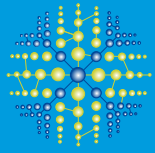


Newsletter



eLAC2015

December 2011

17

- **Broadband and the Knowledge Society: Interconnecting South America**
Jorge Atton Palma
- **Broadband deployment and digital integration**
Sergio Scarabino
- **“Broadband rates could fall by over 50%”,**
interview with Cezar Alvarez
- **Interregional cooperation to promote broadband**
School for Policymakers and Regional Dialogue
- **“It is important for comparisons to be made based on quantifiable and comparable aspects”,**
interview with Omar de León
- **“ORBA has helped generate cooperation mechanisms between countries”,**
interview with Fernando Rojas
- **“Ideally, the region should harmonize the use of the spectrum”,**
interview with René Bustillo
- **Mobile broadband will spur a new wave of innovation in Latin America**
Sebastián Cabello

Broadband advances in Latin America and the Caribbean

Photo by: SXC.hu



Jorge Atton Palma,
Deputy Secretary for Telecommunications in Chile



Broadband and the Knowledge Society: Interconnecting South America

One year ago, in 2010, Chile proposed a common agenda for South America. The objective: to interconnect the region's countries and coordinate actions to lower the cost of broadband in the marketplace, in order to achieve real integration and help our citizens join the knowledge society.

What began as a good idea found solid ground in November 2011 when the communications ministers of the UNASUR countries met in Brazil and signed an agreement to build a fibre-optic ring linking the countries of South America and launch initiatives to spur digital growth and attract large content servers to the region.

We suggested to our neighbors that it was time to move beyond reflection and grand agreements and on to action with goals and deadlines. We now have a multilateral development agenda in place, as well as bilateral plans under way in Brazil, Peru and Argentina.

In the area of information and communication technologies, President Piñera has given us a challenge: to not arrive late to the digital revolution and to take advantage of its momentum to achieve development as a country within this very decade. Therefore, we would like to triple per capita broadband penetration and investments in telecommunications to attain the OECD average by 2014 and reach our goal of providing universal broadband service by 2018. This public-private effort is vital for meeting the challenges that lie ahead.

Key information: In the coming years, global Internet traffic will increase by at least 34% annually, and mobile traffic will grow by 108%. Latin America will see the highest growth in Internet traffic in the world, on the order of 51%.

This increase in Internet demand and use is good news, although for Chile and the countries of South America, it

also presents a problem: local broadband rates are strongly affected by the cost of international connections, which are provided by just two companies.

Furthermore, 75% of the region's traffic is routed through Miami, including traffic bound for Europe, Asia and within the region. In Chile, the corresponding figure is 85% and rising by the year. The reason lies in the ways in which broadband is used, with social networking sites and especially video sites getting ever-greater use. Thus, the cost of international connections will continue to be a key factor in broadband pricing in the local market.

The fact that the UNASUR governments have adopted an ambitious and concrete digital plan is a very important development. The plan includes at least three multilateral strategies that will help lower costs: to build fibre-optic networks interconnecting the countries; to bring international content closer, encouraging providers to set up shop in the region; and to attract new investors in international connections to boost competition, while growing regional demand.

Merely coordinating the governments has had effects in the marketplace. The average price of international connections was halved in 2011, and we already have private and public companies that are deploying high-capacity networks throughout the Southern Cone to break the duopoly in supply.

In 2012, we will see further progress made on this agenda, and ECLAC will play a key role, as it has since the launch of the Broadband Observatory, which measures market variables and progress towards our goals. With this regional strategy, plus the increase in local competition that we will have in the mobile Internet market, we intend to halve average broadband prices in the Chilean market by 2014.



Sergio Scarabino,
Senior Advisor at the ITU Area Office in Santiago

Broadband deployment and digital integration

The governments of Latin America and the Caribbean are finding ways to deliver information and knowledge to the citizens of their respective countries, in order to achieve the equality of opportunities that has been sought for decades.

The International Telecommunication Union (ITU) is seeking to attain this objective by deploying broadband networks, based on the conviction that broadband will have an unprecedented equalizing effect on the social development of humanity.

While knowledge continues to accumulate at a dizzying rate on the Internet, gaps in access to information perpetuate inequalities and even deepen them. What would happen in the best educational content from each country was uploaded to the Internet and made available to everybody with Internet access? What would happen if teachers and residents of rural areas or people with low income could receive the same training as people living in privileged areas?

At the ITU, we are working on initiatives to make all this possible. The plan known as “Connect a school, connect a community,” for example, made it possible, with the collaboration of the government and the private sector, to connect five communities in Nicaragua (Genizaro, Cárdenas, Tichaná, El Ostional and Panzuaca) and provide support for that transformation process. As part of the

“While knowledge continues to accumulate at a dizzying rate on the Internet, gaps in access to information perpetuate inequalities and even deepen them ”

initiative, solar energy panels, satellite reception stations and personal computers had to be delivered—in some cases by oxcart—to reach schools that were not connected to the electricity grid or road networks. As a result, students went, in a short time, from not having computers to becoming adept users of e-mail, online discussion forums and video conferencing, capable of finding and using information on school subjects. Although conditions vary considerably between countries in Latin America and the Caribbean, the ITU is prepared to work with third parties interested in developing and implementing similar projects, adapted to their needs.

The ITU works on an ongoing basis in the fields of radiocommunication and the standardization of telecommunications equipment and services, as well as in regulation, in order to ensure that broadband is deployed as efficiently as possible.

Moreover, we have taken on the objectives identified by the region’s countries and launched five regional initiatives, including ones to promote broadband access and lower Internet costs. These initiatives constitute the framework within which the ITU is supporting the development of telecommunications in the Americas, in pursuit of specific outcomes. Providing broadband access to all of a country’s citizens is a technology challenge with a high social impact. As in Nicaragua, at the ITU we know that we are ready to meet this challenge.

Cezar Alvarez,

Deputy Minister of Telecommunications in Brazil:



“Broadband rates could fall by over 50%”

Brazil's Deputy Minister of Telecommunications discusses two broadband projects critical for the region: the fibre-optic ring that will interconnect the countries of South America, promoted by the Union of South American Nations (UNASUR), and the connection via underwater cables of Brazil with the United States and Europe.

On 30 November, at the First Meeting of Communications Ministers of UNASUR, held in Brasilia, plans to install a fibre-optic broadband ring for South America were announced. The project will be completed in two years thanks to the use of existing infrastructure.

The objectives of the initiative include increasing the connection speeds of the countries that will make up the ring, since according to figures provided by the ECLAC Regional Broadband Observatory (ORBA), the average download speed in South America is under 5 Mbps, while the average speed in the European countries is over 12 Mbps. In addition, a significant volume of the region's traffic is expected to be rerouted, which is important because, according to ORBA, between 75% and 85% of data circulating in South America, including local content, is routed through Miami, which raises connection costs.

The Government of Brazil announced a second project, to build and expand submarine cables linking the city of Fortaleza to the United States and Europe, which will be financed through a public-private consortium. Chile will participate in this project, since nearly 50% of the traffic to be carried on this network will derive from the communication needs of the astronomical observatories located in its north.

In this interview, Cezar Alvarez, Brazil's Deputy Minister of Telecommunications, discusses both projects in depth.

What is the main objective of the fibre-optic ring that UNASUR is promoting for South America?

The project is part of the general strategy to integrate South America, specifically as it relates to the development of shared infrastructure. This will make it possible to lower broadband rates for people across the region.

If one objective is to lower broadband rates in the region, what are the expectations for this goal? Do you have some percentage in mind that you would like to reach?

We can come up with a rough estimate, depending on the composition of broadband prices in each country in South America. In Brazil, for example, rates for individual users could fall by 15%, whereas in countries where international connectivity is more expensive, such as Bolivia, they could fall by over 50%. It will all depend on the actual commitment that each country makes to this project.

If connectivity costs are reduced, what incentives will private operators have to pass the savings on to their customers?

There are three ways to guarantee that price cuts will be passed on to the public. The first is when service is provided by a State-owned operator with monopoly control. In this case, we assume that the operator will act in the public interest and lower rates. The second is when service is provided by private companies with no direct relationship to the State and there is competition. In order to attract more users, they will be obligated to lower prices. The third is when service is provided by a private company that has monopoly control but rates that are controlled by the State, in which case the regulator can push for lower rates.

How much will the project cost?

A precise calculation has not yet been made, but we estimate a cost of about US\$ 100 million for the required investments. This amount could change as we obtain current information on the networks already in place in the countries of South America.

How do you plan to finance it? Are you considering private sector participation?

Every country is free to pay for part of the project, but the regional development agencies such as the Inter-American Development Bank (IDB), the Andean Development Corporation (CAF), Brazil's National Social and Economic Development Bank (BNDES) and the Financial Fund for the Development of the River Plate Basin (FONPLATA) have offered to help with the project.

“We anticipate that the first cable will be in operation towards the end of 2013 and the second one in 2014”

Will all the UNASUR governments participate in the financing? Initially, the idea is for all of the countries to contribute in some measure, directly or indirectly, based on their ability and the extent of their participation in the project.

Concerning the cable that will link Fortaleza to the United States and Europe, what is the thinking behind this project?

You could say that it is a complementary, albeit separate, project to South America's fibre-optic ring. It is also intended to lower intercontinental connectivity prices and will be another outbound option. A cable to Africa will also be built, in collaboration with Angola.

“In Brazil, for example, rates for individual users could fall by 15%, whereas in countries where international connectivity is more expensive, such as Bolivia, they could fall by more than 50%”

What are the timelines and cost?

There are two different cables: one to the United States and another to Europe. We anticipate that the first cable will be in operation towards the end of 2013 and the second one in 2014. The cost will depend on different commercial agreements but will be between 380 and 500 million dollars.

Is this project linked to the South American ring?

Yes, the undersea cables project will make the fibre-optic ring more effective in lowering the price of international connectivity because it will provide yet another transoceanic outbound option.

Could the Brazil-United States connection be expanded to other countries in the region?

The fibre-optic ring will give all the countries in South America access to the cable. They will be able to negotiate various commercial agreements with the company that will lay the cable.



Interregional cooperation to promote broadband

In October 2011, ECLAC hosted two important meetings to acquire knowledge, share experiences and reach agreements with a view to developing broadband access in Latin America and the Caribbean.

From 17 to 20 October, the first School for Broadband Policymakers was held at ECLAC headquarters in Santiago, following a request by the member countries of the Regional Dialogue on Broadband. The initiative had the support of the World Bank. During four days of meetings and presentations, representatives from the telecommunications ministries (or analogous institutions) of Argentina, Chile, Colombia, Costa Rica, Ecuador, Paraguay and Peru, as well as representatives from the telecommunications industry, learned about the advances, experiences, needs, and challenges involved in developing broadband networks in Latin America and the Caribbean. In addition to serving as a forum for knowledge and learning, the school has been conceived as an opportunity to share experiences and discuss the primary issues that affect the development of this technology.

Presentations were given by scholars and international experts, both invitees and officials from ECLAC and the World Bank. Among them were: Wonki Min, a specialist in information and communication technology policy at the World Bank and the former director of the Ministry of Information and Communication of the Republic of Korea, who described the strategies and steps that the Korean government took to become a leader in fixed and mobile broadband penetration; Pedro Less Andrade, Director of Public Policy and Government Affairs for Latin America at Google, who discussed the company's vision for private actors and governments to look at this service as a way of promoting successful development policies, taking into account that broadband should be viewed as an ecosystem and that public policies should be formulated so as not to rapidly become obsolete in the face of swiftly evolving technologies; and Paulo Lopes, Counselor for the European Union on Information Society and Media, who described the bloc's plans to invest € 9 billion to incentivize private investment aimed at expanding broadband networks in Europe.

Representatives from the telecommunications industry also shared their views on the outlook for the region, especially from their perspective as private infrastructure operators, service providers and content creators. Other issues addressed during the meetings included mobile broadband services under various digital dividend allocation scenarios, regional integration through broadband infrastructure, the regulation of this technology in a framework of convergence and the importance of establishing common indicators to measure current conditions and future changes.

On 21 October, following the conclusion of the School, the fourth meeting of the Regional Dialogue on Broadband was held, with representatives attending from Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Paraguay, Peru and Uruguay. During the event, the ECLAC Regional Broadband Observatory (ORBA) proposed a series of parameters related to connectivity, speed and the user experience to define broadband service, with the objective of shaping public policies in the region. The definition encompasses cable and wireless broadband services, is consistent with the concepts used by the International Telecommunication Union (ITU) and is not binding or regulatory in nature, but rather is intended as a point of reference for precisely defining the goals and objectives of policies for achieving universal broadband coverage in the region.

The event participants also concluded that there is a need to incentivize the exchange of Internet traffic in the region. This involves promoting the interconnection of Internet service providers (ISPs) and setting up Internet exchange points (IXPs). The meeting further agreed to lower the cost of deploying broadband infrastructure by making more efficient use of infrastructure for other services, such as electricity, gas and road networks. In addition, they agreed to encourage the generation of local content and attract content providers to host their content in the region.

“It is important for comparisons to be made based on quantifiable and comparable aspects”

The ECLAC consultant discusses the criteria used to establish the definition of broadband service that was developed and announced at the most recent meeting of the Regional Dialogue on Broadband.

What is the purpose of a formal definition of the concept of broadband?

As demand for applications and content grows and certain services are defined commercially as broadband, the need arises for a common language as to what constitutes broadband. When a country is said to aspire to universal access, what does this mean in terms of the minimum level of service that should be provided? When we look at the evolution of broadband in countries, or regions within a country, it is important for comparisons to be made based on quantifiable and comparable aspects of the services provided. The definition announced at the fourth meeting of the Regional Dialogue was developed for the region's countries, but it could also be used for other developing countries.

What criteria were used to come up with the definition?

The first condition that must be met for Internet access to be considered broadband is a connection that is always on, that is, a connection that does not need to be established each time a decision is made to exchange data. Broadband is primarily defined according to data download and upload speeds. These are the speeds that allow us to interact on social networks, receive various types of content based on available speeds, use different levels of tele-medicine or tele-education, among other activities. Accordingly, without overlooking other parameters related to quality and taking into account the most important ones surveyed by international institutions, such as the International Telecommunication Union, speeds for both types of data transfer were considered. The following tiers were defined:

Basic broadband is service that is delivered through wired devices or fixed or mobile wireless devices and that enables simple activities to be performed on the Internet, such as reading e-mail, reading or downloading documents and general navigation, online chats and access to government applications with low data content such as basic e-health (e.g. with no video content or large images), basic e-government text content, etc. The download speed should be at least 256 Kbps, and the upload speed should be at least 128 Kbps.

Advanced broadband is service that makes it possible to enjoy all of the advanced activities offered on the Internet, including

support for distance work, standard-definition compressed video streaming, video conferencing, e-health, e-government and e-education, etc. The download speed should be greater than 2 Mbps, and the upload speed should be greater than 512 Kbps.

Total broadband is service that allows for comfortable use of bandwidth-intensive activities, such as high-definition video streaming and IPTV, telepresence activities, transfer of large files, telework with easy transfer of high volumes of data, advanced e-health with transfers of large volumes of image and video data, e-education including high-definition videos, etc. The download speed should be greater than 10 Mbps, and the upload speed should be greater than 768 Kbps.

Why divide the definition of broadband into “basic,” “advanced” and “total”? Why not have a single classification?

The reason for defining these tiers was precisely because there was no agreed upon definition. The definition is based on which services can be provided, since the services are, ultimately, the reason for using broadband. The objectives in terms of speed of universal service are not the same as those needed for something like telemedicine, for example. Nor does everybody have the same requirements. Therefore, it is useful to define more than one type of broadband, according to speed tiers that enable different uses. Given the expense of universal access, it makes sense to give the general public access to basic applications and content, and to simple activities that are nevertheless enriching experiences. These conditions define basic broadband. But, in order to follow a country's progress, in addition to measuring the teledensity of basic broadband, it is necessary to know what is happening at higher speeds, so two additional tiers were included.

The definition is not binding or regulatory in nature. Should it be?

No, it should not because it is just a tool for making international comparisons, using measurable parameters related to the services provided. It is understood that each government will determine whether to consider these tiers in its plans.

Do you expect other entities or governments to use this definition as a model?

It is an input that will help to evaluate the development of broadband in our countries, also doing justice to their efforts to give their citizens access to basic, but very important, advances, made possible by broadband.



Fernando Rojas,
Coordinator of the Regional
Broadband Observatory
(ORBA)

“ORBA has helped generate cooperation mechanisms between countries”

The expert explains in this interview how ECLAC, through the Regional Dialogue on Broadband, has helped to close the gaps in service penetration, rates and quality that exist between Latin America and developed countries.

How is ORBA important to the development of broadband in the region?

ORBA was created for the purpose of providing access to information on broadband to those responsible for developing public policies to make broadband service available throughout the region. It has provided a number of benefits. First, it lowers the cost of information, not only by delivering data in bulk but also by processing and analyzing it. This allows the countries to evaluate and monitor broadband development. In addition, they can observe the evolution of their domestic markets, making comparisons with other countries in the region and with developed countries. That information helps them design better policies by highlighting the areas they should focus on

most. Currently, we provide information on three essential aspects of broadband: penetration, service quality and service effectiveness. In other words, we present an overview of broadband service in each country: how many people have access, how many use it and how good it is.

So the idea is to act as an information clearinghouse so the countries do not duplicate studies?

Exactly. Each country has the ability to generate information on its reality. But often, this is not enough to observe, for example, trends in the global market. If you want to know whether a country's prices are competitive in the region, you should check the neighboring countries' prices. We provide that

“The region has improved: rates have fallen, quality has improved and broadband service is more accessible. However, in comparative terms, if we take the countries most advanced in broadband as the technology frontier, the region is making very slow progress: the gaps are widening”

information. Moreover, many countries do not have specific types of information on their own reality, e.g., on service quality, because it is expensive or the country lacks the financial or human resources needed to process it. We try to help solve that problem.

This can also help to ensure that the countries are speaking the same language in terms of statistics?

That is a key point because when data is processed at the regional level, similar criteria and methodologies are used, so the data is comparable. If each country were to generate its own data, using its own criteria and methodologies, there would be compatibility problems.

Another aspect that we want to develop with ORBA—and which is taking shape in that country—is information on all the policy initiatives under way in the member countries of the Regional Dialogue on Broadband. This will enable them to consider the policies that are being implemented in neighboring countries and that could serve them. In some meetings of the Dialogue, this type of information has helped to generate mechanisms for cooperation between countries. For example, if a country is developing a spectrum allocation policy and sees that other member countries have made progress in this area, it can approach them and obtain more detailed information on such efforts. This greatly facilitates the policy formulation process.

What is your assessment of the outlook for broadband in Latin America and Caribbean?

Since activities were launched at the Observatory, I would say that, in general, the region has improved. Rates have fallen, quality has improved and broadband service is more accessible. However, it is always useful to make comparisons with more developed countries. In comparative terms, if we take the countries most advanced in broadband as the technology frontier, the region is making very slow progress: the gaps are widening. The penetration rate in the most advanced countries, especially in mobile broadband, has climbed significantly; the speeds offered and delivered are much higher than in the region. And in terms of prices relative to income levels, the difference is enormous. That is one of the most important issues. In the end, the region has made progress but not enough to close the gaps.

And what needs to be done to close the gaps?

Several things. One of the main issues is infrastructure. Broadband is a system. If a basic component is missing, such as infrastructure, the rest of the system will not work. You need good infrastructure to provide quality services; then you can talk about content development, user training, etc. Without that first step, which is to develop good infrastructure, it is very hard to develop the other parts. Though all of the components of the system are important, there are priorities.

How is ECLAC helping to close the gaps?

I think its main contribution has been the Regional Dialogue. Specifically, having proposed this forum for discussion, this forum for sharing experiences, monitoring the evolution of policies in the region and having placed the different countries in communication not only with each other but also with subject experts. At the School for Broadband Policymakers that we organized in 2011, for example, we brought presenters—from the European Union, the Republic of Korea and Spain—who spoke about successful experiences with technologies and policies, not for the purpose of copying these policies, but rather to draw on aspects that could be adapted for policy development in this region. In addition, the Dialogue has facilitated coordination in South America, mainly, of infrastructure development and regional integration through broadband infrastructure. One of the current topics of discussion is how to directly interconnect the region's countries, in order to avoid costs resulting from the inefficient use of networks and from routing the bulk of

traffic through exchange points located in the United States. Complementarily, we are trying to increase content generation and hosting in the region. I think the main contributions are along these lines.

In fact, the Dialogue has assumed such relevance that the meeting of the communications ministers of UNASUR, held in Brasilia in November 2011, supported the agreements of the fourth meeting of the Dialogue and explicitly stated, in the corresponding declaration, that the participating countries would take the agreements into consideration in the formulation of public policies. Thus, policymakers at the highest levels have shown that the work of the Dialogue is producing good results.

The Regional Broadband Dialogue has facilitated coordination in South America, mainly, of infrastructure development and regional integration through broadband infrastructure. One of the current topics of discussion is how to directly interconnect the region's countries, in order to avoid costs resulting from the inefficient use of networks

René Bustillo, telecommunications expert, on the digital dividend:

“Ideally, the region should harmonize the use of the spectrum”

The attorney and ECLAC consultant weighs in on the future use of radio frequencies that will be freed up following the analog shutdown for use by digital communication technologies, including broadband.

An issue on the agenda of organizations and government agencies in charge of telecommunications policy is the so-called “digital dividend,” which can be defined as the portion of the radio spectrum that will be freed up by the analog shutdown, i.e., when analog television transmissions are switched off and replaced by terrestrial digital television (TDT), which takes up less space on the spectrum than analog waves. Thanks to digital signal compression, up to six digital channels of acceptable quality can be transmitted in the space on the spectrum previously occupied by one analog channel. Accordingly, with the imminent disappearance of analog television (already switched off in most of Europe, but still being phased out in Latin America), there is considerable interest in the allocation and decisions on use of the frequencies that will be freed up.

Which technology stands to benefit the most from the digital dividend?

The digital dividend does not benefit technology per se, but rather society as a result of the use of a certain technology. Use of the digital dividend spectrum varies by country, from mobile broadband to citizen security to high-definition digital television. Depending on the national priorities the decision can vary substantially. In a country that prizes variety and plurality of information, the decision could be to allocate spectrum for digital television. If the national priority is to promote value generated by the private sector, mobile broadband is probably the best alternative.

Is there a specific frequency or range on the radio spectrum that is ideal for mobile broadband? How hard would it be to use that frequency or range, assuming that digital television also wants access to some of the frequencies that will be freed up?

Mobile broadband works in a fairly wide range of frequencies, from 400 MHz to 3600 Mhz and even higher. However, the ideal frequencies are between 700 MHz and 900 MHz. The digital dividend spectrum for Latin America is in the 698-806 MHz range, so it is very coveted by mobile service providers. Therefore, national governments must approach the issue of allocation of the digital dividend spectrum with care, taking into consideration their policy goals and the benefit to society. Although shared use by digital television and mobile broadband is possible, not many countries have opted for this arrangement.

Ideally, would the different countries use the same frequencies from

the digital dividend for the same uses (e.g. a specific frequency for broadband, another for digital television)? Or is this irrelevant?

It is possible to use the digital dividend for both applications, but since digital television can cause interference with mobile services, and mobile services can easily interfere with television reception, when the frequencies are very close, protection bands are established between the two services. This means that if the digital dividend is allocated to different services, steps should be taken to ensure that there is no interference between them.

What are the challenges involved in harmonizing criteria and policies for use of the digital dividend between countries?

Each country's decision is sovereign in terms of use of the spectrum. In the case of the digital dividend, decisions in terms of social and economic policy have priority. Ideally, and for compatibility of use of devices and communications in border areas, all of the region's countries should harmonize use of the digital spectrum. However, because each country has a different socioeconomic reality, standardization at the regional level is not a simple matter.

What do you think is the best frequency allocation policy for operators? Bidding, auctions, free use?

In that order, bidding, auctions and lastly, free use. If the spectrum is going to be allocated through a competitive process, bidding is probably the best way to do it. However, because a bidding process often means that the spectrum represents an extremely high investment cost for operators, the recommendation is to select operators via beauty contests to choose the bidder offering the greatest benefit to society.

What are your recommendations for a good allocation or administration of the digital dividend?

That these issues be discussed and analyzed as soon as possible, since the analog shutdown is imminent in many of the region's countries. In addition, careful consideration should be given to the position of mobile service providers, which face growing demand for broadband and, thus, spectrum. In countries where the digital dividend spectrum is not used to provide analog television, it might be possible to allocate a portion of it for mobile broadband.



Sebastián Cabello, Director of GSMA Latin America

Mobile broadband will spur a new wave of innovation in Latin America

With nearly 600 million connections as of June 2011, Latin America is the third largest mobile telephony market in the world, after Asia and Africa. Between 2006 and 2010, the number of mobile connections doubled to 567 million, with 29 million more added in the first half of 2011. This increased the per capita penetration rate from 44% in 2005 to 96% in 2010. According to forecasts, the region will have about 750 million connections in 2015, with an average penetration rate of 122%. Mobile telephony generates US\$ 150 billion in value added for the economies of the region (3.2% of the GDP of the 20 largest countries) and its ecosystem plays an important role in the job sector, directly and indirectly employing approximately 1.5 million workers.

Many people connect to the Internet for the first time using a mobile device. Even people who do not know how to use a computer can handle a cell phone, making it a crucial tool for accessing the Internet. Mobile broadband subscriptions climbed 133% annually between 2005 and 2010, and the region is expected to have nearly 250 million subscribers by 2015. In 2011, mobile broadband connections surpassed fixed connections, which shows that mobile technology is the primary means by which Latin Americans connect to the Internet.

Despite increasing voice service penetration, which exceeds 100%, there is a large Internet access gap in the region. Over 400 million people do not use the service, and this is the group that government efforts should target to promote use of this technology. Where data services are available, the policy focus should be on education for use. Where there is no coverage, the convergence of 2G to 3G services should be pursued.

The next wave of innovation in Latin America will ride on the back of mobile broadband services, which will have a major

part in achieving the government objectives of making high-speed Internet available to the public. Smartphone penetration will also continue to rise, as the devices become increasingly accessible. AT Kearney estimates that Smartphone market penetration will climb from 9% in 2010 to 33% in 2014 and as high as 60% in 2018.

Despite these advances, demand for Internet services is going unmet in the region, as reflected in the gap between the number of Internet users (212 million) and the number of fixed and mobile broadband connections (83 million).

Although the region's governments are promoting the expansion of broadband coverage, many of them are not paying enough attention to the important role that mobile broadband will play in making the service widely available and closing the digital divide. This is especially important given the lack of flexibility and the cost of fixed broadband. Accordingly, public policy should remove obstacles, enabling mobile broadband to replicate the success that mobile telephony has had with voice services.

It is necessary to support the development of wireless technologies and promote greater access, improving service coverage and quality and increasing network capacity. Tools have already been developed to facilitate access to these services and improve their quality. Many of them could be deployed by reallocating radio spectrum. This scarce national resource is often underutilized and is not always allocated in a way that produces optimal benefits for the public, the government and the private sector, which is willing to invest in it. Though it is finite, this nonperishable resource is an important tool for improving the coverage and capacity of networks and services.

News briefs

Submarine cable to link Brazil and Angola

On 15 December, Brazil's State-owned telecommunications company Telebrás signed an agreement with Angola Cables to lay an underwater fibre-optic cable linking the cities of Fortaleza and Luanda, to improve the Internet connection between the Americas and Africa. This is part of the South American country's strategy to establish a network of submarine cables linking it to Africa, the United States and Europe.

The cable, which will measure 6,000 kilometres long, is expected to be laid in the first half of 2014. Installation work will begin in March 2012 when providers are contracted.

Telebrás estimates that once the cable is in place, connection fees between Brazil and other South American countries and Africa and Asia will fall by 80%. In addition, data traffic between these regions will no longer be routed through the United States and Europe, as it is now.

Jamaica obtains investments for the ICT sector

On 9 December, Jamaica's Minister of Industry, Investment and Trade, Christopher Tufton, announced a commitment by the private firm Convergys Corporation to invest in the country by building a customer contact centre in Montego Bay. The project will bring some 1,000 jobs to the country in 2012.

The minister noted that his government has identified the information and communication technologies sector, and especially process outsourcing, as strategic to the country's development. Tufton added that the factors influencing Convergys's decision to invest in Jamaica were the country's proximity to the United States and Europe in terms of time zones and an ample supply of educated English-speaking workers.

The business process outsourcing sector currently employs some 11,000 people in Jamaica, and the government is committed to facilitating investment and encouraging growth in that area.

European Union to measure real broadband speeds

To map broadband Internet connection speeds of users in the 27 countries in the European Union, the European Commission has launched a project to measure actual service speeds, independent of the data reported by regulators or providers.

The project is seeking volunteers who will agree to install a special device on their computers that will measure Internet connection speeds. This device, which will not affect user connectivity or record personal data, operates when the computer is in sleep mode and takes its own measurements.

To participate, volunteers should visit the website SamKnows (<http://www.samknows.eu>), the firm that is providing the service, and fill out a form. They will then receive the device, known as a Whitebox, free of charge, which they should connect to a modem or router so measurements can be taken.

@LIS2 (Alliance for the Information Society, phase 2) is a European Commission programme that supports the development of a sustainable, competitive, innovative and inclusive information society and co finances three projects: ECLAC @LIS2, RedClara and Regulatel.

ECLAC @LIS2, executed by ECLAC, seeks to continue to promote and, at the same time, improve and expand the dialogue and experiences on the information society in Latin America, as well as strengthen political, technical and social ties between the region and Europe in this area.

The present material was prepared with financial support from the European Union. Its content is the exclusive responsibility of ECLAC and should in no case be considered to reflect the official opinion of the European Union. The opinions expressed in this publication are the responsibility of the authors and do not necessarily reflect the views of the organizations involved.

Editor: Laura Palacios; Journalist: Rodrigo de la Paz; Design: Francisca Lira. ECLAC, Division of Production, Productivity and Management, Av. Dag Hammarskjöld 3477, Vitacura, Santiago, Chile. Telephone: +562 210 2239 or +562 210 2000. Fax: +562 210 2590. Website: www.cepal.org/socinfo. E-mail: socinfo@cepal.org. Twitter account @socinfo_cepal.