutions work, why are things, in fact, not working. So I'm very glad. So I want to reiterate that question.

I also think that there seems, to me, an issue that we need to address. Which is when we talk about access and filling the access gap, are we talking about creating more consumers of telephony and Internet services or are we also talking about creating citizens, creating empowerment, entrepreneurs, researchers? And I think something that is often forgotten in discussions about access in developing countries is the reality that the Internet is now shaped by user-generated content.

The Internet is not populated by passive users who wait for other people to generate useful content. What has been responsible for the explosion in Internet usage and social networking platforms and multimedia is users creating content that is relevant to themselves and those they associate with.

And I very rarely hear people talk about that model in developing country context.

And will mobile phones as handsets which create access for so many people address that gap, or are we talking about a different divide, with more billions connected but connected in a lesser way and in a less empowered way.

So I would like to you address that.

I think the other point that it would be good for you to talk about is, I think the point has been made that competition works, but also that it's not enough. But public access, are we no longer talking about public access? Is there space? I think Rajneesh mentioned that. Access in libraries, access in educational institutions, research institutions. Is there still a responsibility for a public policy forum like this to look at the role of public access and how it can be fostered?

Are there any questions from the floor?

Move quickly, please.

And please identify yourself.

>> Yeah, I'm (saying name) from ISOC, India Chennai.

Now, the reason trends are more towards commercialization of Internet, and we are talking about businesses talking more about models such as (inaudible) Internet, which is eventually likely to increase the cost of Internet access. Do you feel that such trends would actually take the goal of reaching the next billion backwards and limit the expansion of access?

Thank you.

>>ANRIETTE ESTERHUYSEN: Thanks.

Next question.

>> I am (saying name) from IT for change, India.

I wanted to draw the attention of the panel to the theme of "Internet for All" and its origin from the theme "Education for All," which is also a U.N. theme in the 1990 Jomtien conference. And when we say "Education for All" or "Internet for All," there are two components to that. And I thought I heard the panel talk more on one aspect, which is reaching the next billion.

To reach the next billion, you need to make sure prices are reduced, that markets are more competitive, that government -- the governance systems are okay. But somehow I felt when you said "Internet for All" are you really meaning for all? When people talked about "Education for All," they were very clear they meant the last billion or the last mile. And that's traditionally development talk has always been about the last mile and not the next mile. So it's disappointing to hear the IGF focus exclusively on the next billion because the next billion is what the market will reach, but if you want to reach the last billion, you have to look at public investment, you have to look at public policy, you have to look at Internet being a public good just like education is. And I thought nobody in the panel other than Anriette spoke on any of these things. I would like to hear more about these issues from the panel.

>>ANRIETTE ESTERHUYSEN: Thank you.

Do we have anyone else?

>> Yes.

>>ANRIETTE ESTERHUYSEN: One more, and then -- hello.

Thank you.

Do we have anyone else?

>>:Yeah, picking up on the previous question, the last problem of the developing countries and the villages, it is the best technology, is it the optic fiber? Or is it GPRS or is it WiMAX? What is the experience and what are the views of the panelists?

>>ANRIETTE ESTERHUYSEN: I like that question, because it was short and to the point.

Can we take two more and then I'll give it back to the panel.

That gentleman over there, and that gentleman over there.

>>:Thank you. My name is Patrick (saying name), from Uganda, I work with the Uganda Communications Commission. I was particularly impressed by the presenter from India who talked about India building towers using the infrastructures fund.

I was just wondering -- it's a very good idea, and I admire it.

I was just wondering how these towers fit in the business plans of the service providers. I'm thinking of a situation where you might go ahead and build towers, and service providers may not have immediate plans to use these towers. And given the fact that the private sector tends to be -- tends to keep their strategies confidential tier themselves, they may not want to reveal their plans in building out their networks to other parties, how do you handle this delicate situation?

I thank you.

>>ANRIETTE ESTERHUYSEN: Yes, I'm glad you raise that. Because I think we did hear about infrastructure sharing, but it would be useful to hear how India has been so successful in that.

And then the final question, over there.

>>Raul Echeberria: Thank you, Chair.

May I speak in Spanish? Because I see that very few people are using the translator equipment. So...

I think that this idea of connecting the next billion is excellent, but it gives me the feeling that we're actually talking about the same thing year after year. And until we actually carry these goals to more tangible levels, I'm afraid that we're not going to be able to achieve any real progress. For example, like I'm from Latin America. I would like to see 100 million new users connected to the Internet in my

region. At the same time, I would like that those -- each community, each country, can take these goals to local levels.

I think if we keep on talking about things in general to talk about connecting one billion people, without making a difference about where these people will be, for example, are they going to be in China, Caribbean, or in some other area of the world, then we're not really actually attending to the requirements and needs of the community.

So I would specifically like to propose that, in my region, I would like to have plans drawn up to be able to meet a goal of connecting 100 million in the Latin American and Caribbean area, and I think this should be done by other regions as well.

>>ANRIETTE ESTERHUYSEN: I think that's a very important point. If we're just talking about numbers, I think we do fall into this trap of just creating more consumers, not actually changing the configuration or how it's affecting inequities in the world more globally.

Can I invite the panelists not just to address the questions from the floor, but to one another.

Anybody want to start? Mr. Gupta.

>>SHRI S.K. GUPTA: First of all, I would like to take the question directed to the telecom regarding the infrastructure sharing.

The first thing is that how to build the infrastructure. For that (inaudible) and who shall ask for the minimum subsidy from the USO fund is given to create a tower. There are identified clusters where towers have to be created, and their locations on all these things have been fixed by the user.

Simultaneously, user administrator also calls for the service providers who want to provide service in that particular area.

And subsidy is also given to provide services in that area. This particular service provider has been identified based on the subsidy required by them. And three such service providers are mandated to provide the services on these towers for five years. So tower manufacturers are not supposed to search for the service provider who will come and share with them. They will be identified by the (inaudible).

Subsequent to the five year, it will be the mutual agreement between the service provider and the tower person, whoever erected that. And this is working very fine in these particular areas.

If you permit, I will also comment on one particular issue that has been raised that none of the panelists are talking about, the last billion or last person on this.

No, actually, we are not talking about the next billion. We are talking about everybody who is there. And that is how emphasis is more to develop the infrastructure so that the access reaches to everybody. And that is where our concern is, mainly on the cost of the device which has to come down so that each and every person can take that. Though, for a few people, there is possibility to give some sort of subsidy from the USO fund. But that cannot be extended to each and every person. Therefore, the

target of IGF, and particularly in the Indian government, is to reach to the last person and not to a few limited persons.

Thank you.

>>ANRIETTE ESTERHUYSEN: Thank you.

>>PETER HELLMONDS: Thank you, Mr. Gupta. I would like to pick up on the same theme. And also was mentioned by the gentleman from ISOC. The question is, is it the last mile or is it the next mile.

I think when we're talking about the last mile, we're not talking about sort of the last end. And you're right, the last mile really means how do you get from the tower to the person, or how do you get from how far you have built out the network until you reach the end user?

And I think that ties in with a question that I'm not sure who posed it or came out of that corner, about what's the right way of building out the network, is it better to use optic fiber or WiMAX. And I think they're not exclusive. They are complementary.

What you find is that the mobile network is very efficient in bringing very quickly the network into the countries and into the regions, and, actually, also to the last mile. Because you do not have to dig up streets. You do not have to lay cable. And I know that in some countries -- and Raul mentioned Latin America -- our colleagues from Rio de Janeiro tell us that the Rio mafia addition out and steals the cables in the evening to sell it back to the operator in the morning. So cable on the last mile may not be the best thing. And wireless, you don't have something that can be stolen maybe, and you just need to guard the towers.

So WiMAX is then a way of extending the reach of the wireless over longer distances. But, really, in the end, if you want to transport Internet traffic and you want to increase bandwidth, even WiMAX will have some limitations of capacity. And the more users you are connecting, the more limitations you will find.

In the end, you want to have a backbone. And the backbone today, the top of the line is you go fiberoptic. The nice thing is that you can put fiberoptic where people will not want to steal it. You can, for example, run it along high-power electric lines, because there's no interference between the electric and the optics. Before, when you try to put a telephone cable next to high-powered energy line, you couldn't do it because of magnetic interference. You don't have that with the optic. There are different ways.

And I think what we try to encourage is also for the international governments to encourage thinking across sort of the industry and the sector. If you want to lay a national fiber backbone, where do you lay it? You probably try to figure out where's the next highway being built? Where's the next railway being built? Where do you put water ducts and so on, and make sure that, hey, when you dig up the street once, make sure you lay even an empty duct. If you don't lay the cable, but lay an empty duct, that way you can run a little robot through that pulls the cable behind. And these things, now finally in Germany, we got around that. The government encourages whoever builds out any kind of infrastructure to share information about where the next thing is going to be built, and to provide for operators and so on to

say, hey, I would like to lay a duct, I would like to lay a cable while you're digging so to save on this extra cost. And I think that also will be a means to bring down cost. I will stop here.

>>ANRIETTE ESTERHUYSEN: Thanks, Peter. Those are very useful comments.

Allison, did you want to respond? And then Raj, over to you.

>>ALLISON GILLWALD: I was going to respond to the point about which technologies will address the point of the last mile. I think with wireless technologies, we don't have to be as fixated with the last mile as we were before. But, in fact, what we need to be fixated with is the backbone that will enable the last mile, you know, to rapidly deployable wireless technologies. But the biggest issue is there is actually creating the correct framework so that I think what we -- we shouldn't really be talking about the technologies, because those will change, as we'll see, when you meet next, we'll be talking about another technology. What we should be doing is speaking about enabling licensing environments, service-neutral licensing environments, regulation that would allow whatever becomes available to be deployed.

Now, what that presents is, of course, an enormous challenge to those who are required to invest in the backbone. And I think that's an area of discussion that we really need to spend quite a lot of more time on.

Historic -- over the last decade or so, we've been arguing that we should open up network licenses in order to get competition, in order to drive down prices. But in many countries, that hasn't happened. In fact, those countries haven't seen the kind of backbone investment that they would have liked, for a whole set of reasons, possibly policy and regulatory risk, but sometimes just because of smaller markets and those kinds of things. So the question becomes, how do you create or how do you incentivize the rollout of this backbone we do need for the wireless to connect to. And I think, you know, that's a very sort of -- beginning to talk about revenue sharing, what can be done. Are we talking about in creating this connectivity utility in order for there to be public access for there to be any point of access for the next billion citizens to come online collectively or not, is that something that is a public utility, but, you know, a privately funded one? Is it a public utility that the state now decides to put the money in and sells off at a fair price? I think these are the kind of models that we need to look at to see the necessary backbone rollout that we need in developing countries. It simply isn't there.

>>ANRIETTE ESTERHUYSEN: And just to interject briefly, I think what both of you are talking about is that there's in fact a set of very complex multistakeholder interactions and relationships that need to take place. And I think that we need to acknowledge that while competition works, on its own, it's not going to achieve these complex interactions and decision-makings and planning. And I think human beings struggle to have more than one idea in their head at the same time, policymakers and practitioners. But that's really what is necessary.

You can comment on that, and then Rajneesh. But I think one of the speakers from the floor also mentioned this, we do need to approach, I think, the Internet as a form of public interest good. I don't

want to be controversial and say I believe it's a public good. But even if you are from the private sector and you don't see it as a public good, you definitely recognize it as in the public interest.

And so these negotiations should use that as a starting premise, I would propose.

Peter, and then Rajneesh.

>>PETER HELLMONDS: Thanks, Anriette. I think I'd like to pick up on two of the things. The one is the competition argument, whether it alone is sufficient.

What I saw, I did, really, some -- look at some of these World Bank research papers. And the things that come out is that competition alone already is a good thing. Even if you don't do anything else, if you just introduce competition in the network provision and in the ISPs, we already increase access by a large amount. But if you complement competition or introduction of private investment, complement it with the introduction of an independent regulatory authority, and an independent regulatory authority really meaning not being captive by sort of the incumbent or by a certain stakeholder group, but being truly independent, and that independent regulatory authority providing a certain lightweight regulation, but clearly laying out the rules of this is how you -- we want you to operate, that's the rules of the game, that is what Jackie referred to as the transparency and clarity of the rules of the game. In combination, the research from The World Bank found out that competition plus regulatory authority is mutually reinforcing the beneficial effects. So that's on the competition argument, even without the regulatory, it's beneficial. With the regulatory on top, it's even better.

The other thing was about the -- what were you saying about the backbone and the interrelationships?

>>ANRIETTE ESTERHUYSEN: I think Allison made the point that with innovation in technology, we can be more flexible and less concerned about what happens at the last mile, but what is imperative is that there's an effective regional, national, and international backbone to support that. That was your point.

>>PETER HELLMONDS: I saw a good example in an African country. And that's referring to the question, the private sector isn't really sharing their information. In effect, yes, that's part of the competitive game, you don't share your plans with the competition. So sorry for that. But one of the African countries does have a good licensing regime, very open. And one of the customers we're talking to is building out a national backbone on optic fiber. And the interesting thing here -- that ties into the question of infrastructure sharing and the question that Allison had about is it a public owned or privately owned. That's a private operator. He runs the backbone, he put the fiber across the country and actually wants to interconnect to the next country. And he's willing to say, look, I have enough dark fiber, whoever wants to interconnect and use the backbone, I sell you capacity on a purely commercial basis. But it is a workable model. And we have seen that in many parts of the world, where, in the last boom years in the early 2000, where companies were buying and putting in dark fiber, there's a lot of backbone capacity in the world that you can rent, you can buy, you can say I need that much capacity and you go to a commercial provider. So it doesn't need to be a public sort of ownership. It can be private ownership, but it can still contribute to a public good.

Thank you.

>>ANRIETTE ESTERHUYSEN: Raj and Jackie. And then I also ask the panelists to begin to make their closing remarks. We did start 20 minutes later. And so I ask you to bear with us for a few extra minutes. But we'll finish soon.

Oh, we have to finish at 12:30 sharp. Okay. So, Raj, can you make your input, and Jackie. And then also combine that with your closing statement.

>>RAJNEESH SINGH: Okay. Thanks, Anriette.

So I'd just like to pick on a few things. A lot of questions were asked. A lot of statements were made. Anriette, you mentioned the user-centric Internet. The Internet Society talks about the user-centric model or UCI that we refer to.

Can I just reiterate that that's a very important part of how the Internet evolved, how it developed, and how it will continue to evolve and develop in the future.

We have -- someone also mentioned that today's content is all user generated.

The word user comes in there again.

So it's the user that's driving the demand for Internet services.

Now, having said that, Raul mentioned that the next billion and where are they actually coming from, that's a very important point.

The Internet Society again has been making some efforts into holding regional discussions, and can I just suggest that the IGF, being a global forum, it's as important to move these discussions at the local and regional level so a bit more can be done. We cannot expect the whole world to turn up to an IGF for various reasons. If we are able to have regional and nationalized discussions of a similar nature, perhaps a little bit more can be achieved with a lot more participation, because participation is always an issue. Even this IGF has suffered from participation, as we all know, due to various factors.

And finally, just I'd like to say that there's great power in a liberal ICT policy and creating an enabling environment. Recently I read about the XLD program, from what I understand the catalyst for that development was when the government of India deregulated the Wi-Fi industries. Now I understand it has something like 5,000 nodes.

So just think about the power that is in having a liberal ICT or telecommunications policy and where that can lead us.

With that, thank you.

>>ANRIETTE ESTERHUYSEN: Thanks, RAJ. We have very, very little time left so please keep your interventions very, very short.

>>JACQUELYNN RUFF: So just a couple quick thoughts. One is to reinforce the notion that in order to - if we know what works, why isn't it, how can we make it work better?

We really do need to be looking at local conditions, so we can share, we should share all of these best practices, but they will need to be tailored very much to the local situation.

Second, the importance of collaboration, and this is part of my sort of concluding remarks that we're doing right here today, that we'll do in all the workshops, again, at the local level for all the stakeholder to get together and to do what we are doing, which is to identify gaps in services, show the value of greater Internet to the community to users, promote and expand digital literacy, all those kinds of things, in addition to what happens at the broader policy level in terms of public policy that can motivate investment.

And on that point, the balance to be struck, it will have to be local. It also has to be very careful because, as several speakers have mentioned, if you overregulate, there will be disincentives to investment, and we'll get the opposite of what we want.

There are many ways in which the collaboration -- for example, sharing of towers and so on, can be done for the commercial reasons that we describe. We see a lot of that in many parts of the world.

So no need for government to micro-manage if that's actually happening for the greater good.

And then finally, the use of ICT Internet for these broader societal purposes, somebody asked about. I do think we are seeing lots of models there. There are some workshops here that are addressing that, and this is a good topic to expand upon in this important multistakeholder environment going forward.

>>ANRIETTE ESTERHUYSEN: Thanks very much.

Just really one sentence each from the two development speakers.

>>BRIAN LONGWE: Okay. I will close with a slightly controversial statement.

Internet governance capacity building to governments and regulators, up-to-date the push really for governments and regulators to open up their markets and embrace competition has largely been targeted at developing countries or developing regions. However, many of the problems that these countries face grew out of colonial policies and are sustained through dominance and control in their markets by developed country operators, many of whom achieved their market dominance during the colonial periods.

Should there be Internet governance capacity building that targets the developed country governments and regulators around issues such as telecoms reparations similar to those precedents in other economic sectors such as the philandering of natural resources.

>>ANRIETTE ESTERHUYSEN: Good point. Allison.

>>ALLISON GILLWALD: I just wanted to speak on clarifying the role of competition in markets. And so there is no misunderstanding, I think there is agreement in what one requires.

I want to spend a little bit of time looking at the issue of competition that was raised and the point that was made that governments shouldn't micro manage the market, and certainly they shouldn't.

I think what we are arguing is it's not that markets are not working in Africa but we don't have working markets. Because they are not fully competitive.

And without effective regulation, you simply get a set of dominant operators extracting monopoly rents that will mean you will get rapid penetration. So initially with privatization, initially with competition you will get a rapid takeup, but then it becomes saturated very quickly. We are not going to reach the last billion without innovative, transparent governance, and effective regulation of markets.

And that's what we need to align to the Internet governance issues. The markets, the approach to the telecommunication market, to the backbone, are all issues very pertinent to Internet governance.

>>ANRIETTE ESTERHUYSEN: Thank you very much. And I'm going to hand over to Mr. Karnik.

Remember to come to the open dialogue. It will be very interactive this afternoon.

>> KIRAN KARNIK: Thank you. Just a minute or two to wind up by making just a few points which have emerged from this or have emerged as a result of these discussions.

First is that empowerment is critical, and that access is critical to empowerment. So the Internet is not just all about business. It is about empowerment and that depends on access.

Second, that access requires a number of factors, some connectivity factors, some affordability factors, but I want to reiterate affordability need not mean low-cost devices alone. Of course devices should come in cheaper. It's also about using existing devices like mobile or, very importantly, evolving new ways of providing access to either community means, that ownership is not equal to access, or through new business models where access is effectively paid for by somebody else.

Third, that we need to look at both the demand and supply sides and critically put those into a development framework. A demand pull may be as effective or sometimes more effective than a supply push, but probably the two need to work together to see how we get there.

Next, the digital bridge is a possibility that excites all of us in this area, I'm sure, and we need to look at how the so-called digital divide can, in fact, be taken by -- overcome by using technology for the digital bridge.

And finally, in terms of many of the discussions that were here, including the last billion or I would even say the last million, we need to look at something which may one day find its way into the millennium development goals of the U.N., and that is something that some of us have called the information tone, like the ring tone. Can we say information tone for all. Can we make sure that everybody today has information tone. It's not just connectivity. It's information, it's content that's useful, utilitarian, and

something which can be used as they talk not just vertically for governance purposes or to make sure they participate democratically, but people talk to each other, which I think is equally important.

I will close on that note. I want to thank you all for your patience and participation, and I want you to join me in thanking our panelists who I think did an amazing job in the brief time that was there.

Thank you all.

>>CHENGETAI MASANGO: Thank you, and we will meet again at 2:00 for the opening ceremony and the opening session.

Thanks to the panelists and to the interpreters.