# The Dynamic Coalition on Access and Connectivity for Remote, Rural and Dispersed Communities

*Report from the Internet Governance Forum Workshop held November 13, 2007, Rio de Janeiro, Brazil.*
- compiled by Janna Anderson

## *Organizers and Panellists*

### Organizers:

- Dynamic Coalition on Access and Connectivity for Remote, Rural and Dispersed Communities

- Pacific Islands Chapter of the Internet Society

- Imagining the Internet, an initiative to illuminate hopes and fears about the future of the internet and inform public policy sponsored by Elon University School of Communications and the Pew Internet Project

- Pacific Internet Technology Centre, Fiji

### Panellists and Remote Participants:

**Rajnesh Singh** – Pacific Islands Chapter of the Internet Society and the Pacific Internet Technology Centre, Fiji (Moderator and Co-ordinator)

**Janna Anderson**, director of Imagining the Internet: A History and Forecast; lead author of Pew Internet's "Future of the Internet" surveys; assistant professor, Elon University School of Communications, Elon, North Carolina, USA

**Vint Cerf**, co-inventor of the Internet Protocol and chief Internet evangelist, Google; former chair of the board of directors of ICANN

**Guilherme Saraiva**, Comsat International, Brazil; telecommunications engineer, educated at the Brazilian Military Institute of Engineering, with an MBA from Fundação Getúlio Vargas; formerly of Vicom; now product and marketing director at Comsat

**Gunnar Hökmark**, Member of European Parliament, Sweden; vice chairman of the EPP-ED Group; active in the Committee and Economic and Monetary Affairs and the Committee of Industry, Energy and Research and a founder and co-chairman of the think tank European Enterprise Institute

**Haikkur Rahman**, founding chair of the Internet Society of Bangladesh; developer of grassroots IT development for the past 20 years through UNDP and other sources; participated in the activities related to establishment of the Internet Exchange, hosting of the F-root server in Dhaka and many community-based workshops and training

*The following participants shared input by e-mail prior to the event:*

**Gabriel Adonaylo** – Regional IP & DataCenter Product Manager, Comsat International, Argentina

**Lutfor Rahman** – Association for Advancement of Information Technology, Dhaka, Bangladesh

**Ian Thomson** – 2020 Trust, New Zealand

## *Discussion*

**Ian Thomson (pre-event e-mail):** We need to address is the motivating factors for Governments and Development agencies to take action to reduce the divide. The message that ICTs are an essential part of improving education, emergency services, health and meeting the MDGs has not been widely accepted.

We have the technology (which is getting more affordable every day, eg OLPC, VSAT etc.), we have the skilled people. We even have a plethora of pilots and trials
What we lack is the will to act on a significant scale. Unless we address that, we are just repeating the mantra and not making a difference.

What we need is politicians and bureaucrats to see the vision that they can affordably deliver better education to all children, better health to the people, better emergency and life saving services. In my experience, they all take the easy road and say things like competition will fix this up, or we need to deregulate the industry or it is just not affordable.

In my opinion, governments need to take the lead and develop partnerships with industry, development agencies and NGOs. The role of the government is to promise to pay for the use of the infrastructure to deliver their services to more people, more cost-effectively. Public/Private partnerships were a key theme at WSIS. We need to make it clear to them why they should get involved. There has been far too much talk and too little action.

**Gabriel Adonaylo (pre-event e-mail):** We have been working across Latin America in Universal Access solutions, and we have two success stories to show: one together with the Columbian government and the other with the Brazilian government. Both involve rural access, telecentres, Internet and telephony, etc. There are around 5,000 sites. Both

governments decided the programs were so successful that they issued an rfp to double the quantity of sites. It is not so difficult; it is just a matter of willingness.

**Lutfor Rahman (pre-event e-mail):** Problems are everywhere. Some people are facing problems with huge money. They don't know where to utilize their money. There are people who have costly, sophisticated tools, but they don't know how to use them. Maybe they have no time to learn how to use them. Alternatively, there are people who need just a tool to change the world but they have no means to buy it. Many of these people are found in rural areas. Some of them are extremely intelligent, and they pick things up quickly.

I have been working in one of the most remote areas of Bangladesh. People of the community are deprived from almost all sorts of modern facilities. Instead of giving them new ideas and knowledge, I am learning from them something new almost every day – things that are no less important than what we learn from the world-famous universities. They give solutions very quickly, not only to their own problems, but to global problems as well. The main trouble is that they have no voice. Nobody is there to listen to them. If they are equipped with relevant tools they can bring tremendous changes to the world. They produce food for us. They know their problems. They need to be connected to the rest of the world.

*The following content took place at the event*
**Janna Anderson**: We at Imagining the Internet work to document people's hopes and fears about the future of the Internet, because when we study these images in people's minds and think about them we can address concerns and work toward the best possible future scenario. Many concerns about the future of the Internet are wrapped in complex, competing values, making the public airing of issues and the sincere discussions that we see here at IGF vital. This work should be expanded and extended beyond these walls by carrying our conversations beyond IGF. One way to extend what we do and say here is to participate in the Future of the Internet survey and our video interviews. These materials are posted as a resource online. This year, in addition to doing video interviews at IGF, we are conducting a web-based survey that has five sets of questions that are tied to this year's IGF themes: Critical Internet Resources, Access, Openness, Diversity and Security. The survey results will be released in a few months, and we are hoping to get many responses this week, so the details we share will be revealing of people's true understanding of the issues and ideals for times ahead.

**Vint Cerf:** In order to be successful, a certain amount of infrastructure has to be in place. This has come up in several of these meetings already. You have to have electrical power if you're going to use computers in communications. It comes in a variety of forms. Solar power is often one of the best choices. Ordinary generators using various kinds of fuels can help. Automobiles up on blocks can be used to recharge batteries. So there are a variety of ways of obtaining power if you don't have grid power available. You also have to have some trained staff to assemble and operate and debug software and hardware systems, and you need other kinds of facilities and you need access to get onto the internet in the first place. Here's an area that can be quite difficult in rural parts of the

world – finding access to the Internet is a very tough proposition. It's true in a number of the Pacific Islands and other parts in the world that you can't access the Internet except by satellite. The problem is that satellite capacity is expensive. Cooperation and collaboration in the apposition of satellite communications could turn out to be advantageous, so what we need to see is bulk buys, collaborative bulk buys of satellite capacity, so as to drive down the per unit cost. That requires cooperation, sometimes over international boundaries. The same could be said for infrastructure that's internal to a region – building infrastructure within a region (instead of sending the signal a long way away to a far-flung place and back again) is another way of cutting costs. Regional collaboration is important to make some of these things possible. Probably the most important thing is the construction of a self-sustaining business model. If you don't, whatever project you have is going to die after the funds stop coming in. It's almost worse to start a project like that and then have it go away then not to have it at all. Make sure you have all of the pieces in place, including a sustainable business model. Sometimes that includes things like internet cafes, university settings where facilities are made available to the public in addition to the students, but in any event it needs to be thought through so the costs can be thought through with a business model. We should be careful not to imagine that there is a single, uniform solution to putting Internet into place or putting Internet into action. It's going to vary depending on local conditions. There are going to places where the best solution is the mobile phone. Mobile technology is much more rapidly propagating right now than anything else, and we should take advantage of that. We have the One Laptop Per Child program now, which has triggered other efforts by the commercial sector to build lower and lower cost equipment. That's a good thing, because as the prices come down the connection becomes more affordable. The costs are coming down thanks to competition and improved technology. The whole point of having access to the Internet is getting access to information, or to enable business to be conducted in a way it couldn't before. If you don’t have content that's useful to you, it's not very helpful to be online. There should be locally useful content in a locally accessible language. This is something you have to do for yourself. So one of the challenges is to be able to create content that people will be able to take advantage of. Any local population that is not yet on the Internet needs to think through or be helped to think through what content is useful. So the simple summary is that it is possible to build pieces of Internet. It's possible to operate those pieces, but you have to do that in a way that is self-sustaining, and you have to make sure there is content that people can use. I hope everybody walks out of this room with an idea of how to get more people up online on the Internet, that's what one of the Millennium Development goals is all about, and that's what we should be trying to make happen.

**Gunnar Hökmark:** The European Commission is today presenting new telecommunication legislation with the aim of opening up more competition and to secure more open access. Competition is for my mind is a way of getting everyone up on the track and being able to be there and try different solutions. We just mentioned mobile phones. We are today moving from around 2 billion people with mobile phones to – rather rapidly within a few years' time – 3 billion people around the world. This is a reminder of how rapid technological development is. It is giving an advantage to rural and distant areas more-so than for urban areas

which already have an "old-world" infrastructure built. It gives opportunities to rural Sweden or wherever you are on the globe. A lot of people are talking about the need for more rapid development of broadband and Internet but at the same time they are talking about control. When I was doing the report for the European Parliament about broadband, I noticed that there was a very important correlation between those countries that have opened up for competition and those that still have strong incumbents or monopolies. And I leave it to you to think who were lagging behind. The more control you want, the less speed you will get in the development of the Internet. Don't do as has been done earlier. In Central and Eastern European countries that didn't develop systems earlier, they are now going into mobile and are developing more modern structure than in "old" Europe. A strong risk is that you dig yourself too deep into the present technology, and I think being open and the neutrality of technologies is crucial. This is dangerous to say, but don't think about Internet all the time, because Internet is not Internet. It is the services and the content the education the trade the financing and everything else. Sometimes we are thinking too much about the technology and too little about the benefits of different kinds. Think more about developing the country and developing the region, and you might have a different calculation. If you at the same time secure that you will have openness, more actors, more operators, you will get a speedier development. Where you open up a market for local solutions, local entrepreneurship you have better development than when you try to force it through via centralized political decisions.

**Haikkur Rahman:** We built our own wireless network in Bangladesh about four, five six years ago. We established several centers publishing the local news, like agricultural data. Farmers got prices on commodities. We also established one on the fisheries in the southern part of our country. We also established a unique one – a cyclone-shelter-based information center. Just one. We also introduced a school program to distribute about 500 computers to very remote areas. We provided training to the teachers. We faced several problems. We needed a self-sustaining business model – that we are now facing because some businesses have been phased out. Those people are very poor. It was not good that they lost this, that it was there and then it vanished. That's bad for a society. A thing we learned from this: the United Nations Development Program helped pay for this program. We could develop a self-sustaining business model. We connected one college and an agricultural university and they pay for our bandwidth and we could provide services to the local community. Challenges related to internet governance include licensing – a very big problem in our country. The government is reluctant to issue licenses to operate telecenters. Recently we have had to argue more. VOIP is not legalized in our country and we have argued about that. We are in communication with our government and hopefully it will be developed. The services we have been providing have been in our local language – list of physicians, healthcare centers, agricultural prices, emergency services. We are getting computers for

schools. Some don't have electricity to run them. They are not connected computers. We are trying to connect them and to establish a common syllabus for grades 9 and 10 so they can learn a common education. We hope to have more capacity building for teachers and students. Hopefully 2008 will be a good year for us because IGF will be in India. We are looking to more benefit from the Internet.

**Guilherme Saraiva:** My projects have to do with satellite communications in remote locations. It's not just about giving connectivity to people. You have to provide them with a complete service. My side of the project is connectivity, but all of these projects, from Mexico, Colombia, Ecuador, Peru, Brazil, they all have a large team working to provide IT infrastructure, training and making understand using the tools available, and we have had entrepreneurship arising in these places. New value has been created in these local communities. We are present in several countries, the major ones in remote locations to promote digital inclusion are in Colombia and Brazil. Both promote digital inclusion and are targeted at schools. The business model is different. In Brazil we have a service model whereby the federal government pays a monthly fee as if they were just hiring some standard service. In Colombia the government gives you a subsidy, you buy all of the equipment, so they have a lower monthly fee to pay. They also have a shared type of subsidy. The government pays a portion and the local government pays a portion. Satellite connections have come down somewhat in price. It's sometimes cheaper than the electrical power for the school. You have to pull cable on these projects and provide everything for connectivity. They say the kids learn the technology themselves and they are really going there and just training the teachers. We have antennas installed in the schools. We generally have from one to 16 computers and typically we share the telecenter – it is opened up to the community. The peak traffic hour for these telecenters and the data traffic in these schools is – daily – from 7 a.m. to midnight. It was a computer problem – they don't have enough computers, so they were arriving at 7 a.m. and a steady stream of them were using the computers until midnight. So this is what is happening in South America. People are really logging on. In Colombia we are working in the northern zone with about 3,000 sites. The Brazilian project has 3,500 schools. They both also cover hospital sites and military garrisons. There' was heavy work done by the Brazilian government to provide free software. There's a big effort to stimulate these people to create home pages to develop some type of business. People have video servers, file sharing, discussion groups. Business-learning projects are growing a lot in this region, because a lot of people want to get educated and they do not have teachers available. We did this project for a state university in the north. North of the Amazon, infrastructure is really scarce, even energy – they have to buy from Venezuela. What was happening is if you had a teacher and she was 19, 20 years old and she went to this remote place and worked until she was 50 and still a teacher and she would have no way to be updated in information in this remote location. This is catching on in other states – to train

teachers and make them really up to date. We have done this using the Internet using video conferencing from the south of the country. It's a platform we host. Latin America is experiencing significant growth in digital inclusion and distance learning. National administrations perceive such initiatives as a strategic step in development of their economies. In Brazil they are expanding satellite coverage to 11,000 schools and here we have 300,000 schools, so this is just for the farthest locations.

**Vint Cerf:** I have been a proponent of competition for a long, long time, but then it occurred to me that there are some situations where there isn't enough market to sustain multiple competitors and then you need to establish a regulatory regime in which the only supplier is required to make services available under reasonable conditions. This gets to a layering of where the competition lies. It might be that you could only afford to have one supplier of basic communications capability, but then you want to have multiple suppliers of Internet access, allowing people to compete with each other for the higher-level applications. The reason I bring this up is in some parts of the world there is a very strong regulatory regime that has led to high-speed services being available – in Japan for example. You can get gigabit-per-second service there for about 8,700 yen per month. I can't get that in the United States, not anywhere close.

**Gunnar Hökmark:** We should differ between the pure technological platforms where you can open up. When you have too much control, you're not securing anything, you're hindering and that is the key. I think some of the examples we have seen here underline that. Let's not mix up competition with competition, because you can have competition and also provide financial support from state or regional organizations at the same time.

**Vint Cerf:** We have some problems in the United States where in some cases there is insufficient regulatory attention paid to openness. One other technological observation. We're getting to the point now where it's technologically feasible to provide a substantial array of services *in* the network. Putting my Google hat on, computing in the cloud is turning out to be one avenue for providing services to people. It means that they don't necessarily have to have a significant quantity of computing capability or storage locally if you can supply that on the network. If you have simple devices at the edges of the net, and computing capability and storage and applications you may be able to spread access to the network more effectively that way.

**Comments from participants in the audience:**

Most of the 800 million illiterate people in the world live in remote areas. These people are also least likely to be recruited to learning about using computers. Spoken interfaces

such as programs used for the blind online can be used to inform and entertain those who can't read or write.

Cost is important. People don't need broadband connection – 64K will do just fine. Keep costs down when reaching out. We should link costs and access.

Localized storage you can access is important. For sustainability, having a fixed point isn't enough. You have to increase the number.

New technology is bringing costs down.

If you don't have a plan to handle the growth of a remote network, sustainability won't happen. There has to be energy available for growth.

Local content in local languages is important to building and sustaining interest in the community and helping a program grow once it is connected.

The Internet has to be relevant to local people. Access to medical expertise also helps give it value.

Governments should have a universal-service fund to provide connections.

There are programs getting off the ground now all over. In Peru and the Dominican Republic (and all over). Many times when you are not living in a rural area you don't know, but the change is happening.

The literacy rate in Zimbabwe is 80 percent, but the challenge is to provide basic infrastructure, power roads, and much more. We need to do these first to bring quality of life to the people and then the Internet is just icing on the cake.

**After the event an audience member came to share input.** John Dada, PhD MPH, RN, DipHE, Programs Director, Fantsuam Foundation (www.fantsuam.org), Nigeria, said while the DC panel mentioned the idea of government-supported and donor-supported internet projects in under-served areas, there is another excellent model of establishing a sustainable ICT program: An initiative started by civil society and meeting rural development challenges as they arise. Sustainability in that context may be wider as it considers a wider benefit to community. He said this is taking place in his program now. The young people who have benefited from being given use of a computer and internet connection give back to the community when they have completed their education and become employed. Their time and money help continue to sustain the internet efforts in their communities. This allows them to:

- Use the internet to diagnose illness in places where there are no doctors.
- Add in the cost of a child that realizes their potential and brings in tax to the government over their many years of life.
- And consider the ways that crops can improve yield, with information gleaned

from the internet.

- Provide economic growth in an area.

## Inventory of events and actors related to the issue under discussion

The Dynamic Coalition on Access and Connectivity for Remote, Rural and Dispersed Communities has been set up as an outcome of IGF Athens 2006 to specifically consider the access and connectivity issues and challenges facing remote, rural and dispersed communities around the world.

Amongst the objectives are:

- To create an open multi-stakeholder forum to consider access/connectivity issues and challenges facing remote, rural and dispersed communities
- To highlight and promote solutions by way of case studies and best practices
- To explore and promote public-private partnership in delivering appropriate solutions
- To ensure the principles of Universal Access for all is an integral part of IGF and its deliberations

Membership is open to anyone interested in the Coalition's work and an online membership form is available at http://www.pacificit.org/dc/join

The coalition is being co-ordinated by Rajnesh Singh: rajnesh [at] pacifit [dot] org

## *Possible follow-up*

In the months previous to the DC meeting in India in 2008, we expect to have a discussion group brainstorm ways in which action can be taken to continue to extend access in a way that assures Internet diffusion beyond urban areas and in unserved and underserved regions. In addition, next time the dynamic coalition meets, we will distribute cards to audience members with an e-mail address to which they will be invited to respond after the session to share their ideas.

In addition to the representative from Google and representative from Comsat who appeared on the DC panel, Nicos Tsilas, senior director IP & Interoperability Policy Government and Industry Affairs, for Microsoft, was in the DC audience. After the talk he agreed that before the DC it might be a good idea to invite people from industry to the next DC in India, to allow them to more directly address the issues and questions of civil society participants and others at the next DC. How can we bring in stakeholders who come to the DC prepared to use it as a direct springboard to help implement change and gain insights from the conversation at the dynamic coalition? Wouldn't it be great to be able to have a press conference after the next DC to announce a civil society-industry partnership to build out the Internet even further into unserved and underserved areas?

Julian Casasbuenas, director of Colnodo, an Internet-access project in Colombia, took a copy of the film shown at the DC back to show to his communities to help educate people about why Internet use makes a difference to their lives.

Can something be done to help further this idea mentioned by Vint Cerf: "Cooperation and collaboration in the apposition of satellite communications could turn out to be advantageous, so what we need to see is bulk buys, collaborative bulk buys of satellite capacity, so as to drive down the per unit cost. That requires cooperation, sometimes over international boundaries."

Can something be done about another idea from Vint: to analyze the paths of signals and consider working out a better system in some areas so signals don't have to be sent to far-flung places (his roughly equivalent example, not in a "remote" area, Baltimore to Miami to Baltimore) by building the infrastructure within the region.