LATIN AMERICAN

YEARBOOK

ANUARIO

LATINOAMERICANO

2008

BROAD BAND

BANDA ANCHA

Towards total expansion

EL CAMINO HACIA LA EXPANSIÓN TOTAL

Convergencia LATINA

Editor's letter

The contents of the Broadband Yearbook's current edition emphasize on an increasingly converging scenario. Actions taken by telecommunication and cable services providers are, beyond any doubt, clearly aimed at providing multiple services. And broadband is the way to make such multiple orientations feasible, while the necessary regulatory changes to allow for this convergence are moving slowly and through a narrow path in the main markets such as Brazil and Argentina. We may wonder whether this business thrust will be capable of reversing regulators' delays.

The rate of growth of broadband connections for the region slowed down during 2007, reaching 45%. However, such variation level appears to be interesting enough, if we consider the significant share of the population which remains to be provided with services. If we further consider that, according to data from consulting company IDC, PCs sales grew 35% over 2006 and good sales prospects are envisaged for 2008, the various countries may still be expected to have interesting levels of access demand for operators in the years to come. xDSL continues to be the leading technology in most countries, with the advancement of other alternatives such as WiMax, CDMA 450 and other technologies offering high speed, even in areas of low population density.

Infrastructure, both in terms of access and transport, is at the scene center, and networks technology is becoming increasingly agnostic; the only thing that matters is to get where the demand is, offering the quality required by the user and at the moment the user is willing to buy it. Meanwhile, contents constitute a value chain great promise and the great challenge.

Some analysts are of the opinion that entertainment is the fuel propelling broadband, while others wonder whether current networks and planned improvements will be enough to take advantage of the opportunities offered by interactive television. The challenge, as shown by the analyses, interviews and projections in this yearbook, appears to be new television, and investments move into that direction.

3G mobile networks were launched successfully and Internet access through Laptops appears to be the application of choice for customers; and this is a key situation generating expansion expectations and warnings on its potential substitution of or complement to fixed broadband. As for Latin America, many users are probably experiencing connection to Internet for the first time through a mobile device rather than a computer. That, if terminal cost should become lower enough and 3G coverage should expand beyond big cities. Contents emerge as a bigger problem within the mobile world than in the fixed one, since while from a fixed access perspective they aim at a model similar to pay TV, the issue of profitable business models and content types for operators, but also for content producers, is still under discussion. For that reason, a significant space has been devoted to mobile contents in this yearbook.

This year, we will see more Double Play, much Triple Play, some cases of Quadruple Play, and probably a lot of trial and error in multi-service business models. We hope this yearbook will be useful as a reference source to analyze potential scenarios.

We would like to express our gratitude to Convergencialatina and Convergencia Research team, to subscribers and readers, to industry executives who have shared their views year after year, and to advertisers in this edition: Motorola, Emerson, Intelsat, Nokia Siemens Networks, Global Crossing, Redback, Columbus Networks, Brightstar, PCCW, TVC, Mixplay, PowerTel, Mobile World Congreso Barcelona and Converge Eventos.

Mariana Rodríguez Zani
Convergencialatina General Manager

Staff

CEO
Lic. Germán H. Rodríguez

General Manager
Mariana Rodríguez Zani

Editing Chief
Ricardo Bernhardt

Editor Broadband Yearbook
Ernesto Nimcowicz

Editing Staff
Mariano Carril
Ana Bizberge
Pilar Wolffelt
Danila Curotto

Collaborators to this edition
Ana Amaya
Ricardo Beltrán

Statistics
Convergencia Research

Design
Lorena Galisteo

Drawings
Leonardo Nocera

Advertising and Subscriptions
Silvina Rocha
suscripciones@convergencialatina.com

Convergencia Latina S.A.
Venezuela 637
(C1095AAM) Buenos Aires, Argentina
Tel.: 54-11 4342-3740
info@convergencialatina.com
www.convergencialatina.com

© 2008. All rights reserved.
[No part of this publication may be reproduced or stored in a sorting or retrieval system, or transmitted in any form or by any means, electronic, electric, chemical, mechanical, optical, photocopying, or otherwise, without prior written permission of Convergencia Latina].

Latin American Broadband Yearbook 2007-2008

Scenario

One for all, all for one > 5

Leaders say

José María Alvarez Pallette: "Growth prospects in the region are amazing" > 8

Armando Almeida: "Networks unbundling can make costs drop easier" > 14

Eduardo Gómez Chibli: "Most of the investments of Telmex are allocated to broadband"> 16

Víctor Agnellini: Unsatisfied demand is the pending issue > 18

Gonzalo Alonso:"The future of advertising goes along the relevance path." > 20

Alvio Barrios: Nortel commits itself to hyperconnectivity strategy> 22

Triple play & IPTV

At least 12 IPTV operations are expected in the region between 2008 and 2009 > 24

Juan McKenzie: "We have turned a theoretical concept into a concrete reality" > 28

Carlos Morea: BroadBandTech decentralizes its Triple Play model in alliance with cable operators > 30

Juan Waehner: "This will be the year of our DTH and IPTV launch" > 32

Contents

Mobiles to set a trend on new content accommodated to convergence > 34

Map and music services to lead multimedia demand > 36

Business of mobile search engines to boom in 2008 > 38

Trends

Migration to Metro Ethernet poses new dilemmas to carriers > 40

Telepresence moves forward in corporate life > 44

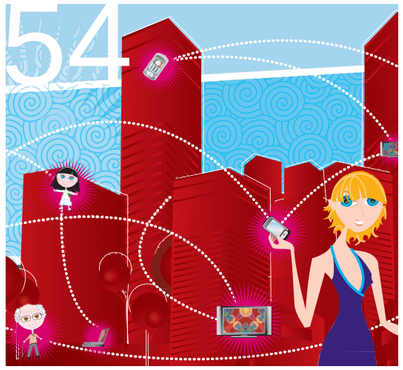
Lax paradigm of Next Generation Networking (NGN) > 46

Future

Digital Home: Interconnecting devices and lowering costs is still pending > 50

Digital cities promoted to achieve universal access to ICTs > 54

2008 will be the year for commercial launch of WiMax > 56



Regulation

The debate of how to regulate convergence still continues > 58

Dilemma over how to price interconnection in NGN > 60

Bridging the digital gap requires a new approach of Universal Service> 62

Cases

Brazil shows a quick growth in broadband services > 64

Mexico: Competition in the finish line > 68

Argentina, Chile and Peru. Economic growth as common factor> 70

Closing the digital gap will also reinforce role of State operators > 72

Arrival of submarine cables reduces connectivity problems > 76

WiMax or 3G: two ways to face difficulties of network expansion> 78

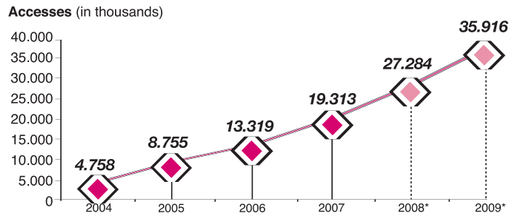
Statistics

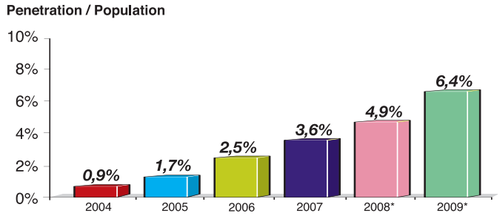
Argentina > 80
Bolivia > 82
Brazil > 83
Chile > 84
Colombia > 86
Costa Rica > 87
Ecuador > 88
El Salvador > 89
Guatemala > 90
Honduras > 91
Mexico > 92
Nicaragua > 94
Panama > 95
Paraguay > 96
Peru > 98
Uruguay > 99
Venezuela > 100

One for all, all for one

Broadband has begun to play a prominent role as a driving force for investments and it has achieved a key role in all the value chain. The rapid technological evolution and adoption of new business models will lead to multiple play in the short run

Number of accesses and penetration in Latin America - Evolution 2004-2007 / 2009 Forecast





* Convergencia Research Forecast

Broadband is no longer a luxury by means of which most people may communicate and develop both socially and economically. To the extent there is a trend towards convergence in telecommunication services and the multimedia industry, broadband has begun to play a major role as a driving force for investments. As regards operators' strategy, it has begun to play a key role in all the value chain, not only in terms of access but also in terms of transport, equipment and connectivity.

Latin America is living days of commercial dispute for Triple Play, after experiences with different alternatives, from IPTV to the combined offer of DTH and cable. Packaged services, greater links speed, underwater connections, laying of optical fiber, access by rural population with 3 thousand inhabitants, wire theft for copper sale and WiMax and third generation (3G) deployment are the most important items in the broadband agenda for the whole region.

Any potential bottlenecks in terms of installed capacity, plant available or technologies are currently being solved in the absence of major inconveniences. Global Crossing, Telefónica TIWS and Columbus Networks, which operate the main underwater cables connecting the region, are currently increasing the capacity of their networks and deploying new accesses. In addition, certain satellite projects have been launched such as Satmex in Mexico and VeneSat in Venezuela, aimed at widening satellite broadband capacity.

At the same time, there is increasingly greater consensus regarding the need to review the regulations necessary to provide a legal framework to networks, services and contents. There is also greater concern in sector discussions regarding the need of re-elaborating the concept of Universal Service, bearing in mind that access programs meant to narrow the digital gap should focus on broadband.

Not only will such framework favor the adoption of new converging services but it will also facilitate the rapid technological evolution towards new business models. Quadruple Play, the technological and commercial possibility of offering through a single provider a combined package with fixed and mobile telephony services, broadband Internet access and pay television, will take its first steps in Latin America this year. Brasil Telecom, Telefónica de Chile and EPM with Tigo in Colombia are already providing Quadruple Play packages. The two major players, Telefónica and Grupo

* Quadruple Play, the technological and commercial possibility of offering through a single provider, a combined package with fixed and mobile telephony services, broadband Internet access and pay television, will take its first steps in Latin America this year.

Carso - one of the Mexican Carlos Slim's holdings which includes América Móvil and Telmex - will engage in the offering of packaged services; yet, to the extent stronger solutions are developed, they will bet on network integration to provide fixed-mobile convergence. In this connection, there will be news this year as long as UMA platforms develop, as femtocells, for example, which may provide accessible interfaces between DSL or fiber laying and mobile networks, both in GSM and CDMA.

In turn, as long as penetration grows, necessary investment to obtain new customers will grow as well. In order to reach high-consumption market in cities, it is necessary to increase investment in networks to offer greater speed and more value added services, such as IPTV deployment. Moreover, it will be further necessary for the industry to consider new models and concrete actions to be taken in order to move forward to more sectors of population and fight against the digital gap, so that economically disadvantaged sectors and rural areas least favored by infrastructure expansion may be also included.

The risk of depredating the market through a battle of rates to increase penetration has led operators to resort to other alternatives, from seeking more creative marketing strategies, such as Double and Triple Play packages or the granting of subsidies for computer purchases, to the restructuring of business, such as IP implementation for the traditional voice service.

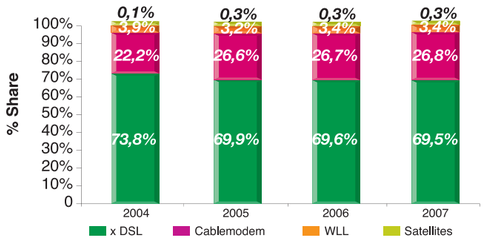
In this direction, mobile infrastructure will be the main access vehicle to broadband and Internet in the years to come. And not only through third generation (3G) services, as in the case of Millicom in Paraguay, and coming soon in Bolivia. There are also greater possibilities of mobile WiMax deployment as a fixed and mobile solution, or at least movable. Such is the case of Onemax from Dominican Republic and Korean Telecom in Venezuela, which offer the service through fixed, though portable or movable, terminals. This means that they may be moved to be used outside the home but they have not admitted their operation "in movement" yet. However, the recent Korean Telecom operations in Venezuela are offering WiMax with mobile devices.

And we are still expecting to see what Telmex will do this year, having deployed mobile WiMax infrastructure in Chile with nationwide coverage, they could also offer mobile services in the short run, in addition to imitating such model in other countries where Telmex has reduced presence in the residential market.

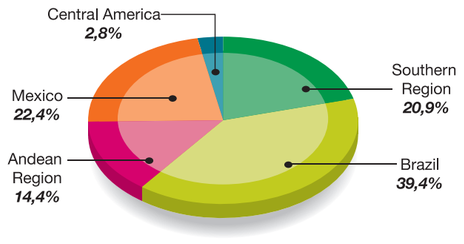
Both for 3G and WiMax there are two problems to be solved: on the one hand, the need to ensure the existence of enough spectrum so as to provide quality services. On the other hand, it is necessary to ensure the existence of mechanisms allowing for the marketing of terminals at reasonable prices.

As far as IPTV is concerned, its arrival will impact on the sector due to the significance to be achieved by interactive television in terms of revenue generation and network transformation. In spite of the fact that large-scale adoption will not be achieved, according to a study conducted by Convergencia Research, at least 12 service launchings are expected to take place in the region between 2008 and 2009.

Share per technology (2004-2007)



Share per region (2007)



¿Quiere incrementar rápidamente sus ingresos? ¿Sin dejar de satisfacer a sus clientes? Es hora de que hablemos.

Bringing networks to life.

En este mundo siempre cambiante, los operadores que prosperen serán los que sean capaces de adaptarse más rápido a los cambios en el comportamiento del consumidor y los avances tecnológicos. Trabajando juntos en soluciones que obtengan lo mejor del conocimiento de los consumidores y de los activos de su empresa, podemos ayudarle a desarrollar su negocio para ofrecer servicios que la gente valore de verdad.

www.nokiasiemensnetworks.com

Copyright 2007 Nokia Siemens Networks. Todos los derechos reservados.

Nokia Siemens Networks

José María Alvarez Pallete, Telefónica's General Director for Latin America

“Growth prospects in the region are amazing”

Telefónica's General Director for Latin America anticipated that the company will have reached 280 million customers by 2010 and that it expects to capture a portion of the new 20 million broadband accesses that will be added to the regional market

In the next four years, mobile telephony penetration in Latin America will reach an 83% level with 20 million new broadband users, as a consequence of a series of extraordinary situations that will take place in the Latin American economy. Telefónica's General Director for Latin America, Mr. José María Álvarez Pallete, spoke at length about these issues and about the problems and prospects of telecommunications in the region in an exclusive interview with **Convergencialatina.**

Convergencialatina (CL): ***What are Telefónica's views of prospects in the region for the years to come?***

José María Álvarez Pallete (JMAP): We are convinced that in the next three or four years we will experience extraordinary situations in the economy in general. Firstly, for the first time in the last 30 or 40 years, the seven main economies in the region are growing at the same time. Second, the most probable scenario for the next 18 months is that Brazil, Peru and Colombia will reach the “Investment Grade” level established by rating agencies. If so, 75%-80% of Latin American GDP will be at that level and such fact will mean that foreign capital investments and inflow in the region will increase threefold or fourfold since there will be no restrictions for a large portion of investment funds.

Another issue we have observed is that the region is growing with a more equitable distribution of wealth. In the last four years, about 70 million people have made progress and they are no longer living in poverty. If we consider that the net growth of population has been 20 million people, we may conclude that the situation has improved in this sense. For a massive sector as telecommunications, this is essential. We may also add that a significant number of people will become of labor age within a growing economic environment, thus entailing a dynamic effect which should not be underestimated.

All these facts have led us to conclude that the telecommunications sector in Latin America will be the one to achieve the greatest level of growth worldwide, including Southeastern Asia (except for China and Japan), with an 8% to 9% annual level during the next four years. This means that this sector will grow between 35 billion and 40 billion, motored by two segments: mobile telephony and broadband. As regards mobile telephony, we estimate that there will be between 140 million and 160 million new customers in the next four years, to reach an 83% mean penetration.

Moreover, there will be approximately 20 million new homes with broadband and we intend to achieve a significant presence there as well. Indeed, we have provided greater dynamics to such market in all the countries where we are present. Broadband penetration is moving really fast; any potential bottlenecks in terms of installed capacity, plant available or technologies are currently being solved in the absence of major inconveniences. In addition, we have an asset we believe to be essential, the underwater cable surrounding all Latin America and going from Argentina to Chile, which is important since it eliminates all access and exit restrictions to international traffic.

Moreover, our experience has shown us that when we “move forward” in the broadband market, our competitors follow us since they can not fall behind; this situation adds greater dynamics to competition and it is favorable for penetration, price and quality of services.

CL: ***As for broadband advancement, will it occur through mobile or fixed platform?***

We are not engaged in the business of content creation. We owned major content producers, such as Endemol, and we divested.

José María Alvarez Pallete

JMAP: They do not exclude each other, it will materialize in all platforms, and new opportunities will probably appear or new alternatives will be found, such as WiMax; but such advancement will occur in both platforms. We believe that fixed telephony or cable companies will be able to offer, at least in the short term, higher access speeds than those of mobile technology; however, there is also the mobility feature, which is highly valuable for customers.

CL: ***We have noted that companies are strongly interested in encouraging or directly participating in the production of contents. What is Telefónica's position in this sense, particularly taking into account the experience of having had a production company like Endemol?***

JMAP: We are content aggregators, distributors. What we are going to do is to make technology, access and speed available to our customers, and we will also send the contents they may require. For a broadband product to be successful it must be a quality product, whether in connection with its technical features, speed or signal stability and it will also require the best contents. We are not engaged in the business of content creation. As a matter of fact, we have divested such business. We owned major content producers, such as Endemol and we divested, since we realized that we need not be the owners of such contents and that what customers expect from us is merely that we make deals and make the best contents available to them. That is exactly what we are doing.

CL: ***Telefónica is interested in providing Triple Play services. This is not possible in several countries of the region due to regulatory barriers. How is it possible to solve this issue?***

JMAP: As operators, our experience has shown us that to the extent competition is intensified there is greater market dynamics, not only as far as access prices are concerned, but also in connection with product quality, closeness to customers and the value offered. Nowadays, we are getting closer to getting

TELECOMMUNICATIONS' SECTOR GROWTH
CAGR 06-10E

Latin America	7.8%
Emerging Asia *	7.1%
Central and Eastern Europe	6.9%
Africa	5.8%
USA and Canada	1.2%

For the first time in the last 40 years, the 7 main economies in Latin America are growing at the same time.

GDP growth, constant currency	CAGR 06-08E
Chile	5.5%
Argentina	6.5%
Venezuela	5.5%
Peru	6.6%
Brazil	4.3%
Mexico	3.4%
Colombia	5.6%

GDP per capita in Latin America (PPP): CAGR 06-10E>5.7%

Source: IDC * Excluding Japan, Korea, Hong Kong, Singapore and Taiwan

to 230 million customers in Latin America and our goal is to get from 270 million to 280 million approximately by 2010.

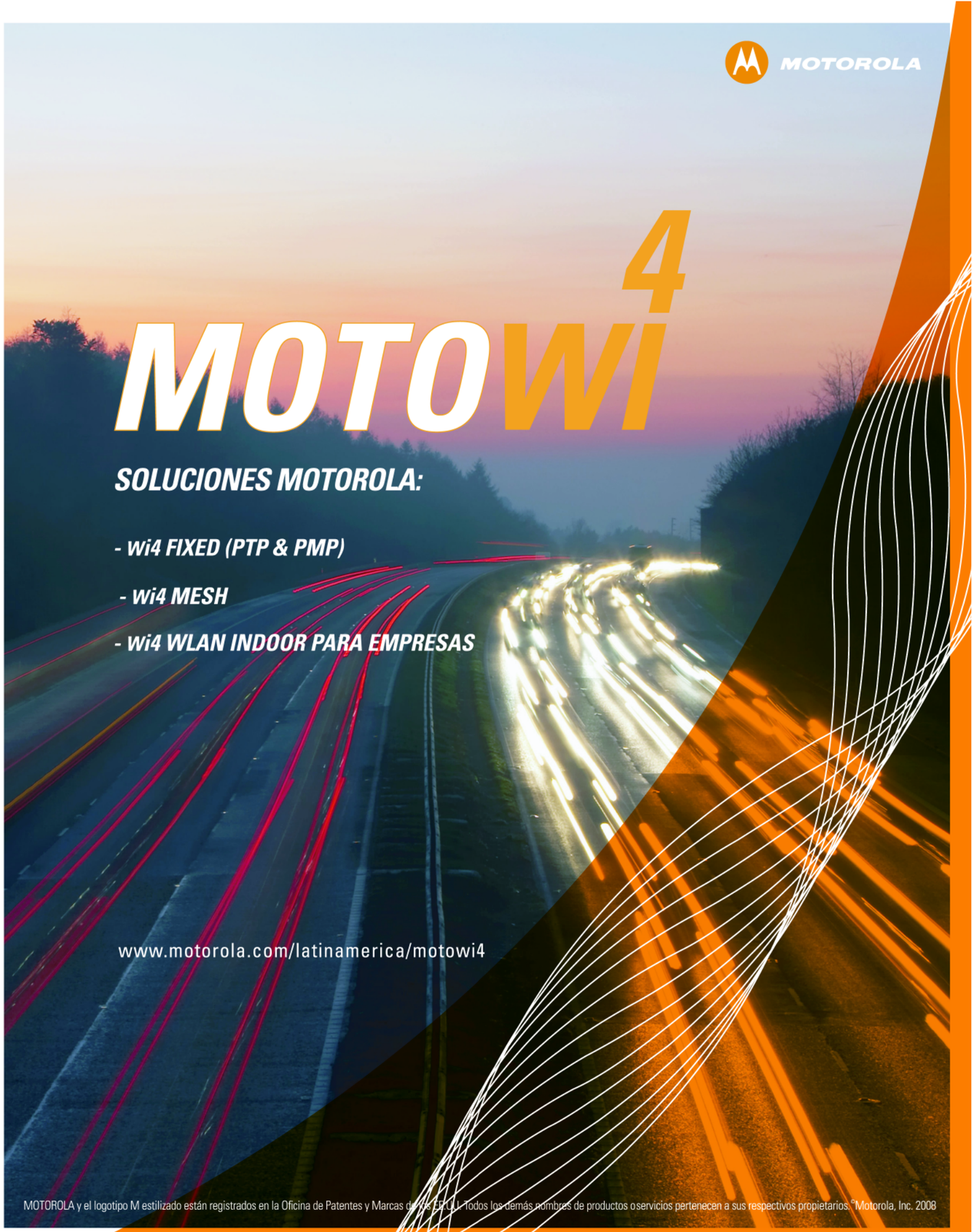
In order to accomplish that number, and taking into account that we are getting increasingly closer to sectors of the population having fewer resources, we must offer them an attractive product and we further need to have accessible prices. Competition within the same sector and competition among technological alternatives. In fact, in many of the countries where we are present we compete with cable operators and mobile operators. There are places where we only have fixed operations while we have mobile operations only in other places. On the whole, competition is of the essence.

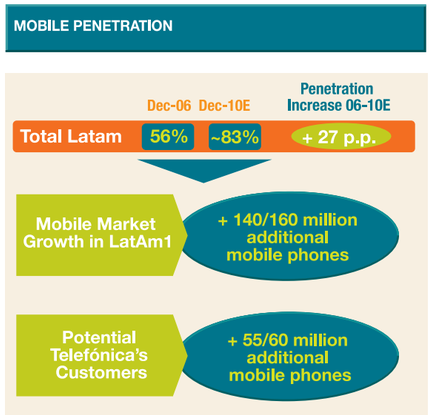
Consequently, we are trying to interact with authorities in order to explain them that this is essential, and that if these operations should materialize, Telefónica will become an investor determined to expand such services and make them available to the greatest possible number of people. We believe in convergence, in technological evolution and we also believe that it would be highly favorable for Triple Play products to become a reality, regardless of the technological option chosen, whether cable, fixed or mobile telephony. Therefore, we believe it convenient to attain evolution in connection with regulations.

More clients are asking for Triple Play products every day, and users are significantly pragmatic as far as technology is concerned, as long as they receive the appropriate quality of services, that is, in terms of speed and contents, and in terms of the assistance and services provided to them. Customers do not require any technology in particular, they just ask for a competitive product, with good quality and good contents.

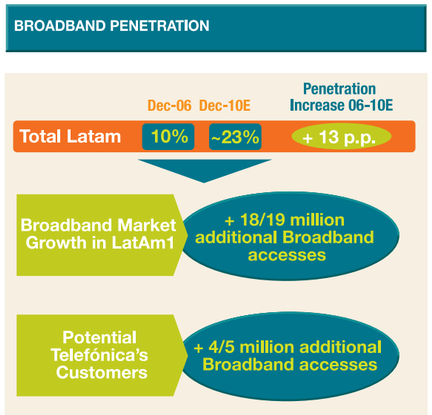
CL: ***In Brazil, where you cannot provide Triple Play, you have purchased a cable TV operator. If regulations change and such service is finally authorized, will you keep that operator or will you only venture into IPTV?***

JMAP: In the end, it is just a matter of network deployment. What we would do in that case is to analyze where the cable operator has networks, what the technical needs of those networks are in order to evolve in terms of bidirectionality, speed, in terms of capacity of its own to serve Internet traffic, and we would then compare them with our own network. We would then determine the most profitable, efficient and fastest way for deployment of our services. The best example of this is the case





Source: Telefónica's Estimates



Source: Telefónica's Estimates

of Chile, where we may have the alternative of providing IPTV in addition to other kind of services.

We are fairly pragmatic in the way we sell. Over time, interaction of the customer with the product will be more efficient than it is nowadays, perhaps with IPTV. But in many cases customers do not need such interaction or they are not willing to pay for it or they find no value in the offer. Then, in the end, it is merely a matter of location of networks, the kind of customers who need a certain kind of products and determination of the most profitable and efficient way of meeting those requirements.

CL: ***What is the company's expansion strategy?***

JMAP: Telefónica is the main investor in Latin America, in any country, any nationality and any sector. Nobody has invested in Latin America as much as we have. Figures are readily available, 40 billion in direct investment through the acquisition of companies, and we have additionally reinvested 37 billion on them to make those networks stronger. It is also true that much of the growth achieved has been inorganic growth, so to speak, but if we analyze companies from the moment we acquired them to present, 70% of growth achieved by Telefónica in Latin America has been organic. What I mean is that Telefónica acquired those companies and caused them to grow. The strength of Telefónica group is that we have been present in the region for over twenty years now, and nobody else in the sector has remained over time as much as we have. We have always had many competitors, but they have changed through all these years. Many of them left in critical times and some other new competitors appeared. There is a highly powerful competitor in the region these days. Moreover, in each country we compete with local operators which are very strong as well. For that reason, Telefónica has grown a lot these years; a lot means 100 million customers in the last 10 or 15 years.

As for potential acquisitions in the future, our president has said: "we need not buy to grow". However, we will analyze all the opportunities that may become available. TVA's case is Brazil is a good example; if we need to fill any spaces with any specific transaction we will do it, since doing it means moving faster, precisely in this attempt to capture such growth we believe is going to be accomplished in the region, in which growth Telefónica must play a key role. ■

Leaders' opinion

Armando Almeida, Vice president of Nokia Siemens Networks for Latin America

"Networks unbundling can make costs drop easier"

According to the top executive in the company in Latin America, levels of investment must be increased substantially to double broadband penetration as a way to maintain competitiveness in global market

Separating networks with regard to operation can be an essential element in the search of greater investments for the region and a reduction of costs of broadband access", pointed out Armando Almeida, Vice president of Nokia Siemens Networks for Latin America, during an exclusive interview with Convergencialatina. For the executive, Latin America needs to double current levels of penetration of broadband accesses by 2010 in order to keep competitiveness upon the growth taking place in other regions of the developing world.

Convergencialatina (CL): *How do you see the regional panorama of broadband?*

Armando Almeida (AA): If we analyze transport in mobile telephony, we can see that traffic is mainly related to voice and SMS. This is very inadequate since the spectrum used is small. However, when traffic of videos, music, and other services becomes important, through the wireless system, we will see that the system will need much more capacity, and the real levels of investment will need to be substantially increased. I believe that in Latin America, to compete with other regions of the world that are growing quickly, such as China or India, investments will need to grow substantially, bearing in mind that in those places disbursements are incredibly high.

CL: *Do you consider current levels of investment are not suitable?*

AA: I think that companies have invested a lot in coverage, but I understand that now they will have to use them for the improvement of networks, to make them more intelligent, and to obtain more capacity. In the future, operators will need, first and foremost, to try to learn about their customers' needs, and for that purpose they must have much more information than they have now, for which they should have systems far more advanced then those they have today.

CL: *Does it mean the operator should focus more on assisting customers?*

AA: Actually, this poses a great question: Are operators better at operating networks or should they focus more on being service providers? If we think about other services, banking for example, we can see that infrastructure does not belong to banks but to others. In the case of air companies, most of them do not own the planes but they rent them instead, and maintenance works are performed by third parties. Companies are actually focused on understanding and assisting their customers.
However, in the telecommunications world, companies are still very much involved in the engineering world and it is thought that it still is added value so as to differentiate from their competitors. I think it is just a matter of time; operating companies will focus more on their customers, their needs, and let others, the experts, manage the networks.

CL:Do you see a trend in this direction?

AA: In India, several operators do not own infrastructure. For example, the company Bharti, which is operator with greatest growth today, uses an infrastructure that belongs to Nokia Siemens and Ericsson, in a ratio of 50% each, and they both operate and maintain it. Basically, we have an agreement with them regarding service needs and it is our responsibility to cover those needs. If we do not meet our responsibilities, we are penalized, and when we do we are rewarded. Their business does not involve managing the network but rendering the service to their customers. Bharti has low rates and it is one of the most profitable companies. I know that today many companies are closely observing this model. In Latin America, I believe that operators, at some point, will have to make a decision about this.

I think it is just a matter of time; operating companies will focus more on their customers, their needs, and let others, the experts, manage the networks.

Armando Almeida

CL: *How do you see 3G deployment?*

AA: Even though until now there have already been some networks working, I think that in the following six months there will be a great number of announcements for the launch of 3G networks in several countries. However, some other things will appear as well, such as user training. In Latin America, customers are very "good" as far as voice is concerned, but they still do not use data.

CL: *Does the problem with broadband lie in high costs of access?*

AA: It is widely talked about prepaid system in mobile technology, which currently reaches 80% or 85% of the total, but if we analyze it from the point of view of traffic, the situation is very different. In most countries, postpayment systems have a much higher traffic than that of prepaid systems. This shows that there is a restricted demand since networks do not have good quality and rates are high. According to a study of Merril Lynch, the United States have an average by person of 834 minutes per month; but the first Latin American country is Mexico with 139 minutes per month, followed by Chile with 121 minutes, Colombia with 117 minutes, Argentina with 109 minutes, Brazil with 75 minutes, and Peru with 68 minutes. It can be said then they are countries with low ARPU, but, for example, India has the lowest ARPU of all and has an average of 487 minutes. Furthermore, there is a huge competition and the operators' EBITDA is good.

I believe that with the deployment of 3G networks, there is a chance to increase use through lower rates. But we need to bear in mind that the deployment of the 3G network has a much lower cost than 2G networks. I think that once operators discover the actual capacity of 3G, they will surely set much cheaper rating plans for voice service, thus increasing competition. ■

Leaders' opinion

Eduardo Gómez Chibli, Technical and Long Distance Director of Telmex

“Most of the investments of Telmex are allocated to broadband”

The Mexican company executive explained that all technological and planning strategies aim at convergence and do not rule out further acquisitions

The Mexican magnate Carlos Slim's company is considering to invest some $ 1.650 billion in 2008 in order to promote regional assets, regrouped in Telmex Internacional, the new group split-off. While the company is getting ready to launch IPTV in Mexico, in the rest of Latin America it continues spreading WiMax and is in the new business of cable operators, which enabled it to obtain leading positions both in Colombia and Peru. That, in addition to the possibility of going further in the Satellite Television market. Besides, it has already begun to make its first steps jointly with América Móvil, the other Slim's company, to launch fixed-mobile services. Convergencialatina talked to Eduardo Gómez Chibli, Technical and Long Distance Director of Telmex, about the company plans for next year regarding broadband development.

Convergencialatina (CL): *What is Telmex's vision regarding the broadband market?*

Eduardo Gómez Chibli (EGC): The connection between the future of telecommunications services and broadband expansion is extremely high. What we can see today is that all services, voice data, video, entertainment, tele-education, telemedicine, etc, have grown remarkably. These applications increasingly lead to convergence, that is, they will be provided to a same customer through a sole access. This makes us necessarily speak of broadband, since without it there will not be multimedia services. Without broadband it is not possible to project the future scenario.

Latin America stands for only 10% of the high speed accesses worldwide. However, the coming growth in the following years will be very significant. On the one hand, there will be big investments in the segment. On the other hand, more and more education in the use of IT will be provided which will make it possible to reduce the digital gap.

CL: *: What percentage of Telmex investments will be allocated to broadband?*

EGC: Deeply analyzing the subject, in fact, most of Telmex investments will be destined to broadband. This year, the company plans to invest a total of $ 1.650 billion. And what happens is that the name of the game hereinafter is broadband. We are talking about broadband not only connected to access but also transport, connectivity and electronic equipment. So, almost all technological and planning strategies developed by Telmex should, when thinking in terms of equipment, the fiber required for network installation, the electronics to be implemented, access and transport technologies, everything, necessarily lead to the provision of broadband. In short, all the investments of the company are inherently related. Probably, at the medium term, traditional services such as voice services will still encourage investments but most of the investments are in one way or another related to broadband.

CL: *Will you analyze new purchases?*

EGC: Telmex has always been a very active company in all matters related to the review and follow-up of opportunities that may arise in Latin America. We do not ignore any type of possibility. We keep on finding huge areas to develop our business in the region.

CL: *What are the prospects you see for triple play?*

EGC: Triple play is a very important factor for the coming scenario. In relation to other possibilities, triple play seems today as a path with no further deviation; it consists of a need immersed in competitivity. Our greatest concern is in Mexico where we are still waiting for the jurisdictional authority permission to offer video services through our networks. We are highly competitive in Mexico in terms of telecommunications. In the case of triple play, cable operators can already provide voice and broadband Internet access services. By the end of 2006, 28 licenses had already been granted to this type of companies. Also, operators who compete with Telmex in the field of fixed services already have licenses to extend their services. This shows that Mexico is one of the highly-competitive markets and that triple play is to play a key role to sustain this situation.

> Regarding new purchases, Telmex has always been a very active company in all matters related to the review and follow-up of opportunities that may arise in Latin America.

CL: *Are you ready to provide IPTV? How strong will other alternatives outside Mexico be?*

EGC: Yes, notwithstanding the fact that we currently lack authorization -we expect to get it by the middle of 2008- we have been getting ready in a very special manner to be able to provide television through our broadband services. And we have been getting ready, not only in relation to the technologies but also the processes associated therewith. Regarding the rest of the region, we are implementing all alternatives we deem viable. In the case of satellite services, we have agreements with Star One to expand our coverage in Brazil, Argentina, Uruguay and Paraguay and the South of United States. Regarding WiMax, we have important plans for 2008 in Chile, where we already have national coverage, Peru, Ecuador and Argentina. However, we do not see any need to double infrastructure, instead, alternatives such as DTH or WiMax will constitute a complementary service.

Eduardo Gómez Chibli

CL: *Do you see any prospects to form alliances with América Móvil to provide multiple play?*

EGC: Of course there is the possibility of an alliance with América Móvil. Projects are already being analyzed in Colombia and Chile, for instance. But that is part of a regional strategy we will study during next year. It is clear that today, networks are not designed by engineers anymore, but by customers and market alliances. ■

Leaders' opinion

Víctor Agnellini, Alcatel-Lucent President for the CALA region

Unsatisfied demand is the pending issue

According to this officer, the Government plays a key role in accelerating broadband expansion in the region

Interviewed by Convergencialatina, Mr. Víctor Agnellini, President of Alcatel-Lucent for Latin America and the Caribbean (CALA), pointed out that "unsatisfied demand of broadband access is a pending issue in Latin America." Once satisfied, it will have a highly significant impact on society, similar to that produced by mobile telephony, which resulted in many people having a telephone for the first time in their lives. Mr. Agnellini, who has worked and traveled through the region for many years, is enthusiastic about the broadband issue and highlighted that, as far as he is concerned, there may be no doubt about future events in this sense.

> It is necessary to increase competition, and for such purposes we need a regulatory framework enabling such competition.

Convergencialatina (CL): ***Which technology will prevail in broadband expansion?***

Víctor Agnellini (VA): Our opinion is that it will be a mixture of everything, as usual. The subscriber loop in Latin America depends, on a country-by-country basis, on whether it has greater or lesser quality or whether it has greater or lesser length. In order to connect ADSL, the longer the subscriber loop, the fewer possibilities of having greater speed. There are also cable TV companies which are implementing "high speed" cable modem, but do not have penetration in all the markets and all the cities. Then, they will attempt to reach those unaccessed places by means of mobile broadband, a 3G mixture, in CDMA and UMTS. This will be one of the alternatives.

In turn, some markets are going to connect Wi-Fi in the cities and to "backhaul" with WiMax, or they will connect WiMax directly. Consequently, there will be a mixture of 3G, WiMax, ADSL and, in some places, the latter will be enhanced to G-PON, to provide greater bandwidth and to supplement such technology with VDSL2, mainly for multimedia services, such as IPTV. In addition, there will be also a potential mixture of some satellite broadband solutions for those places that even WiMax, 3G or 2G networks will be unable to reach.

CL: ***It is believed that one of the greatest impediments for large-scale deployment of broadband accesses is the costs issue. What do you think about that?***

VA: In my opinion, each regulatory framework and each country have their own views about what they should and should not do. However, if an analysis is made, at a given time, cellular penetration was fairly low, but then the prepaid system was implemented and everything went up at a large scale. This means that the manner and the tools to increase penetration are available. This is just a matter of will from the parties involved. I think there is a mixture of factors which are converging so as to enable penetration to increase. I feel that there is a repressed demand, and I can mention a concrete case such as that of Telmex in Chile. We implemented a WiMax network for such company which covered the whole country, and they expected to reach a given number of new subscribers per day; they had achieved their business case. Well, I may point out that they have already exceeded such estimated number threefold.

In particular, it is necessary to increase competition, and for such purposes we need a regulatory framework enabling such competition. Then, we need to solve a couple of issues which are acting as barriers, such as access to frequencies and technology and begin to play with those factors. When a business case arises, there are companies which are willing to invest. Whether new companies focused on jumping into such space in which they could not compete or companies which were already present in such space but moved step by step as a consequence of the scarce level of competition. Therefore, we need to generate such framework, since penetration has increased significantly in those countries where a framework was created.

Víctor Agnellini

CL: ***Then, do you believe that the Government's role is essential for broadband development in any country?***

VA: I am of the opinion that the Government's role is a critical role when there are significant levels of concentration. It is always important, but it is even more so when it has to define in accordance with a given agenda. Obviously, each country, political parties or each one in particular have a view of their own about what should be done, whether more market-oriented or less market-oriented; however, in the end, my view is that the government should be focused on being able to say: well, we are going to try to create the conditions to have more offer at a lower cost for my city. If any government is against that, I believe that we ultimately face a political problem rather than a technological problem.

CL: ***What other factors do you consider to be important for broadband development in the region?***

VA: There is a key factor in all this, and it is the cost of the computer. Most countries have PC costs which are significantly lower than they were one or two years ago, but costs continue to be high. So, what is the use of installing broadband if I am unable to have a PC at home, or a telephone or a PDA or any other means of having access to Internet? In spite of the fact that such cost continues to be high, we have observed PC terminals in the region with prices from US$ 200 to US$ 300, which are comparable to high-end or mid-end televisions. Therefore, this factor will enable this trend to multiply more every day, since there is a strong interaction between the PC and broadband. The key will be to provide accessible prices for terminals and be able to reach lower sectors of population.

CL: ***How does Alcatel-Lucent stand to meet this strong demand for broadband technology?***

VA: As Alcatel-Lucent, we are particularly well positioned in such segment, which is a market with unsatisfied demand. And when you grow in the segment of broadband access, you achieve growth in all the other segments. Metropolitan networks of traffic movement grow, IP grows and underwater cable grows, where we have presence and see that there is strong demand ensured for many years. There are bottlenecks at present, as in the case of highways, where you broaden in a certain place and a problem is surely generated somewhere else in the different networks of operators. ■

Leaders' opinion

Gonzalo Alonso, General Director of Google for Latin America

“The future of advertising goes along the relevance path.”

The regional officer of the search engine considers that the Key in the business is to improve the user's experience and assure that Internet continues being neutral, open and independent, besides preventing Internet from becoming an intrusive instrument

Gonzalo Alonso

Gonzalo Alonso, General Director of Google for Latin America, asserts that the business model of broadband requires that users be free to choose how and where they want to surf in. In a conversation with Convergencialatina, Alonso pointed out that we should try to make advertisements appear as information relevant to what the user is searching. Also, users themselves produce contents which compete with the media. This change implies new challenges so that content producers keep on providing an added value to Internet.

Convergencialatina (GL): *What is the role that Latin America plays in the general strategy of the company?*

GA: A highly important one. Google measures its growth with the number of searches made by users. In developed countries that growth is still kept but it is already noticed that the curve is decreasing. On the other hand, in regions such as Latin America an exceptional acceleration is produced, so that the focus begins to shift. In Latin America broadband penetration is very low, but there is concurrent responsibility between the government, private initiative, and other organizations such as ONG's in Internet growth.

CL: *Do you think broadband rates should be lowered to promote growth?*

GA: “I don't have the silver bullet that kills the werewolf”. What I do know is that the more people we connect to broadband, the more powerful users we find. If YouTube is provided to someone who has broadband, this user will naturally begin to upload videos. Such videos may involve my kids playing soccer in a park in Mexico or a police officer looking for a prisoner somewhere in Irak, etc. This changes our vision of the world and it is obvious that the demand exists. How to make supply to meet demand is something the whole industry related to Internet has to discuss.

CL: *Regarding the sponsored search, do you find barriers to develop the service in Latin America?*

GA: Latin America is a region of low banking development; people are still keep their money under the mattress. There are daily robberies to ATMs and I do not see people stop using them because of that. However, people hear about “Internet frauds” and therefore they are afraid, despite the fact that the risk is much lower in the network than in teller machines. This is an example of the barriers which still exist and which should be overcome with the help of intensive education.

CL: *Which would Google's proposal for Internet be?*

GA: Google's proposal is to leave Internet open, democratic, inclusive and free. A way to justify intrusive advertising in Internet is to refer to the fact that television also has this type of advertising standards. On the other hand, Google says: we'll find a way in which advertisements and information may coexist, the user does not lose its experience and remains in Internet. A clear migration of the time invested toward less intrusive means is taking place. We are referring to this non-intrusive coexistence by maintaining the user's experience intact and the Internet environment as it was conceived, inclusive, democratic, free and open. This is what it adds value to it.

CL: *Which would the role of advertising in services such as video on demand be?*

GA: Let's imagine the possibilities when watching an interactive movie. Let's suppose it is the new movie of James Bond who drives his brand new Audi TT. If you like the Audi TT, with your remote control you guide the cursor toward the car, click on it and a window on the right side opens up. There, there appears a text box “sponsored by Google” which says that if you want to visit the Audi Site, you should click there. That is, the information of the movie is being complemented with the information the user is interested in. This is not intrusive. But there is an education cycle since you have to know that you may click on Audi, that it will take you to a text box, that you may click or not, and that it will take you to the information you were proactively looking for.

The future of advertising goes along the relevance path. Advertising is also information and it stops being information when the user is not interested. If advertisers can put their offer against the demand which makes the advertisement relevant, the user is going to use it. If the consumer perceives the advertisement as information relevant to what he was searching, the magic moment occurs when the user's interest meets with the information being provided to him. So there is a click, and that is where it is generated a whole business model which has taken Google where it is today. It is precisely because users do not perceive this ad as such what makes it so relevant, so much that “relevance” is the name of the future game.

CL: *And how do media and content producers stand in this scenario?*

GA: They stand as a link in the chain, as important as the previous one and the next one. Their role is still important or even more because now, in a world in which anyone may be a content producer, we need more than ever good media producers. Precisely because the producer is the person who may add value to the media in order that it may continue being business. If today the media producer decides to stop producing, the media immediately stops being a source of business and it vanishes. ■

We connect more than 240 million people in 19 countries offering wholesale high speed bandwidth capacity. We offer reliable and state-of-the-art service to telecommunications companies and internet service providers in the United States, the Caribbean, the Andean Region, Central America and Mexico.

STATE OF THE ART HIGH SPEED NETWORK SYSTEM · CLEAR CHANNEL SERVICES · IP SERVICES
NEWLY UPGRADED AND PROTECTED CAPACITY · TAILOR-MADE SOLUTIONS · STRATEGIC ALLIANCES

Columbus Networks 15950 West Dixie Highway North Miami Beach, FL 33162 ph 786.274.7400 www.columbus-networks.com

Leaders' opinion

Alvio Barrios, Vice president of Nortel for Latin America and the Caribbean

Nortel commits itself to hyperconnectivity strategy

According to regional manager of the company, the conjunction of macroeconomic and technological factors might produce one of the greatest increases of broadband in Latin America. WiMax and 3G will coexist

Today, different factors are coming together so Latin America experiences a strong growth of broadband accesses that will be mainly wireless, said Alvio Barrios, Vice president of Nortel for Latin America and the Caribbean, to Convergencialatina. Showing great enthusiasm for the subject, the executive explained the scopes of the concept of hyperconnectivity his company has been developing, by which by 2010 each person is estimated to have an average of ten network connections in various forms.

Convergencialatina (CL): *Why do you think broadband will be wireless in the region?*

Alvio Barrios (AB): Mainly because investment effort in optical fiber lines is highly superior to wireless technology and wireless infrastructure can be implemented much faster. Furthermore, today Latin America has three times more cell phones than fixed lines, and we believe that with broadband the ratio will be similar. That is why we are betting on WiMax as a technology that will provide that possibility.

The networks that exist today will not be able to take the pressure exerted on them because they have been designed in 99% for voice. Then, 3G optimizes voice and provides data services, but it does not have the scale in the level expected for bandwidth for new services.

CL: *However, many people consider that access costs are too high for the situation of broadband to be similar to that of cellular telephony.r*

AB: I believe there are two factors: first, the introduction of the service. The same thing happened with cell phones, not only in Latin America but also in the United States, where the cost of a handset was US$ 3,000.

Other factor is that related to devices. Today, most people who need ADSL have a PC or a laptop. I will not speculate, but I imagine that everyone who provides this service assumes that if the person has any of these devices, he or she has a certain purchasing power to be able to afford the cost for ADSL.

What is changing? We are talking about WiMax. To provide ADSL, there must first be an important investment in a copper plant, or modifications should be made to the existing one. The reason for the high cost in 3G to provide wireless broadband is that networks are not designed for data. This means that to be able to reduce bandwidth, to provide it exclusively to data -and not to voice-, the capacity of that radio base is being minimized. That is, it is much more difficult to deliver data than voice. At the same time, WiMax reduces the total cost per bit because technology is designed in an IP-based architecture, and that makes cost per bit be ten times cheaper than any other technology.

CL: *So far, there has been a widespread deployment of 3G in the region, how should we consider this?*

AB: Both technologies will coexist because they do different things. 3G will exist in the Latin American market for one single reason: it is a much better technology for voice traffic and at the same time, it allows users to have wireless broadband with certain capacity and mobility. But this technology has not been designed for data. It is not designed to transport video applications, or entertainment, videoconferences or any other application massively. WiMax is like a cloud in the sky that provides different qualities of service that allow delivering voice with operator quality, and at the same time, has a much wider range. They are like clouds; today, there are Wi-Fi, WiMax, and 3G clouds. Until 2009, WiMax will not have mobility available for devices.

> Latin America has three times more cell phones than fixed lines, and we believe that with broadband the ratio will be similar. That is why we are betting on WiMax.

CL: *Does this mean that devices will not be available for Mobile WiMax until the middle of 2009?*

AB: The first WiMax applications will be nomadic; that is where the handset ecosystem is completely different from that of cell phones. In the progress towards 2009, or whatever year, there will be much more integration; WiMax devices will have mobility and they will be much similar to cell phones or these will be more like a PDA, who knows; but today, WiMax handset ecosystem is completely different from cell phone ecosystem. We are talking about modems, that is USB, interfaces, iPods, iPhones, US$ 300 laptops such as the one Intel is planning to launch into market; many devices complement what exists today, as far as cell phones are concerned.

CL: *How does the subject of devices intertwine with the possibilities of expansion of broadband in the region?*

AB: Devices dominate this market, not networks, and it is obvious that the improvement of people's purchasing power in the region allows them to have other type of devices that support broadband. They do not necessarily need a laptop. That dynamics, the payment model for cell phones that is being applied to the sales model of computers, the support to connectivity through wireless mobile networks, is causing a huge change.

That is, if we observe the macroeconomic indicators in Latin America, and they are all showing important advances, I think that the region can become a market leader among others that are more developed. The opportunity exists, the macroeconomic situation is developing, and devices, which were the most restrictive issue, are also developing. There are many elements converging at the same time, which can lead to an explosion. I feel really optimistic and see a great opportunity in broadband and connectivity, and that is what Nortel is betting on through WiMax technology. ■

Alvio Barrios

At least 12 IPTV operations are expected in the region between 2008 and 2009

IPTV entails the development of a new ecosystem. Other "players" appear and traditional ones try to adapt. Operators, vendors, and aggregators are looking for a sustainable business model to get ready for the launch of the new service

Expectations to provide IPTV services to the region are very high, and operators are finalizing the last details for the launch in 2008: IPTV gives the opportunity to revitalize ARPU and expand broadband with a Triple Play service, also allowing cable TV operators to struggle. However, there are still obstacles to overcome before its full installation, some of which are temporary, such as regulatory barriers, and others more structural, such as the low levels of broadband penetration.

According to Detecon Consulting data, Latin America currently represents 1% of IPTV subscribers worldwide and in 2011 it will add up to 5%, when it will reach US$ 525 million.

Operators are getting ready to launch IPTV while they look for a sustainable business model. MaxCom in México, Telsur in Chile, Telefónica in Peru, CTV Telecom in Panama, EPM in Colombia and Brasil Telecom, among others, are already providing the service.

UNE - EPM

Hernando Salazar Roldán, Expansion Director of UNE - EPM (a company that has 300,000 television customers and near 400,000 broadband customers) explained that they have recently launched fiber and copper IPTV in Medellín with a Triple Play offering, for which they have invested US$ 6 million. "The service provides 80 TV channels, with speeds from 200 k to 2 megabytes and various flat-rate packages for local and national calls". Service bills are sent to the customer separately.

mixplay
Login | Registrate | Contáctenos
BUSCADOR [Todos]
PLAYER
Home Moda Música Soda Stereo Zplay Deportes Mujer Lifestyle TV Cine Predicciones Niños Bloopers
El Dr Crazy hace magia en el Agua
El científico te sorprenderá con otras de sus locuras. Esta vez, verás la acción...
Mixplay | Dur:10:05:04 | 12/12 |
más de: Música, bandas, recitales, conciertos, info
URL: http://www.mixplay.tv/videosonline/31700.php?playgroup
EMBED: <iframe src="http://www.mixplay.tv?API=cGxheWVyfGlkYz0
Relacionados Playlist Comentarios
¿Cómo meter un huevo en una botella?
El Dr. Crazy hará un experimento extraordinario con un alimento...
¿Cómo hacer cristales?
En un nuevo desafió, el Dr. Crazy te ayuda a fabricar cristales...
Guardar Playlist Ver Playlist
Reproduciendo... 01: 48 / 02:05
VER 128K 350K DESCARGAR 1 MB 3 MB
PUBLICIDAD mixplay Videos Online
BUSCAR
Videos / Lo Nuevo ver todos agregar todos 101- 105 / 155 « 222 | 223 | 224 | 225 | 226 »
Lo Nuevo
Música
Cine
Mujer
Toda la moda para el verano
Los mejores cuentos infantiles
Disfrutá de este recital de la banda
Deportes Extremos
+info | agregar Ver
| Contáctenos
Certifica.com
powered by mixplay
LOS USUARIOS DE INTERNET ESTÁN VIENDO CADA DÍA MÁS VIDEOS ONLINE
MIXPLAY SOLUCIONES
PLATAFOMA, CONTENIDO Y SERVICIOS
PARA PROYECTOS WEB TV
Licenciamiento de plataforma de streaming y descarga de contenidos audiovisuales por Internet.
Protección de los derechos de propiedad con tecnología DRM (Digital Rights Management) de Microsoft.
Actualización y provisión de contenidos audiovisuales de Moda, Mujer, Música, Deportes, Documentales, Cine, Predicciones, Niños, Autos y Lifestyle.
Contenidos regionales y locales para usuarios de habla hispana.
Servicios de hosting, conectividad y digitalización de contenidos audiovisuales.
mixplay
www.mixplay.tv
Contáctenos: info@mixplaycorp.tv – (54-11) 4339-3700 – ext. 3808
Una unidad del grupo CLARKSON

* According to Detecon Consulting data, Latin America currently represents 1% of IPTV subscribers worldwide and in 2011 it will add up to 5%.

Brasil Telecom

In the case of Brasil Telecom, the service is not strictly IPTV but VoD, since regulations prevent telecommunications operators from offering the traditional cable and public channels. Carlos Watanabe, Video Communications Business Director for the company said, "we really hope that regulatory obstacles are overcome to be able to proceed with a full IPTV offering, but in the meantime we will start with VoD in September 2007 in Brasilia, covering the Mid-West and South of the country".

Brasil Telecom offering is "Quadruple Play", which provides Internet, fixed telephony, and VoD in one bill and mobile telephony in a separate one. From a total of 7 million broadband customers in Brazil, the operator has 1.5 million; according to Watanabe's statement, half of them can afford IPTV.

Its strategy to attract new users could be defined from "captive customers" in the sense that, to be able to have VoD, the customer needs to be subscribed to the broadband service. This is due to the fact that to provide VoD service they use copper pair infrastructure with which they provide broadband and telephony.

As regards contents, the Brazilian operator offers access to music, children, and documentary material, as well as to 200 movies for a monthly rate of US$ 16.6. At the same time, to have a movie available for 24 hours, customers will be charged extra based on the content class. "Blockbusters are US$ 3.8; catalogue movies that are two years old or more, but that were box-office success, customers will pay US$ 1.1, and for adult content they will pay US$ 5", said Watanabe.

As a distributor, Brasil Telecom implements different business models for content management. "Depending on who the speaker is, we are subject to revenue share, pay per user, with sponsorships during content broadcasting or free of charge, especially in the case of public television since they offer their content with no commercial value in exchange for certain visibility", explained Brasil Telecom's executive.

New ecosystem

Undoubtedly, IPTV entails the development of a new ecosystem where traditional players such as vendors must perform an upgrade, while new emerging players struggle to participate in the business. It is the case of IPTV Américas company, which aims to position itself as a content aggregator. Even though there had not been any commercial launches yet, Álvaro Gazzolo, President and CEO of the company, expects them to take place between April and June 2008 in the Caribbean, Panama, Guatemala, and Ecuador. "In 2012 we forecast there will be 1.2 million subscribers including the different operators in the region, of a total of 3 million that there will be in Latin America, said Álvaro Gazzolo.

Gazzolo said that IPTV Américas' business model consists of acting as a link between the content provider and telephone companies. "The operator is charged per subscriber, depending on the requested volume, and values range between US$3, US$ 0.50, and US$ 0.25. When there is a great amount of subscribers, we set a flat rate", he explained. "The advantage we offer is that if the operator deals with the content provider on its own it pays more per user, however, with us it can obtain a discount in the cost of set-top boxes, middleware, conditional access and contents", he then concluded.

Purchases

In view of the transformation the sector is undergoing with the possibilities offered by convergence, Roberto Shigueo Suzuki, responsible for Wireline Solutions of Motorola Home & Networks Mobility for Latin America and the Caribbean, stated "in the last 18 months we have initiated a period to purchase companies that are related to IPTV, which involved a change in Motorola operations, from equipment provider to integrator".

The acquisition stage began with the Swedish company Createl (set-top box manufacturer), it then went on with Tut Systems and Modulus, which are dedicated to transcoding video processors from MPEG-2 to MPEG-4. The third purchase was Terayon, which allows incorporating advertisements in local programming and, finally, Broadbus, a specialized company for the VoD solution.

Shigueo Suzuki was also confident regarding Motorola's position in the light of the development of IPTV in Latin America. "Having a relationship with Telefónica from Spain opens many possibilities for us. Furthermore, where Microsoft was selected as middleware, our set-top boxes will be used", he stated. ■

IPTV in the region

IPTV Cases *as of Feb 15, 2008*	Number of Subscribers
Maxcom (Mexico)	6.000
Telsur (Chile)	6.000
Telefónica CTC (Chile)	300
EPM-Une (Colombia)	1.000
CTV Telecom (Panama)	250
Telbo (Bonaire)	N/D

VoD Case *as of Feb 15, 2008*	Number of Subscribers
Brasil Telecom (VoD)	N/D

Future IPTV launchings (2008-2009) - *as of Feb 15, 2008*
Telmex (Mexico)
Cantv (Venezuela)
Enitel (Nicaragua)
Telefónica Colombia (Colombia)
ETB (Colombia)
Codetel (Dominican Republic)
Centennial (Puerto Rico)
PRT (Puerto Rico)
Antel (Uruguay)
ICE (Uruguay)
Copaco (Paraguay)
Andinatel (Ecuador)

Source:
Data provided by companies.

Redback NETWORKS
AN ERICSSON COMPANY

Redback crece globalmente con Ericsson

A través de las nuevas soluciones con la asociación Ericsson y Redback usted podrá:

- Reducir el CAPEX (>20%) y el OPEX (>50%), mientras incrementa sus ganancias con nuevos servicios;
- Implementar un ruteador edge de multi-acceso capaz de habilitar una simple infraestructura de servicio y la convergencia de fijo-móvil;
- Incrementar su liderazgo en la industria en un 75% como los mejores operadores de Telecom en el mundo;
- Tener acceso y soporte global del Grupo Ericsson.

SmartEdge Multi-Service Edge Router Family

www.redback.com

Triple Play & IPTV

Juan Mckenzie, Director of CTV Telecom

“We have turned a theoretical concept into a concrete reality”

So said the headline of Panama's first company that offers IPTV with an 84 km fiber cable laying that reaches the consumer's home directly. With a Triple Play offer, they expect to get 6,000 subscribers by the end of 2008

CTV Telecom, a Panamanian company set up to provide IPTV, started its operations in Panama in April, 2007 and launched its commercial offer in September 15. With its own 84 km optical fiber laying with direct access to homes, the company provides a Triple Play offer in the metropolitan area for residential and corporate customers.

To make the IPTV solution come true, the company (whose main shareholder is former minister Olmedo Miranda) has made alliances with Sonitel, Kassena, Intel and HP, who provided the infrastructure; Cisco, who provided equipment for customer service nodes; Tandberg, who contributed their receptors of satellite signal processing and encapsulation; and Amino for set top boxes.

Convergencialatina interviewed Juan McKenzie, CTV Telecom Director, who talked about the company's plans and the business model they are implementing.

Convergencialatina (CL): *Since the beginning of your operations in mid September, how many customers have you got?*

Juan McKenzie (JM): The first thing we've got to take into account is that we have turned a theoretical concept into something practical in 8 months. Today we have 250 service requests from residential customers. We have laid the net in 9 buildings, some of which are still under construction. We expect to have 6,000 customers by the end of 2008.

CL: *What are your offers and how much do they cost?*

JM: We offer four packages. Premium, which costs $89.75 and includes 105 TV channels, the PVR function digital box (which allows to record, pause and fast forward) and 1 megabyte Internet connection. For every required additional megabyte, the customer must pay $10.

Another alternative is the “personal package” for residential customers where the public design their own programming grid from 81 available TV channels, but they must choose 15 channels minimum. The TV offer is complemented by 1 megabyte Internet connection and the digital box for $60.

The third package is the business corporate package consisting of 11 TV channels, 2 megabyte Internet connection and the digital box for $64.75. Lastly, we have a package for SMEs with similar characteristics but including 1 megabyte Internet connection for $49.75.

All the packages include the chance to add VoD and PPV services, as well as interactive or alarm services, such as surveillance systems. Regarding VoD, its price depends on the movie _if it is a premiere, it costs $3; a library movie, $1.95; and an adult film, $6.50.

The alarm service ranges from $49 to $69.50, and the video surveillance service ranges from $25 to $80, depending on the number of cameras required by the system.

Our offers also include content filters so that, for instance, adults can prevent minors from watching certain programs, which are are automatically blocked when using this feature.

CL: *Who is IPTV service target audience?*

JM: Basically, the ABC1 segment. This is because nowadays we have an exclusive presence in the metropolitan area. As our coverage extends, I think we will reach the C segment. Anyway, our prices will not limit the service acquisition, as our costs are lower than those of our competitors. In the TV paid segment, our competitors are Direct TV (who provides satellite services) and Cable Onda (coaxial cable) who also offers broadband, as well as Cable & Wireless.

CL: *Do you plan to extend the optical fiber net laying to attract new customers?*

JM: At present, we have 84 km of metropolitan optical fiber, which required investments of approximately $10 million. Given that we obtained a federal license, in 2008 we expect to extend our laying to the most important cities in the country. Mainly, I refer to the Atlantic coast, through Colón Province and the west of the city. We will install new nodes in San Francisco, Bethany and Marbella.

CL: *What TV content management business model will you implement?*

JM: As net owners, we are concentrated on the distribution segment and make agreements with TV content companies, such as HOB, Fox, Turner and Televisa, among others, to provide us with material based on a payment per number of subscribers and a guaranteed minimum number.

We have trusted our TV content suppliers as, because of the kind of technology we operate, we give them access to our customers' invoicing interface, allowing them see our subscribers' database.

To set a good relationship with TV content suppliers, we had to pull down some prejudgements. Firstly, it was necessary to clarify the difference between TV and IPTV, for which we started a “technical teaching” task. Then, some suppliers' fears had to be overcome concerning the “personal package”, as they were worried that their channels would not be selected.

In the future, we would like to move back in the value chain and move from being distributors into the addition segment. As we have the ability to create private channels, there are already some independent production companies who have contacted us to include their production in our line.

CL: *What makes this business profitable?*

JM: On the one hand, IPTV technology flexibility, which enables the development of new products more easily and, on the other hand, the possibility to negotiate material costs (fibers, equipment, etc.). Also, we keep adding value to the net with a “partnership” policy with TV content producers or developing the product internally with our own managing resources and, in this way, increasing the average income.

Juan Mckenzie

CL: *Do you intend to extend the IPTV service offer outside Panama?*

JM: We would like to establish alliances with other Latin American countries, but it is too soon to talk about that yet. However, we are discussing with some telecommunication companies in Central America to provide them with similar services to those we offer in Panama. ■

Triple Play & IPTV

Carlos Morea, CEO of BroadBandtech

BroadBandTech decentralizes its Triple Play model in alliance with cable operators

The top executive in the company provides details regarding the expansion of the company in Argentina, Brazil, Uruguay, and Colombia, and he does not rule out new markets such as Mexico, which might be acquired through agreements with players that are left outside the supply of integrated services

The Argentine company BroadBandTech (BBT) developed a model that enables cable operators to incorporate telephone and broadband services. BBT has 12,000 broadband users and 2,000 telephony users in 25 towns of Argentina. Carlos Morea, CEO of BBT, explained to Convergencialatina the company's decentralization plans through its business model in alliance with cable operators.

Carlos Morea

Convergencialatina (CL): *Which market are you aiming at to grow in the region?*

Carlos Morea (CM): We see that smaller cable TV companies will not be able to make necessary investments to make their networks digital. Therefore, our search is focused on an alliance with cable operators, which is adapted to their needs and interests. In this alliance, we provide voice interconnection, local calls, and broadband. For this purpose, we use their network and train the staff. BBT provides IP telephony that is interconnected with the public network. Communications travel through IP between the subscriber's home and our softswitch, and then, they go through the public network. In some cases, the cable operator wants to do as least as possible, and in others it wishes to be more involved.

CL: *What do you think of the actions taken in the region?*

CM: Since the beginning, we have been focused on Argentina, Brazil, and Uruguay. Another country that we are analyzing is Colombia. Of the other countries where cable is developing, Chile is too far ahead, and we do not rule out the idea of entering the Mexican market in the future.

In Uruguay we signed an agreement with Cable Plus, one of the largest cable companies in the country, with almost 15,000 subscribers. However, we were not able to start rendering the broadband access service due to a very particular situation: previous Government had granted us a license to offer broadband (the monopoly is owned by the State company Antel) and the cable operator was required to get a carrier license, which meant having a double license to start operating. After the change of Government, the cable operator was denied said license. Nonetheless, we have a good relationship with the authorities and we are optimistic that we will be able to start providing the service this year. We have invested in equipment and we have had cable modems ready to begin operating for three years.

CL: *How are operations in Brazil?*

CM: The situation there is very different. We have a national license for voice and broadband services. We hold an agreement with a cable TV company in the city of Vittoria, state of Espíritu Santo, and in the next few months we will launch our services in a very big city together with a cable operator; but we cannot reveal its name yet.

It is true that we have had a hard time in Brazil trying to move forward, but 2008 will be an important year for us since the launch of IPTV by telephone operators will foster operations from cable operators with investments for Triple Play. In Brazil, we also hold a representation agreement with Mediamundi, a cable content provider company that includes our solution in its product portfolio.

CL: *Have cable operators made the transition to digital technology in the region?*

CM: Most of them have analog networks. They are all thinking of making the transition to digital networks, but this process will take several stages since it requires substantial investments. We recommend starting with coaxial networks.

There are three great investments an operator should make: fit out the network; purchase the most important equipment; and buy set-top boxes. Depending on who makes the investment and in which areas, income is distributed accordingly between BBT and the cable operator.

CL: *How much does a cable operator need to invest to provide broadband service?*

CM: The maximum amount, with a network in a very poor condition that needs to be completely fitted-out, ranges between US$ 70 and US$ 80 per subscriber. But our experience tells us that the real cost is somewhere between US$ 10 and US$ 30 per user. Investments are mainly aimed at making the cable network reversible, which requires placing amplifiers and, in some cases, laying a little fiber so that the architecture will have a good ratio of fiber and coaxial cable. But this is very expensive.

The rest of the investments, unless the cable operator wishes to make them as well, will be made by BBT: cable modem is US$ 50 per subscriber, and the equipment that needs to be installed at the base can also be between US$ 15,000 and US$ 30,000. Even if the cable operator wants to pay for everything, the investment will resist quite well.

CL: *How much time does it take to recover the investment?*

CM: It takes a few months. If the cable operator invests part of what it earns with business, it will be enough. And it will recover the investment with Internet business. As an example, a small cable operator that has 1,000 subscribers and wishes to provide broadband service to 300 users, it should invest US$ 45,000 in cable modems and equipment. Assuming that cable rate is US$ 25 per month, the income the operator will receive from those 300 subscribers to whom it will provide the broadband service will be of US$ 7,500. This means that with what it receives from said subscribers in the video business, in six months it will be able to complete the investment in the network and buy all the devices.

We suggest cable operators that, even if they have made the decision to sell, it is advisable to add services. In this way, they increase the value of cable, they are not at the mercy of the buyer, and they go from having a value of US$ 200 to US$ 1,000 per subscriber.

CL: *Does the transition to digital technology jeopardize BBT's business?*

CM: We are not trying to stay in the business forever. We simple want to help and be compensated for that help. Big companies like us know that at some time contracts will be cancelled. In general, what we see is that small cable operators are not going to make the investments they need for the transition to 3Play due to a lack of expertise and the fact they have trouble trying to deal with the subject. ■

Juan Waehner, Telefónica de Argentina's General Manager

"This will be the year of our DTH and IPTV launch"

The Argentinian operator CEO further explained the plans for convergence in a market characterized by regulatory restraints on telephone companies to provide video services

Despite the regulatory restraints to provide IPTV and DTH (Direct To Home) that Telefónica de Argentina has to face, Juan Waehner, the company's General Manager is optimistic about 2008 and assures that the country's primary supplier will start providing Triple Play services. Waehner's statements are not just a bunch of good wishes coming from the man who runs the company daily. Many voices in the market consider that the Argentinian Government will give Telefónica the go-ahead to start providing such services. In this interview with Convergencialatina, Waehner explains what Telefónica's strategy will be concerning Triple Play and broadband.

Convergencialatina (CL): ***When do you expect to launch Triple Play services?***

Juan Waehner (JW): "During the first months of 2008. First, we will launch DTH (Direct To Home) and then Triple Play with IPTV. Of course, within the legal and regulatory framework. Every country has its own timing, and we will overcome that. However, here we are already carrying out some pilot tests. (Interviewer's note: In Argentina, telecommunication operators are not allowed to provide radio broadcasting services. In 2007, the Argentine Cable Television Association (Asociación Argentina de Televisión por Cable, ATVC) filed a claim to stop telephone companies from providing IPTV. For now, the Court has decided against the telephone companies but the claim is not closed yet).

CL: ***What business model will Telefónica bring to IPTV?***

JW: With Imagenio, which we have already launched in Spain, but in an upgraded version. We will use fiber optic in the areas where necessary, which will root out every restraint on speed.

As IPTV is a complex technology and difficult to disseminate in the short run, we have also planned to launch satellite TV (DTH), just as we did in Chile, where we already have more than 250,000 customers, and also in Brazil and Colombia. This has no synergy with what we've been doing in Argentina, but it does with what we are going to do, and it will let us learn, incorporate knowledge to the world of TV content, as we get ready for the moment when we will be able to disseminate IPTV nationwide. To that end we need to acquire new skills.

CL: ***What will happen with copper networks?***

JW: They will coexist. This will depend on the applications the customer uses: to have 1 Mbp broadband, ADSL over copper is very good, but for another kind of user such speed is not enough.

This year project is to switch to fiber in the 16 major telecommunication centrals we have in the Metropolitan area in Buenos Aires. We must segment depending on potential customers. Copper, with higher speed where necessary, and fiber, where necessary, too.

CL: ***What are Telefónica's prospects on customers for this year?***

JW: We think that in the first months of this year we will have 1 million Internet access broadband connections, and we will make every effort to have 1.2 million or 1.3 million by the end of 2008. We usually calculate an annual estimate, such as every company does, but we also calculate quarterly estimates. And we have exceeded all them so far.

CL: ***Does Telefónica's investment plan for 2008 primarily focus con developing the broadband field?***

JW: Yes, more than 50% of anticipated disbursement for 2008 will be assigned to increasing broadband. Recently, the company disclosed its investment plan for this year, which comes up to $536 million, 20% higher than last year. And for the 2008-2010 period it will reach $1,892 million.

CL: ***In a scenario where the big bet is voice service, Internet and paid TV integration, what is traditional telephony's destiny?***

JW: SWithout traditional telephony, we could not foster broadband growth as we do. We can't predict a negative future for traditional telephony. We are doing well in this field, while in other countries its use decreases due to its competitor: mobile telephony. In Argentina, we grow about 3% annually. And, even though the Minutes Of Usage (MOU) keep falling year after year, the Average Revenue Per User (ARPU) increases.

Juan Waehner

And this is mainly due to business management through the packages, such as DUO, which is broadband plus unlimited local calls.

CL: ***How are you going to solve the TV content issue in the process towards Triple Play?***

JW: We have work-teams strongly focused on this issue, like our Terra & Telefé portal (Telefónica's TV channel) which exports content formats very successfully. Also, we will seek for alliances, many aspects of which are already in force. There is also users' own production.

PCCW™ PCCW Global™

Accelerate Your Network.

Achieve **superior** results.

- Reliable international infrastructure and capabilities
- Commitment to service excellence
- Unmatched access to Asia
- IP transit full global routing and leading SLA
- MPLS worldwide reach with coverage to over 70 countries

Contact us today to transform your network:
latinamerica@pccwglobal.com

703.621.3196 | www.pccwglobal.com

Mobiles to set a trend on new content accommodated to convergence

Distribution on several platforms will restate production formats as well as business models for advertising income and access

In Latin America, content production is strongly concentrated: Televisa, in Mexico; Teleglobo, Brazil; Caracol, Colombia; RCTV, in Venezuela. However, competition was empowered during the last years with the arrival of a bigger group of independent production companies, a phenomenon that primarily took place in Argentina. This group of local companies adds to transnational subsidiaries, such as FOX, which are set up in the region in order to lower costs by generating materials where labor cost is cheaper and of a similar quality.

With service convergence, broadband and mobile content offer extends, and production companies tend to become part of this scenario investing in a type of business that not long ago was far from them. Programming is not done based solely on the traditional audience. TV programmers start developing this new investment unit producing mobile-adapted or web-adapted soap operas, series, and news or cartoon episodes, together with games, wallpapers, ringtones, trivia and SMS.

Mexican Televisa is setting a path to follow as regards content production for new formats and digital platforms: Televisa is regarded the biggest Spanish content production company worldwide. It generates 50,000 production hours a year and, after reaching Mexico's expansion limit -where it holds a 70% market share in open TV- , it started developing international projects which range from USA Hispanic market to China. Fortunately, Televisa Estudios sells formats to those who can ensure a series of quality standards. Also, the company has stopped being just an open television chain in Mexico to become the main paid TV operator in the nation (with cable as well as DTH), a bet seeking to add new distribution platforms for their content and which allows them to be a true example of telecommunication + multimedia industry convergence.

Since 2007, Televisa has gone deep into its strategy of the wide offer of added value for the Internet and mobile phones. At the beginning of November, the company announced the development of new channels together with esmas.com portal, run by Televisa. As part of the new service array, there are Esmas Móvil, with content and sound for mobile phones; Tarabu, a music channel with more than 500,000 songs on catalogue, music communities and content channels, besides Gyggs, the community platform recently launched. However, this portfolio's star product is Esmas Player, which enables multimedia content administration, on-demand video downloads, and online Live TV services, with formats especially produced for Web TV.

Televisa's bet is to extend its regional hegemony, in view of the big studios landing -mainly form the USA - in the regional Internet content market. In fact, Disney was one of the first to take this step, when concluding a content agreement with Terra, Telefónica's portal. Disney will provide the Internet site content for Brazil and 17 Spanish-speaking countries. The agreement will enable Telefónica to have more than 60 movies, 11 TV series and 3 non-animated series that the portal has gradually started offering in Web TV mode.

However, Terra's expectations in the field are higher. Telefónica developed Terra TV for the region, which offers through the Internet and enables Latin American users to have access to more than 200 international TV channels and the portal's own productions, such as documentaries, series and news programs. To that end, in the last two years, Terra has set up studios to produce multimedia content in Mexico, Brazil and Argentina.

The role of signals in the mobile scenario

The arrival of third generation (3G) presents new opportunities, for operators as well as content producers. Besides, it extends the offer horizon of mobile entertainment forms. From the user's point of view, it is clear that they would not sit to watch mobile TV or video streaming for hours, but just for a few minutes, maybe 15 minutes while traveling by bus, train or waiting for a date. What users consume most is SMS, ringtones and all sorts of contests.

But, as the content offer keeps diversifying and terminals improve, pictures, videos and games will have an increasingly starring role.

The primary business model for access is revenue sharing: The earnings that companies obtain through the volume percentage of content download, plus the percentage previously negotiated with the operator.

As per the income originated in advertising, there is not yet a business model based on it although expectations are for signals to share income, because it would be less expensive for the user to access video streaming or mobile TV services if sponsors were liable for part of the costs.

The increase in mobile telephony penetration also leads to incorporating children into the market. Even though until last year content offer focused on a young audience, with products such as ringtones and wallpapers, now the new stars are 7-year-olds and older. They will become intensive consumers of new content for this segment, while the main attraction is cartoon videos.

In the case of Disney, the company presented mobile versions of High School Musical, Pirates of the Caribbean, Mickey and friends, Winnie the Pooh, and Power Rangers. Yet, not only are children the target of this experience, but also the family group. Such is the case of “Family Games” suggested by Discovery Kids where parents get daily advice through SMS to stimulate their children.

* From the user's point of view, it is clear that they would not sit to watch mobile TV or video streaming for hours, but just for a few of minutes.

Content

Map and music services to lead multimedia demand

The arrival of 3G technology opens a new horizon for terminal manufacturers in the multimedia business. 20% of Nokia's global sales correspond to this segment. Ericsson acquired Tandberg and goes for LSS to become stronger in the field

In the past four years, many mobile device manufacturing companies have started focusing on multimedia applications. Fernando Villasol, Nokia's Multimedia Computers Manager in Cono Sur, told Convergencialatina that "in 2003 it was decided to develop the multimedia area, and today the company generates applications in more than 80 languages." According to the executive, back then, several market analysts considered this area a non-profitable business. "But today, the multimedia sector collects 20% of our company's global total, and it represents a high percentage of our earnings," he explained.

Villasol pointed out that between 8% and 10% of sales is re-invested in multimedia product development, and that Nokia holds almost 50% of multimedia equipment international market, and has sold over 40 million of these devices worldwide. Regarding the Latin American market, he explained that it is having a significant take-off, which led to, during 2007, Nokia's decision to launch state-of-the-art equipment, such as the N95. From his point of view, "the arrival of 3G, which will become more powerful during 2008, will widen a new spectrum for users, who will have very high speed connections in their pockets all day long, and this presents us with the challenge to provide service to fill in that traffic."

"This year we have been able to position the company in Latin America with what we call "our convergence devices", and now our chance to move forward is to target other services, keeping the hardware market attended," he emphasized. Villasol said that, during 2008, map and localization services will strongly enter the region and the world, and that all Nokia's N series equipment will have GPS installed.

Before these perspectives, the company has announced TN Atlas acquisition, one of the world's major cartography suppliers for Internet. Also, they have signed an alliance with tourist guide publisher 'Lonely Planet', with Yahoo and another one with Yu Tube. As regards music, they have developed Nokia Music Store, a paid service that allows users to download music through mobile phones and via Internet.

"Each of these services responds to a different business model. In the case of music, we charge a percentage of the rights to download it and, in the case of localization, map services are free of charge but those voice led are charged a fee," he exemplified. Villasol guaranteed that this is a market where the biggest does not necessarily win, but the fastest and most innovating does.

He explained that the multimedia sector is starting to settle in Latin America "where network development is a bit behind the rest of the world due to technology availability and the cost variable." As for the business boosting vectors, Villasol said that the main engine "will be social change that is taking place due to Internet development. Nowadays, young people do not mind how they meet their friends -either if they do it personally or via Internet- ; people look for jobs in the web and shop on line. Their lifestyle has completely changed and they use online services more and more," he concluded.

Just as Nokia, Ericsson is interested in expanding further in its value chain and, to be more strongly positioned in the market, it has acquired Tandberg Television (digital transmission systems supplier), Mobeon (IP messenger component for fixed and mobile network company), Redback (communication network specialist), Entrisphere (provides access to fiber optic technology) and Drutt Corporation (platform solutions supplier for service supply), among others.

After Redback's acquisition, Carl-Henric Svanberg, Ericsson's President and CEO, said that "the IP sector development pace accelerates as operators move towards the convergence of all IP networks, where service quality requires more and more intelligent routers with bigger capacity." He highlighted applications such as VoIP, IPTV and video-on-demand, among the ones which require more capacity increase.

However, Per-Henrik Nielsen, multimedia market unit Vice-president in Latin America, warned that "despite the purchase of key companies, the multimedia era is a time of alliance-based business models" and, in this sense, they are working hard with Sony. Ericsson's experience concerning multimedia developments, which concentrates 8% of the company's net sales, is not too different from Nokia's. Nielsen said that in the past four years, the Sweden company has made very important investments in this sector development, and he sees "an excellent market for this type of solutions in Latin America due to its inhabitants' spontaneous nature."

He considers that multimedia services "do not need to be more complicated than sending SMS" and they offer many possibilities to make the user's life "more fun and easier". Besides, he believes that they should not be thought of as something exclusively pertaining 3G technology. However, he highlighted the importance of knowing the market well: "A multimedia person is not the same in Europe as in Asia or in Latin America. There should be especially developed products for each region," he pointed out. Nielsen agreed with Villasol in stating that the latest multimedia products will be everything related to music and localization services. Also, he said that one of the central discussions regarding this topic is who will pay for contents, and that broadband is a very important factor in the business development of applications. ■

* For manufacturers, the key is that multimedia services in new devices should not be more complicated than sending SMS.

Business of mobile search engines to boom in 2008

Although schemes of income allocation are still being evaluated, everybody bets on a service which promises to move millions of dollars around the world in just four years

We will have to wait until the second half of the year to find out the business model that will dominate the scenario of mobile search on Internet. Since it is a new service added to mobile phones, most convenient formulas for operators, manufacturers of handsets and search engines are still being studied. In so deep uncertainty, something appears to be clear: we are aiming at enabling the user to access with his mobile phone to the same browsing experience he has with the PC. Toward the future, some people dare to predict a scenario in which the provision of cellular telephony is free since it could be paid with the sale of advertising.

In spite of doubts, conclusions and predictions, profits are estimated to result from schemes similar to the existing ones. Thus, the operator will participate in the results obtained from search engines which, on the other hand, obtain profits from the sale of advertising, the sponsored links, the purchases made by Internet users from inquiries and the sale of positioning on the results of the searches.

Little by little, the strategy of the location of pages caused the delay of advertising messages in the form of banners, pop-ups and other proposals to allow for a more subtle procedure: being in the first positions of the list under a certain search term.

Beyond tactics to be employed, it is important to benefit as much as possible from a business, which is predicted as very profitable. According to The Kelsey Group, the marketing of search engines arrived at mobile phones and it will grow an average of 112% throughout the world, with profits which could reach the 1 billion in 2012. Additionally, eMarketer evaluated only the ads in mobile search engines and it predicted they will generate profits for 514 million by 2011

Operators' view

Within the new business environment characterized by the use of technology as well as Internet, to make business more profitable, there are no doubts about the influence that search engines exercise on the purchase decisions and increasingly, in many other decisions of daily life made by most of the people.

In this context, any person or company not appearing in an outstanding position on the search sites will have fewer chances to be able to compete in business. This is something

Leandro Musciano

also known by those who see how the use of mobile telephony grows exponentially around the world (there are approximately 3 billion users of mobile phones) and they do not want to be left outside the eyes of this type of consumer. Therefore, search engines, telephone operators and manufacturers analyze how they will allocate profits when mobile search engines become as successful as they are with the PC.

Alberto Arébalos, Communications and Public Affairs Director of Google for Latin America, explained to Convergencialatina that "although the business model to be followed is still unclear, with Android we want the user to have the same experience as with the PC and to decide which application to use, download and install". Android is an open platform for mobile devices resulting from an alliance of companies such as Google, T-Mobile, Intel,

* According to The Kelsey Group, the marketing of search engines arrived at mobile phones and it will grow an average of 112% throughout the world, with profits which could reach the € 1 billion in 2012.

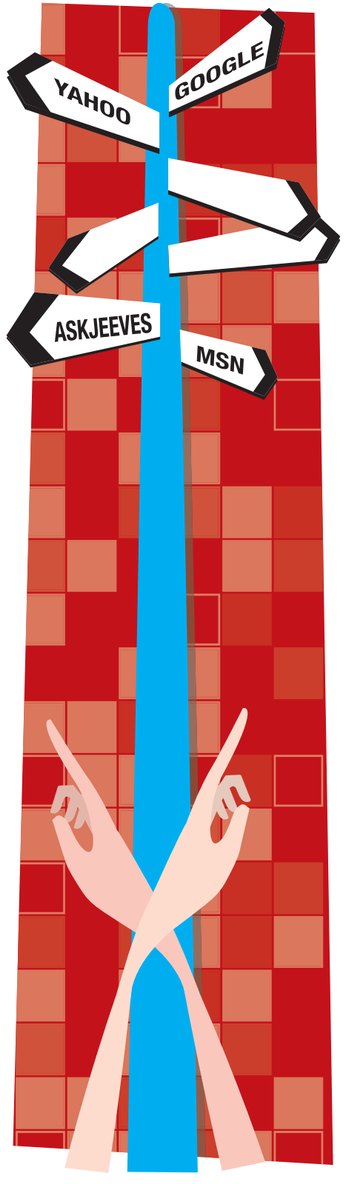
Qualcomm, Motorola, Telefónica, Telecom Italia and Broadcom, among others; which makes available to developers a tool under open code license with interfaces for keyboards and touch-screens.

Telefónica and Yahoo! on the other hand, announced by the end of 2007 that the search engine OneSearch of Yahoo! is specially designed for mobile handsets and its innovation is that results are displayed on the screen with no need to go through multiple links. "It is about a first step forward that it is being implemented", said Leandro Musciano, Value Creation Manager of Movistar Argentina.

América Móvil entered into an agreement with Yahoo! to include OneSearch in its phones. Gustavo Salcedo, New Services Manager of CTI Móvil, Argentine subsidiary, explained that "it is a first step and we keep on working on actions that result either beneficial or differential for customers such as, for instance, exclusiveness of products, easy access and pre-uploaded search engines".

From PC to mobile phone

Today, two types of search sites coexist, which can be accessed from a PC: pure search engine sites such as Google, Altavista and Ask Jeeves; and portals such as Yahoo!, AOL, MSN and Lycos. The latter, besides enabling the search for information, they offer



services such as chats, forums, news, free-access electronic email addresses, among other things. However, the struggle within mobiles seems to be focused on these three companies: Google, Yahoo! and MSN.

According to Nielsen Online, in September 2007 Google led the segment of fixed searches with 54% of market share. Meanwhile, Yahoo! reached the second place with a market share of 19.5 % and a growth of 9.3%. As to these consulting firm, "the search as a tool has been integrated definitely in the daily life of people", while the increase of this type of actions "has been seen together with a parallel increase of marketing income in search engines".

Matt Booth, Senior Vice-president of The Kelsey Group, pointed out that "with these levels of advertising investment, advertisers will keep on looking for innovating solutions, including the mobile to prove a clear investment return". On the other hand, according to John du Pre Gauntt, Senior Analyst of eMarketer, "in the next two or three years, the marketing will suffer disagreements between operators, portals, media and search engines since all of them want to lead this business.

With no speed and technological requirements, the possibility of having search engines on mobile phones is just a question of time and of how income making up this business is allocated.

Migration to Metro Ethernet poses new dilemmas to carriers

When it looked like a single protocol -Ethernet- could simplify networks, the dispute between MPLS and PBT in the addition ring imposes a technological election which is not clear to carriers yet

Global sales of equipment for Metro Ethernet will double between 2006 and 2010 until they reach $18.8 billion, according to Infonetics Research. And it is true that technological development, the possibility to unify Ethernet as unique protocol from LAN (Local Area Network) to WAN (Wide Area Network) and MAN (Metropolitan Area Network) fosters this trend. But unification is an answer to the telecommunication company's need of being able to quickly foresee all kinds of merging contents and, above all, to unify devices to improve its CAPEX with economies of scale, simplify operations and reduce OPEX.

For an effective implementation, Metro Ethernets will have to meet Internet connectivity demands; transparent services between LAN networks; virtual private networks (VPN) between bothe point-to-point and multipoint-to-multipoint LAN (L2VPN); extranets; VPN Frame Relay and ATM; connectivity with backup centers and storage area networks (SANs); metropolitan transport (backhaul) and voice over IP. And at that point, opinions differ.

Corporations

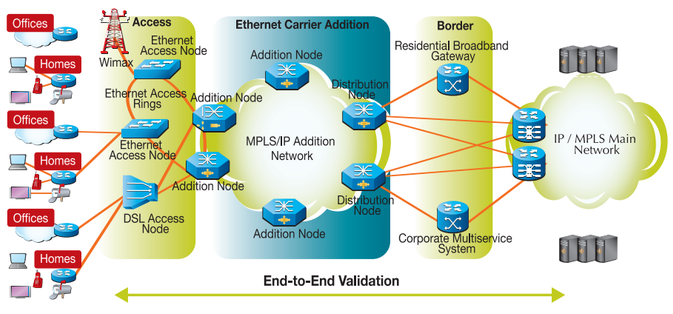
The first difficulty lies in the services rendered to the big companies segment, which should give in, as from Metro Ethernet implementation, to share the infrastructure with residential subscribers, an issue that is making a few feel not much at ease. Although it is true that private networks were not private any more, but shared, the difference lies in that now there will not be any distinction between private and public networks any longer, in any of their sections. Until their final extinction, deputed protocols, such as ATM and Frame Relay, will also be part of the public network, although there will be another protocol below them.

According to 2006 data for USA analyzed by Vertical Systems Group, out of $32 billion generated by business data services, only 5% belonged to Ethernet, with private lines providing 36%; the Frame Relay, 26%; the ATM, 8%; Internet access, 15%; and dedicated IP services, 10%. A whole world that, gradually, will have to migrate to Ethernet.

The three legs

The Metro Ethernet field can be better understood dividing the network into three parts: (see diagram): access, addition and core network (core).

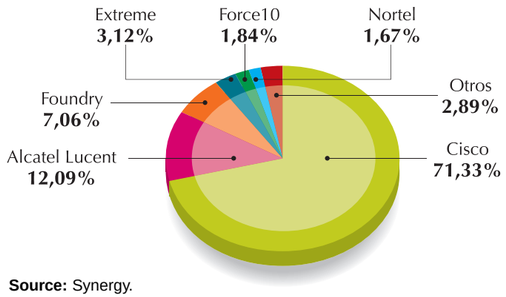
Telephone companies reached the first one as they needed to digitalize the last mile of copper and take it to the customer in order to improve Internet delivery speed for xDSL. Some niche operator directly placed an Ethernet switch in the customer's surroundings, to travel with the protocol straightaway over copper in the last mile. Also, progressively, WiMax towers are turning up as a competitive option or, in the case of incumbents, to enhance coverage. Finally, Fiber To The Home (FTTH) experiences with Gpon or Epon are beginning. All Ethernet and every access linked to a fiber optic ring that joins (adds) nods and gives the group redundancy. For cable networks, the ring links the CMTS (Cable Modem Termination System), which contributes to video's own operation capabilities with the possibility to use voice over IP (VoIP) and Internet, via coaxil cable below the DOCSIS (Data Over Cable Service Interface Specifications) standard, which CableLabs certify. But in all cases, the user gets an Ethernet port.



Cisco left Dslam, Gpon, Epon and Pon markets to those who, from Cisco's point of view, tend to get commoditized. However, it has small access switches and it acquired Navino, a WiMax supplier. Alcatel-Lucent holds end-to-end solutions. Nortel does not compete in the last mile, although it does not rule out entering it as soon as other fiber optic alternatives are generalized.

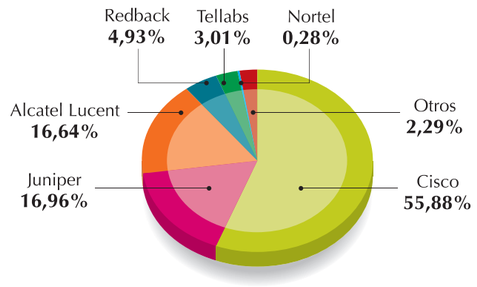
* The first difficulty lies in the services rendered to the big companies segment, which should give in, as from Metro Ethernet implementation, to share the infrastructure with residential subscribers.

Graphic 1: User devices - Q3 2007
Market Share



Source: Synergy.

Graphic 2: Income from border routers - Q3 2007
Market Share



Then, the vendors' battle arises from routers and switches and, to some extent, from the possibility to offer end-to-end solutions. But the biggest issue was arisen by Nortel, when they launched -for the addition layer, Metro Ethernet's pure and hard- a variable: PBT (Provider Backbone Transport), switching solution technology (ISO model layer 2) of a lower cost, what MPLS solves with layer 3 routing. So, vendors have to face the issue to decide whether PBT is an option or not.

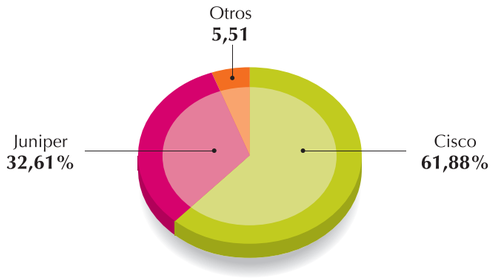
In the router segment, Cisco's leadership is undeniable. As per Synergy Research data pertaining the third quarter of 2007, 71% of income coming from addition nodes belong to the company, followed by Alcatel-Lucent, with 12% (Graphic 1), in a market with more than $350 million. However, Nortel thinks that the published figures fall short, and that it has a bigger presence after Tasman Networks acquisition for $95.5 million cash, which concluded in February, 2006.

In border services, Juniper has 17% presence in the market, a value similar to Alcatel-Lucent; but Cisco concentrates more than half of its total in a business of more than $700 million. Nortel discontinued their BRAS (Broadband Remote Access Server) at the beginning of this year.

Border islands are linked through MPLS IP technology to the network core.

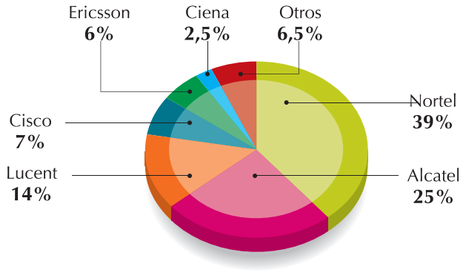
In core routers, the market is highly concentrated on two players: Cisco and Juniper. About WAN switches, multiprotocols (ATM, FR, IP), in 2006 the market distribution involves Nortel and Alcatel-Lucent _according to February, 2007 Dell Oro's report (Graphic 4). This is the space Nortel expects to get back through PBT, and which the detractors of the new initiative attack.

Graphic 3: Income from core routers - Q3 2007



Source: Synergy.

Graphic 4: WAN Multiservice Switches - 2006



Source: Dell Oro.

End-to-end

Alcatel-Lucent's strength comes hand in hand with their big product portfolio, a reality that tries to break down Nortel's PBT variable. They say it is too much to ask MPLS to adjust to the new functionality, and that it is more convenient to have an ad hoc standard. Criticism points out that PBT is not a standard but a kind of Ethernet proprietary, and that to carry deputed protocols is not effective. It only allows to set up end-to-end virtual private networks but no multipoint ones. Also, they believe, it does not allow for any other type of tunnel but Ethernet. Neither ATM, X25, FR, nor PPP.

Nortel prefers simple PBT IP switches instead of MPLS. The rest of the vendors are for IP and MPLS above, and argument that the successive steps that PBT requires to run, for example, ATM over Ethernet, is just like going back ten years and running ATM directly. To run deputed protocols, PBT should use PW (Pseudo Wire), a functionality that Nortel ensures is embedded in PBT itself.

Detractors also point out that it requires somebody providing the service from a centralized site, when MPLS can do it automatically. With the same criteria, they claim that all ATMs keep running on X.25 and that is enough for them, so there would be no reason to introduce changes. And so, for PBT a parallel network should be assembled, and then it would no longer be a multiservice network, like MPLS.

They also object that PBT could only provide point-to-point links, not multipoint links, but this is the type of broadcasting IPTV requires. Nortel claims the solution to this issue has already been provided for, and supports such claim by pointing out that the designated standard number is 802.1aq. They counterattack arguing that finding out a fault in MPLS is a complex task and that PBT has tools to carry out a quick diagnostic. And they add, as a sample of the relevance obtained, that the MPLS Forum 2008 version will be called MPLS & Carrier Ethernet Forum, to include PBT.

Migration

Through Ethernet, via software, the speed provided to the customer can be changed from 0 to 1GBps, and even 10 GBps over fiber. That's what carriers needed. The main players migrate for a superposition model (overlay). At the same time, they display points of service that act as nodes, and there starts fiber optic cabling. Preferably in ring form, due to costs (shorter length laying) and reliability, as redundancy is obtained.

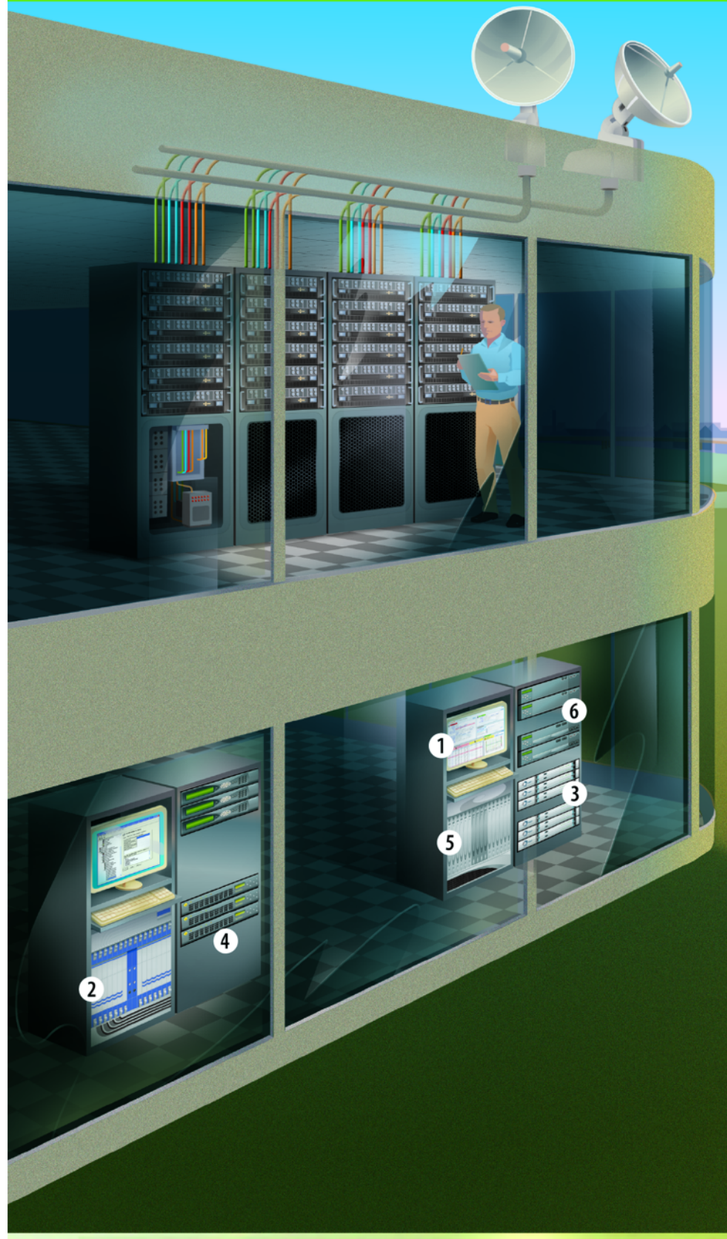
Just as FR and ATM did it over DDH, they reuse the same fiber for the rings. Where there is no previous cabling, they mount Ethernet directly over the fiber. Theory goes that in the places where Ethernet runs over SDH, this is eliminated to avoid cost duplication due to equipment maintenance, which is twice as much. The dilemma is whether they continue using MPLS in the addition ring or if they go for PBT. IDC published a lapidary document where it dismisses PBT. But anyway, Nortel made paradigmatic BT take them as a witness case.

DESDE LA CABECERA HASTA EL HOGAR, TVC SUMINISTRA AL MUNDO UNA INFRAESTRUCTURA COMPLETA DE TELECOMUNICACIONES

Por medio siglo **TVC** ha suministrado Productos y Soporte Técnico que han ayudado a construir infraestructura de comunicaciones en los mercados de Estados Unidos, Canadá, México, el Caribe, Centroamérica y Suramérica.

TVC cuenta con un fuerte respaldo y una excelente relación de trabajo con los fabricantes más importantes de la industria. Adicionalmente al conocimiento de las tecnologías y aplicaciones de nuestros productos, **TVC** ha comprobado que es un socio valorado tanto para la industria de las telecomunicaciones como la de banda ancha.

OFRECIENDO SOLUCIONES INTEGRALES, MULTI-FABRICANTES, Y SOLUCIONES IP-DIGITAL PARA LA CABECERA



1 intraway Corporation
Gestión, provisioning y monitoreo de elementos de red, incluyendo Cable Módems DOCSIS, E-MTAs PacketCable, dispositivos SIP, SoftSwitches, grandes redes de Hotspots WiFi y Set-Top Boxes digitales y analógicos de múltiples proveedores.

2 MOTOROLA
El BSR64000 de Motorola es un CMTS/EDGE Router Inteligente de alta densidad, completamente redundante, carrier class, soportando datos, voz y servicios multimedios.

3 EGT
Todos los procesadores de video de EGT son multi-funcionales, flexibles y escalables, haciendo de la tecnología EGT una solución de video digital ideal para migrar a digital, aplicaciones de video simulcast, VOD e IPTV, disponibles en todas partes hoy dia.

4 SeaChange
El Sistema VOD de Seachange combina el poderoso software Axiom Core para manejo de contenido, junto con los servers de video MediaCluster en una plataforma para servicios On-Demand. Seachange facilita un gran rango de oportunidades para ingreso con los servicios On-Demand, tales como peliculas y programas de Red, juegos y DVD , y anuncios de publicidad a grupos selectos.

5 Cedar Point COMMUNICATIONS
Simplificando La Red – El Sistema SAFARI C3 de Cedar Point Communications es un sistema que da poder a los operadores de Red y a los Departamentos de IT de cualquier tamaño para que puedan ofrecer servicios competitivos de multimedios y VoIP.

6 AllOt communications
Los dispositivos NetEnforcer de Allot inspeccionan, supervisan, administran y controlan el tráfico de red de forma exhaustiva en cada aplicación y para cada usuario. El sistema de administración centralizada NetXplorer de Allot proporciona una visión consolidada de todo el tráfico de la red y ofrece la inteligencia de red para empresas necesaria para optimizar el servicio.

TVC Caribbean & Latin America
2105 NW 102nd Avenue
Miami, FL, 33172, U.S.A
305.716.2160
www.tvclatinamerica.com

División México
Xola 613 Modulo 2 P.B.
Col. Del Valle C.P. 03100
México, DF
52-55-5639-2926

TVC Communications, L.L.C.
800 Airport Road
Annville, PA, 17033, U.S.A.
888.644.6075
www.tvcinc.com

Trends

Telepresence moves forward in corporate life

A diversity of developments have led several companies to launch products widely promoting verbal and visual communication for people, all this due to a greater capacity and speed in terms of data transport

Broadband development, through permanent increase of capacity and speed in terms of data transport, enables the creation of countless applications to the extent that some of them could be only imagined in the field of science fiction until just a few years ago.

A typical case is that of Telepresence. In a world where people have just began to take notice on a massive scale of the advantages -though primitive- of Webcam systems and videoconference continues to be developed in the corporate world, there is a new generation of systems representing a step forward in terms of verbal and visual communication for people, named as a whole, Telepresence. Such name, coined by Marvin Minsky (one of the fathers of computing and specialist in artificial intelligence), refers to a means capable of providing any person with a feeling of being present at a location other than her true location by means of a scene created by computers.

However, the term is so broad that it also gives rise to the creation of diverse systems basically aimed at creating such feeling of a lack of distance in communications. It ranges from an exceeding version of videoconferences designed to being widely applied in the corporate sector to other forms of developments in progress, which even NASA have proposed to use as a resource for remote planet exploration.

TelePresence

In late 2006, Cisco announced its technology solution in this field called TelePresence. Such technology solution comprises a number of innovations in video, audio and remote communication technologies based on Internet Protocol (IP).

By means of networking range and intelligence, Cisco TelePresence improves interaction quality among participants, compared to videoconference systems. A life-like sense of a meeting face-to-face with another person sitting at a virtual Telepresence table is thus created. Cisco TelePresence includes high-definition 1080p video, uniform side-to-side latency, and spatial broadband audio.

At first, this solution had been designed for remote communications among companies but they are already developing applications designed for specific industries, such as health, trade, banking, entertainment or the government. For such purposes, the only necessary requirement will be the availability of 10-megabit broadband, and approximately $ 300,000 which is the cost of marketed equipment.

For this solution launch, Cisco connected its company's headquarters in San José de California, United States, with other seven centers worldwide.

High Definition

Another company which has developed a system with similar characteristics has been Polycom, with the launching of its new high-definition telepresence solutions for remote working and mutual communication.

Telepresence solutions Polycom RealPresence Experience High Definition (RPX HD) include complete 8-16 feet HD cinematic views, high-definition sound Siren 22 kHz StereoSurround, EyeConnect technology, which places the camera at eye level for a more natural-like eye-to-eye contact. High definition of images is achieved thanks to the fact that RPX HD solutions have HDX 9000 video systems, based on Polycom standards, and consequently it is possible to obtain 720p HD resolution (up to 3.840 x 720 to 30fps).

Polycom's system is designed for virtually the same markets as for which Cisco has created TelePresence, and even their prices coincide, about $ 300,000 for the Polycom RPX HD 204 model, too.

However, other companies are currently conducting research and developing other systems which are more advanced than those discussed above and which will be surely part of a new generation in terms of telepresence. An example is the case of BT laboratories in Martlesham, England, where they are developing the so-called 3D “immersive environment”, called Vision Dome, by means of which they "bombard" a person's whole visual field with virtual images while adding surrounding sound. The person, surrounded by all those effects, has the feeling of being located somewhere else without the need to use glasses or any other special equipment.

In turn, at the Human Interaction Centre, they are working with a new videoconference technique, by means of which in a given room surrounded by screens and a larger TV screen with a camera on it, a person is situated in front of lenses capturing the image. At another similar room located several miles away, a person who is located in front of another monitor may speak to the first person, as if both of them were in the same room.

Doctor Graham Walker, Director of these projects, explained that their research is focused on “immersive telepresence”, that is, where distance has no influence and people are in contact with each other as if they were actually together. In this respect, we may consider the great progress accomplished by the film industry, a means of primitive telepresence, in the last few years. The big screen format, such as Imax, provides a feeling of immersion, so that people sometimes believe that the seat is moving and not the camera. Another significant field is that of the special effects industry. By means of those systems, it is possible to enhance the mixture of images taken by the camera with other images created by the computer so that they may appear to have been shot at the same time. ■

Trends

Lax paradigm of Next Generation Networking (NGN)

NGN would seem to require necessarily high speed broadband access, though the versions about its execution vary

In an article of early December 2007, the BBC wondered why BT was supposed to migrate its extensive ADSL network, which provides average broadband of 4Mbps to 50% of British homes, to fiber. Process that would require an investment of 15 billion pounds (more than twice in dollars), an adventure which it would not be willing to risk without Government's aid or business incentives. The reason concluded by those in favor of the deployment was the relative delay of the United Kingdom in NGN. The speculation encompasses two questions. As proposed by the BBC, NGN would seem to require necessarily high speed broadband accesses, but, in fact, the concepts defining them seem to be laxer.

NGN Features

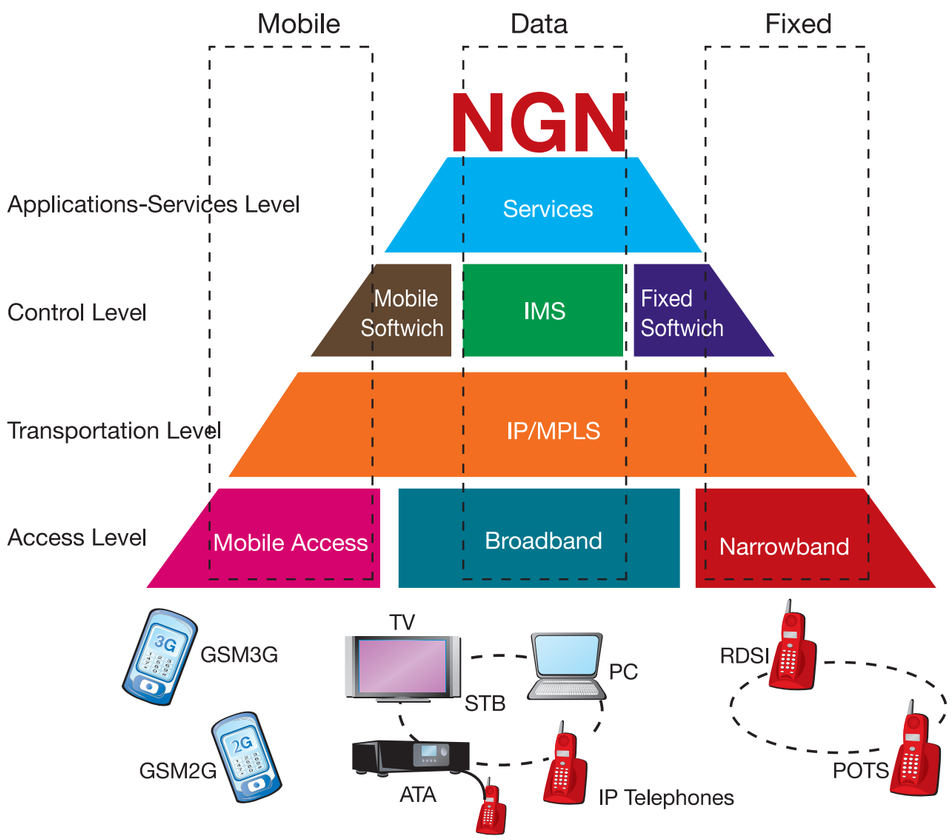
- Package-based transference.
- Separation of functions of transportation and service control.
- Development of services through open interfaces.
- Support of a wide range of services and applications, in both real and unreal time, streaming and multimedia.
- Broadband capacity with end-to-end QoS.
- Integrated work with precedent networks (PSTN/ISDN and others) through open interfaces.
- Global mobility of users as well as devices through different access technologies with no service interruption.
- Access of users to services offered by different providers.
- Variety of the identification schemes of users and devices.
- Work with a same service profile for one user throughout the network.
- Convergence of both fixed and mobile services.
- Independence of service functions from technologies of underlying transportation.
- Support for multiple last-mile technologies.
- Compliance with all regulating requirements (notices of emergency, security, privacy, legal intervention of contents and others).

Framework

In 2004 the International Telecommunication Union, ITU, defined NGN through the Y.2001 Recommendation, as a package-based network capable of offering telecommunications services, using multiple technologies of broadband, providing transport with (QoS) service quality and managing functions related to services and contents independent from the underlying transportation technologies. This network would enable users to choose both providers and services. Also, it supports the so-called generalized mobility which provides a ubiquitous and consistent range of services for users.

But the visions about its execution vary. As stated, NGN is a future goal and each development made in a portion of the network migrated in search for the paradigm is usually classified as NGN. "Everything that is not TDM seems to be NGN, but the only common issue is the IP MPLS networks", Cisco said. "The most tangible thing service and technology providers accept is that is consists of an IP package network with features different from Internet", they added. Nortel agree on this, except for the matters related to MPLS (see "Migration to Metro Ethernet poses new dilemmas to carriers").

On the other hand, Alcatel-Lucent put emphasis on the services. "NGN means evolution to IP networks, but also the transformation of services. Convergent services of greater added value", they asserted.



Controversies

A possible NGN scheme (see graphic) shows that the original intention of the concept is to articulate fixed, mobile and data services as a single platform instead of three independent platforms as it has been occurring till now. As we can observe, at the access level, blocks of fixed mobiles and broadband are different from each other. But at the transportation level, everything is IP/MPLS, and the service layer also appears alone. Moreover, at the control level, the layer is shared by the boxes of both softswitches, fixed and mobile with a third party, and Internet Multimedia Subsystem (IMS); an agreed architecture by main telecommunications market players to replace previous set of standards ruling the game until the interruption of VoIP.

In Alcatel-Lucent, they consider that IMS is a set of orders in architecture that was defined as NGN. On one hand, agnostic network convergence in relation to access (cable, ADSL, mobile, WiMax). On the other hand, transformed services. In the middle, an architecture that facilitates widely the provision of new services.

The standardization proposed would enable to imagine the concurrence of multiple providers of NGN portions. But this is not quite like this. Some manufacturers of NGN technologies suspect that although standardization of network on which the provision of future services enables its deployment, hides due to its complexity, a market control function that would enable main operators and providers of equipment to be favorably positioned; this would take the industry back to the times of traditional telephony led by a few providers of equipment and services. "They should provide services and

applications", large vendors state regarding the destination of the smaller ones.

Also, the horizontal separation of transportation and the vertical division of control serves as an articulation, which will oblige users desiring to access certain services and applications, to contract the carrier that has subscribed the pertinent commercial agreements with contents creator. "It is a commercial issue", providers of large telephony companies asserted.

With no IPTV

For other reasons, there are also differences among vendors. To Cisco, IMS enables to provide convergent services of voice and mobile data with fixed but it is not a solution for all businesses that may be developed. "There is no IPTV architecture developed on IMS", they shot. And, as a coincidence with the appreciation of non-traditional manufacturers, they think that IMS is rather an evolution of the traditional network to the new services modality. After saying this pejoratively, there is contribution to raise the hypothesis claiming the return to predominance of product manufacturers for original carriers.

At Cisco, they also said that, unlike what happens with PaquetCable in cable industry where Cable Labs certifies interoperability there is no entity in IMS that operates accordingly. Thus, it is up to vendors' initiative to gather bilateral evidence, and small vendors are at a disadvantage. At Alcatel, they disagreed; they asserted that when manufacturers comply with the standards of each block defined by IMS, interoperability is guaranteed.

At Nortel, they acknowledge there is a narrow adjustment they are supposed to solve if big carriers want to interoperate. "The customer himself is who makes the different vendors guarantee the coexistence. Otherwise, we lose business, they asserted".

At Alcatel-Lucen they admitted that IPTV is not defined, although they point out that they are working hard to incorporate it to the definitions, and that providers should make big efforts to align themselves with IMS when this happens. Nortel does not have specific cases to show. But they assured that the company already has a solution of this type.

Control, quality and rates

In addition to all this, users' profiles should be saved somewhere to guarantee the service quality contracted and to set rates appropriately.

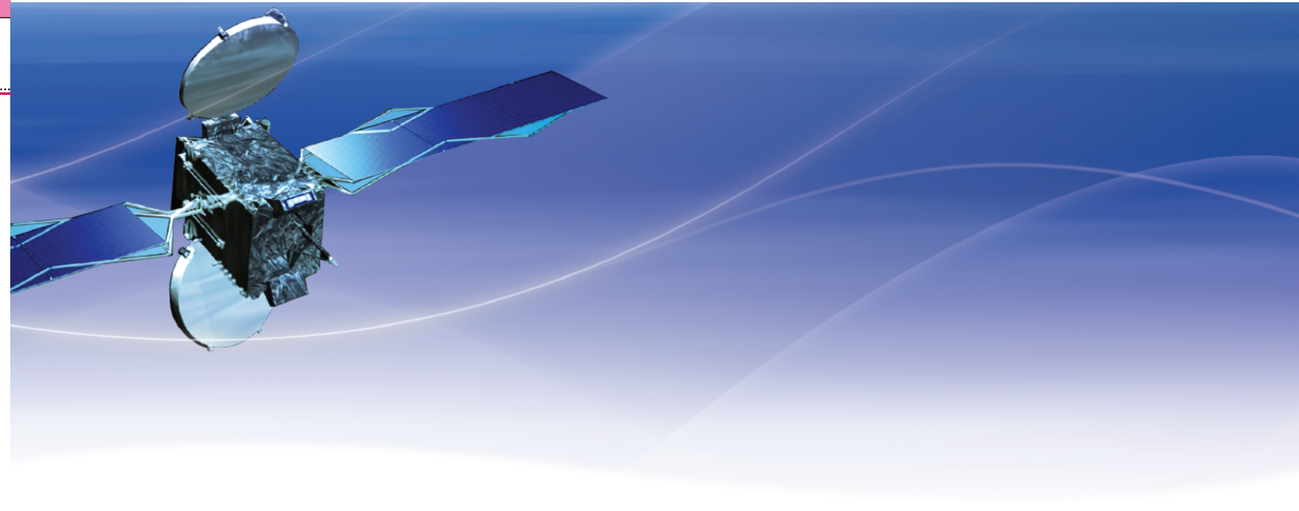
Cisco calls this admittance control and they specify that it was recently incorporated to the IMS 5 version. They say that this is a key factor since they picture that with voice over IP, without such control from a home LAN network it would be possible to make as many calls as required, exceeding the agreement the subscriber entered into with the operator.

Alcatel-Lucent refers to it as management of users' services and they specify that it should provide granularity to the information for the appropriate rates. They estimate that the local carrier will have the network control to be agreed with contents provider and will supervise its illegal distribution.

The core will be the sole user's database, located at the control level. This database will be in charge of identifying the user who wants a service. At this level there appear new doubts that only time and the coming development of business models will be able to clear up.

Contents provider will have to arrange with the carrier to use the database of users and distributors. This confirms the hypothesis that not everybody may access to these negotiations. If you want service quality, you should do it. Otherwise, you may spread your services just as now on the World Wide Web.

But the most suggestive question is, why should local carrier negotiate services? Technically speaking, isn't it enough to guarantee the quality of network path along which the information will travel? The answers are not to be innocent, because in one case, telephone companies will become communication means, and in the other, simple connectivity guarantors. ■



Digital Home: Interconnecting devices and lowering costs is still pending

This year, devices with DNLA interconnection protocol will be launched into the market. The arrival of IPTV and the increase of broadband penetration level in the region will be crucial in digital home development

Digital home development is perhaps the most intimate convergence phase taking place in telecommunications, and which actually shows how technologies have entered people's lives. But, how close are dwellings, as we know them today, to becoming totally digital homes? Is that a fact yet? Or just fantasy?

According to Rubens César Lima Bastos, Telefónica de Brasil's Regional Access Network Manager, nowadays, the development of digital home standards is highly advanced, and there are many devices that will allow their interconnection, step by step, to become real. However, he said, there are two barriers for the development of this kind of projects in the region: "On the one hand, the need for the operator to interconnect devices to one another, and, on the other, the device cost rate."

The executive explained that "What is still missing is the last device integration phase. Pieces are starting to work separately, and the operator's job is to put them together. Today, there is technological neutrality, but we need to unify the various standards for the digital home to be manageable," he said.

He indicated that "In this industry, the Digital Living Network Alliance (DLNA) is increasingly often applied", an alliance of companies which work towards the design of a common device interconnect protocol, and that in Europe the digital home project is close to consolidating, but he warned that in Latin America there's still "about a year and a half to go before we are able to achieve such level of development."

As footsteps in the way which has already started, several launches that have been made at the Consumer Electronics Show (CES) 2008 can be highlighted; the Show was carried out in January in USA. Among them, Samsung's Home Digital Media Adapter, Neflix and LG's set-top-box, and Vudu's on demand set-top-box video, and Sling Media's new Slingbox model.

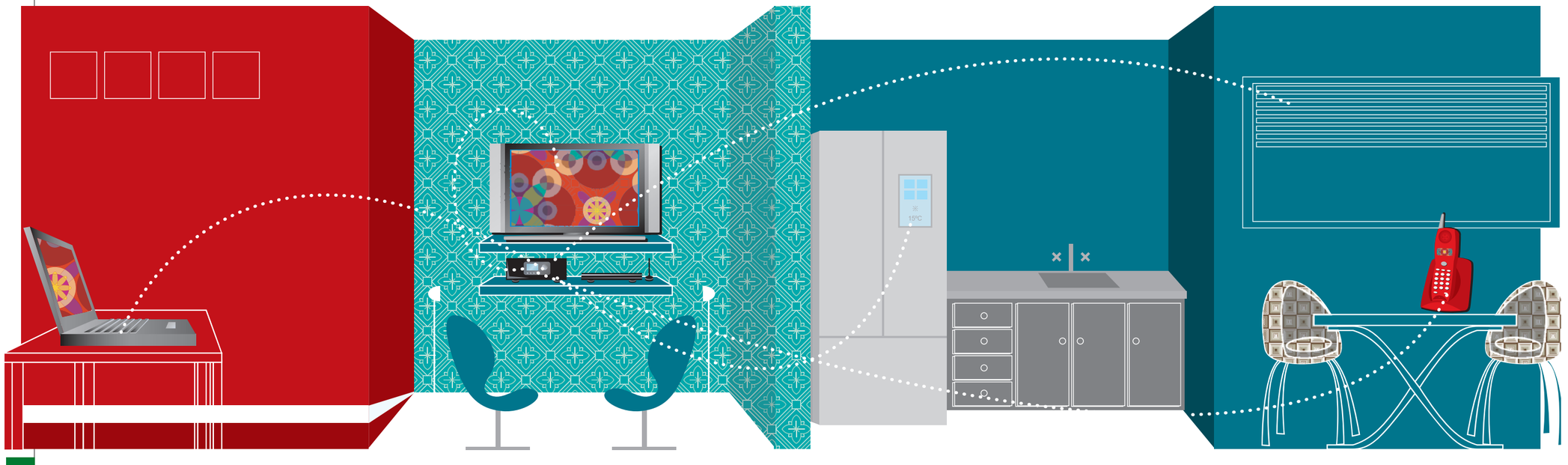
Lima Bastos ensured that the economic factor is a big obstacle in the way, due to the devices' high price. "For instance, a set-top-box, which would be the center of a digital home, costs between $300 and $400, and that makes it not much affordable to us," he said. The Brazilian executive believes that IPTV will be the front door to digital homes and that, although the first lock that stops from opening the door completely -the device interconnection issue- will disappear within eighteen months, the second lock -the economic issue- mainly depends on the global scale, which will be the one helping keep costs down.

Eduardo Griffa, Southern Cone Ericsson's Marketing Director, agreed with Bastos when he pointed out that "the future digital home is a home where all the devices and home appliances will be able to talk to one another and, at the same time, they will be interconnected with the rest of the globe through intelligent public networks." In this context, he said that Ericsson is part of DNLA, and it is working in the implementation of the IP Multimedia Subsystem (IMS) standard.

Nevertheless, for Ericsson, the starting point of the digital home is the device that connects the network to the house. "That's the crucial element, and there will be many vendors who will want to own this rung. There is no doubt that Microsoft wants to introduce its media server as the "master of the house" device to which the rest of devices will interconnect, but there are others. For instance, there is the play station, which connects to Internet and is able to play that role," said Griffa. Also, he predicted that "little by little, home appliances and devices will start interconnecting" and he explained that how they do it will not be the decisive factor, but the fact that they will actually interconnect.

In terms of time, he said that DNLA devices from leading companies will be launched into the market this year, and that broadband plays a very important role in digital home development, but he emphasized that "When we talk about an intelligent flexible network and broadband, we know that Latin America does not have the same penetration rate as this service has in Europe so the wireless alternative is quite important in this region."

* The entertainment-based digital home is more feasible for the Latin American market than the domotics-related one.



Focusing on Entertainment

Another company that works on digital home projects is Intel, but from another perspective. Marcelo Bertolami, Marketing Manager in Argentina, explained to Convergencialatina that "what we understand by digital home is not related to home automation and domotics, but with home digital entertainment."

As for the hardware, Bertolami thinks that it is essentially a PC with a good design and a thin shape, and low energy consumption. In this regard, the executive said that "As it has to be in the sitting-room, it should be small, have a high capacity memory, a TV card where to connect the wire, a high capacity hard disk drive to store all digital information desired by the user, Internet connection and a good video card," he described. Also, he stated that usage experience indicates that the network set-up should be easy.

As regards the estimated cost of this kind of equipment, he anticipated it should be similar to that of a high range PC, about $2,000 for consumers. For this reason, nowadays, this kind of PCs are only sold to 10% of Latin America's population. Bertolami believes that, apart from the price, for the digital home to become of more massive use, it is crucial to work in the development of an operative system as simple as possible to ensure a more "intuitive" use experience. "I see it evolving into the touch screen rather than any other kind of remote control," he summarized.

Lastly, Bertolami ensured that the entertainment-based digital home is more feasible for the Latin American market than the domotics-related one. "I think there will be a revolution, not connected with massive dissemination of the PC as digital home, but rather on what the laptop is and the usage experience in bigger screens with high sound quality. I believe that there soon will be digital entertainment solutions at home related with mobile equipment with easy connection to plasma and a more touch screen user interface in laptops," he anticipated for the region.

Domotics

The other face of the digital home is domotics, a little-exploited area in Latin America as entertainment but which can foresee a promising future. From the domotics or home automation point of view, Marco Muñoz, Syscon's (a Mexican company specialized in this kind of services for the corporate industry and homes in the city of Tampico) General Director, stated that "more and more people are hiring this kind of systems for their homes." In Muñoz's opinion, generally, the customer wants firstly an automatic system for home illumination -either to save energy or for decoration purposes-, audio systems or a camera circuit and later on "they will dare go beyond in their home automation." For instance, in the area where Syscon is located, as it is a cyclone zone, the automated anticyclone shutters industry is widely developed.

He clearly stated, however, that those who buy this type of systems are mainly high-income young people, as the price of the controllers used in homes, which are those of Control 4 lines, a USA brand, cost $1,000 plus in Mexico. "And some are even more expensive. For example, those by Creston and Elan are about $5,000," he pointed out. Most of these controllers operate with the Ethernet wireless 802.11 standard in its G and B versions, or with the well-known 'zigbee' (802.5), which "nowadays many manufacturers are implementing several lighting factories not to be left behind," the businessman informed.

One of the marketing companies' requirements concerning these devices is to be user-friendly. "The controllers we use, for example, operate with Linux as proprietary software, and its interface operations, through Windows. This allows the customer to set the controllers according to their needs without causing any damage to the controller operation," he explained.

In the last two last years' experience in home domotics, Muñoz assured that the sales percentage for the field has had a consistent growth and today it represents 30% of the company's total sales. Control 4, who works exclusively in home automation, has sold about $35 million worldwide in the last year.

SER CREIBLES Y CONFIABLES
ES LO QUE NOS HACE DIFERENTES

Información estratégica sobre el negocio de las telecomunicaciones en América Latina

Medios On line

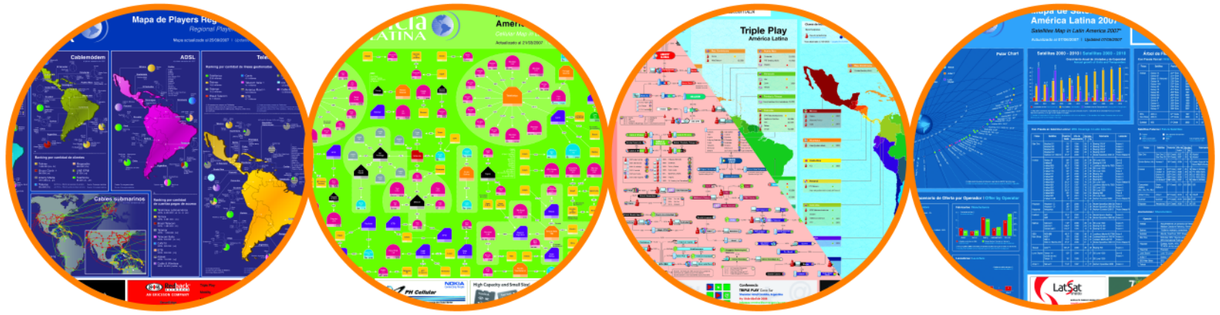
web site: www.convergencialatina.com
Newsletters: A Diario Latino - Latsat

Publicaciones

Mapas

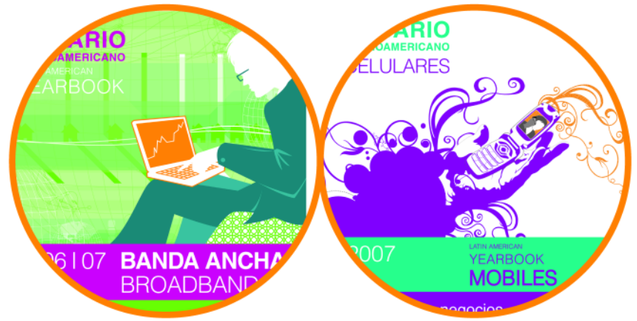
Mapa de la Convergencia Latinoamericana

Mapa de Players Regionales | Mapa de Celulares | Despliegue Triple Play / IPTV | Mapa de Satélites



Anuarios

Anuario Banda Ancha | Anuario Celulares



CONVERGENCIA Research
INVESTIGACION REGIONAL

Convergencia LATINA
COBERTURA REGIONAL

Venezuela 637 - C 1095 AAM - Buenos Aires, Argentina - Tel (54 11) 4342 3740
info@convergencialatina.com - publicidad@convergencialatina.com

Future

Digital cities promoted to achieve universal access to ICTs

* With the aim of improving quality of life, the digitalization of communities is intended to contribute to narrow the digital gap through the promotion of electronic government as the highest goal to be accomplished.

The development of digital cities entails coordination between governments, companies and the civil society. Ecuador, Colombia and Mexico have implemented initiatives of this kind aimed at narrowing the digital gap

¿What is needed to turn an "ordinary" city into a "Digital" city? Andrés Montoya, Digital City Manager at EPM, a government entity engaged in the transformation of Medellín (Colombia) into a digital city, stated that "it is essential to have a digitalization policy in line with the community development plan, and there must be also coordination between the municipal government, private companies and civil society". The same idea was expressed by Mr. Santiago López Guillén, General Manager of ETAPA, when mentioning the case of the city of Cuenca (Ecuador), "a project dated back to 2004 and involving both the private and public sector, with resources from companies and from the municipality, which contributed its infrastructure".

With the aim of improving quality of life, the digitalization of communities is intended to contribute to narrow the digital gap through the promotion of electronic government as the highest goal to be accomplished, based on the certainty that its implementation will result in greater citizenship involvement.

In order to promote Digital Cities deployment, Motorola developed the broadband solution "Muni WiFi" for the government, which is aimed at serving public safety, public services and public access areas. Regional Channel Manager of Motorola MOTO Wi4 for Latin America, Mr. Ramón Sierra, stated that "the implementation implies levels of difficulty, so governments usually begin from the public safety stage, with the installation of surveillance cameras, for instance. Then, they continue with public access (involving sanitation matters, sewage systems and sending of information in real time, etc.), which contributes to reduce the government's operating costs; and the most important stage is the service stage, through which it is possible to make online payments, review statements of account and other applications, such as teleducation".

For the purposes of serving those three areas, Motorola created "MotoWi4", a set of technologies including: "Canopy" (for non-licensed, fixed point-to-point and point-to-multipoint bands); "Motomesh" (with the installation of radio bases communicating with each other in a mesh network); WiMax (to be used in licensed bands) and Wirelessland (a indoor mesh for the corporate world). As regards the technological options which are more suitable to governmental needs, Mr. Sierra argued that "despite the fact that WiMax is a promising technology, it will not be a panacea for governments, since they do not have access to 2.5 GHz and 3.5 GHz bands. Then, it will be necessary to find alternative technologies such as Canopy and Motomesh, which may be used for public safety in 4.9 GHz bands".

In Mexico, the manufacturer has implemented digitalization initiatives in different communities such as Oaxaca, San Pedro Jicayan and Morelia. But the action with the greatest scope was Guadalajara en red (Guadalajara network), developed together with Pyxcom in October 2006. By reaching an 11 km2 coverage, a network with different sub networks was created in said city, and different levels of priority regarding traffic were given to them (the most important ones were government and SOS networks). Such Motorola officer said, "By mid-2008, we will begin to take action in order to achieve public access in Veracruz, where we expect to cover from 25 to 30 km2, with an initial investment amounting to US$ 1.5 million".

Medellín: First digital city in Colombia

As a consequence of an initiative promoted by the Mayor jointly with government agencies, Medellín became a digital city with the aid of EPM in March 2007. As explained by Mr. Andrés Montoya, Digital City Manager of the company, based on an initial US$ 8 million investment, three work areas have been outlined in connection with the project: contents, connectivity and appropriation of technology.

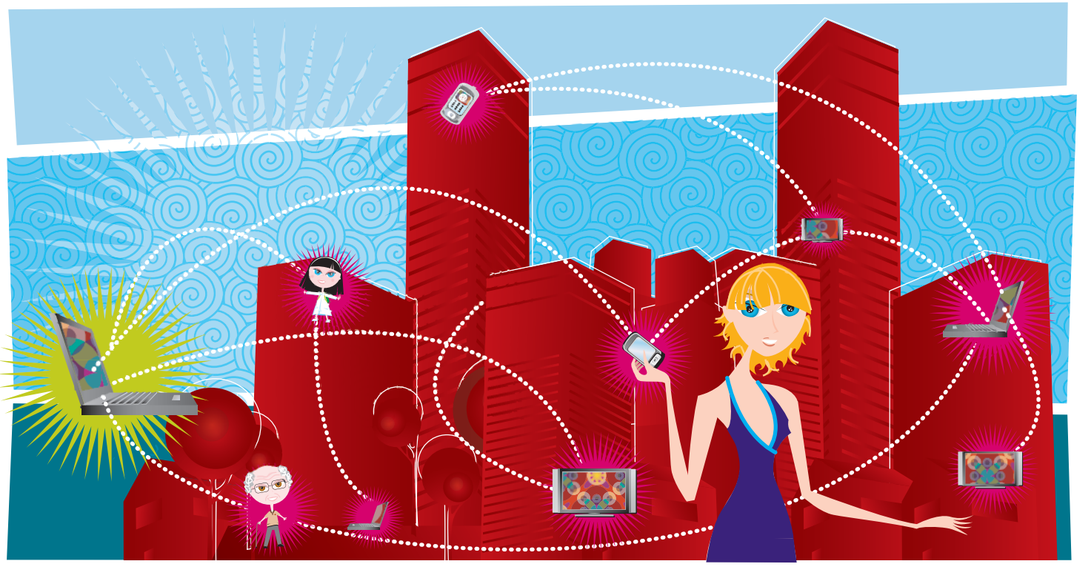
Mr. Montoya held that "the first step is related to the creation of websites for schools, enterprises and libraries following Web 2.0 philosophy". As far as the Connectivity area is concerned, through the initiative "Open Classrooms", they are attempting to provide schools and the community at large with computers, while promoting access to Internet for free in parks and libraries. "In terms of coverage, this program has resulted in the benefit of 3,000 teachers and 1,000 entrepreneurs, and broadband Internet was even provided at 20 telecenters, 20 libraries and 60 schools, out of 430 in the aggregate. EPM's Digital City Manager said "we expect to cover 80 schools more in 2008."

The Athens of Ecuador

Santiago López Guillén, ETAPA's General Manager mentioned that Cuenca _a city with 4,000 inhabitants and a 6% Internet penetration_ has been declared a World Heritage site by the United Nations (UN), and as a consequence of its high cultural level, it is considered "the Athens of Ecuador". These features have brought Cuenca substantial investment to become a digital city.

Mr. López Guillén explained that "US$ 2 million were granted initially for the recovery of the copper network, and then other US$ 10.8 million were required for deployment of the laying of a new generation network in metropolitan and rural areas to provide Internet access for free. Moreover, US$ 3 million were allocated to the mounting of a CDMA network to provide telephony and Internet services to the rural sector in 16 out of the 21 districts (we reached the other five with the copper network and the optical fiber metropolitan network). Moreover, he mentioned that the Proyecto de ventanilla única (Single Window Project) has been operating since April 2007 based on a loan granted by the Inter-American Development Bank (IDB). Through that Project, any proceedings may be carried online both for public and private services.

A georeferenced information base is expected to be installed by early 2008 in each district for education, health, sanitation, tourism, telecommunications and business services, among others, and US$ 16 million were invested for such purposes. By then, a new data center will be created with a US$ 5 million budget in order to increase the availability of education contents.



2008 will be the year for commercial launch of WiMax

Motorola made a substantial investment in technology with the purpose of becoming a leader. Today, it has 17 global commercial contracts in 15 countries. Latin America is backward in certain aspects

During the 2007 edition of the 3GSM World Congress, the CEO of Vodafone, Arun Sarín, referred to WiMax as an “elephant in the room” and encouraged providers to speed up LTE developments. One year later, WiMax providers were distinguished guests at the forum of Mobile World Congress (MWC), which took place last February in Barcelona, Spain. This year, Sarín moderated his speech as regards WiMax, and in his conference he stated, “we do not want standards conflicts. This has been unproductive for the industry in the past and we wish to promote the inclusion or fusion of WiMax in LTE”.

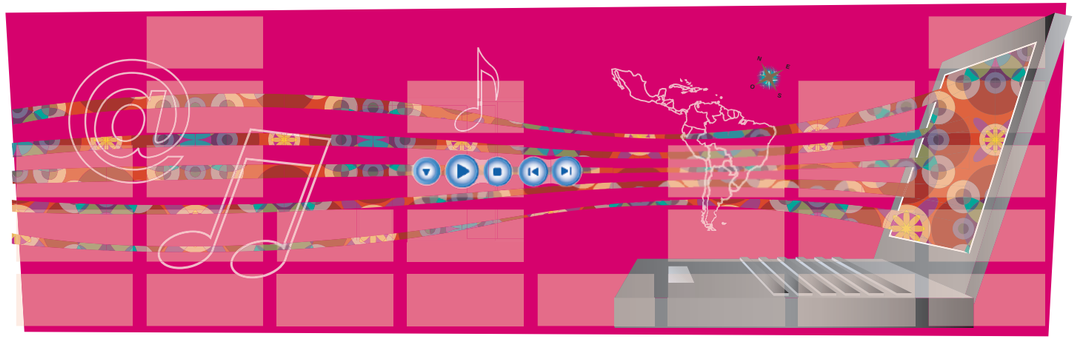
The moderation of the speech is reasonable especially considering that LTE is backward as regards WiMax and that main providers showed portfolios at MWC Barcelona aiming at both technologies. Motorola, Alcatel-Lucent, and Nokia Siemens Networks (NSN), to name a few, put the emphasis on both evolutions, while Ericsson commits itself to LTE.

Convergencialatina participated in the analysts' conference organized by Motorola, which was attended by Fred Wright, Senior Vice President of Cellular Networks & WiMax and Darren McQueen, Vice President of Motorola's LTE & IMS Networks, with the purpose of learning about the viewpoints of the company as regards both technologies.

In this meeting it was pointed out that Motorola made a substantial investment in WiMax and, according to Fred Wright, “if it grows as predicted”, they have a “strong opportunity to become leaders in that technology”. The executive explained that three years ago, when the company was evaluating its future, it considered WiMax as an opportunity to develop mobile Internet. At the beginning of 2008, Motorola has 17 WiMax commercial contracts in 15 countries and 60 “engagements” (including trials, already finished trials, or discussions of commercial proposals). In 2007, 3 thousand radio bases and 3 thousand CPEs were dispatched. In January 2008, the number of pieces of equipment distributed exceeded the amount registered in the same period the previous year.

The deployment

Motorola assures that WiMax is a reality and that if 2007 was the year of the technology's start-up, 2008 will be the year for its deployments. Fred Wright acknowledged that “Motorola is not alone; every competitor will make the most of opportunities”. During the conference, the person responsible for WiMax in the company said that the provider ecosystem developed around the technology represents an advantage for operators, since the existence of more than one provider in every link of the network, especially in chips, keeps costs controlled due to competition. Executives agreed that WiMax puts a lot of pressure on the development of LTE.



Both technologies, as it was explained, are similar and can share part of the dedicated resources. Fred Wright, who is responsible for WiMax, explained that “75% of hardware components can be reused and Motorola will have an advantage in investigation and development costs because when WiMax goes through its second generation, LTE will only be in its first”.

Some analysts asked if in view of the acceleration in the evolution of LTE, WiMax will be out of competition. In this sense, Wright said: “If I could see in my crystal ball, I would say that by the year 2015 WiMax will explode because it is two years ahead of LTE. But LTE will probably diminish the advantage, and in 2020 it could have a bigger market share, considering that the majority of incumbents have GSM cellular networks and the more natural road for these would seem to be the evolution towards LTE”.

Convergence

Another analysis that arises is if WiMax and LTE could converge in only one standard. To this respect, those responsible for the two business units agreed that said confluence would be interesting. However, WiMax is too far ahead to even try a combination. Fred Wright said that “the WiMax standard is what it is but in the future there will be new versions that will suffer some changes and there will be a rapprochement between them”. On the other hand, they made it clear that since LTE is going through its initial stage, there could be, as they evolve, indicators of a convergence with WiMax, but it is not possible to determine if it will be a full convergence.

When analysts asked about what operators should do to decide, Fred Wright and Darren McQueen agreed that operators that have "legacy" solutions will migrate towards the most natural solution and LTE is strongly related to 3GPP. Meanwhile, current WiMax developments are generally “greenfield” operations or alternatives to expand broadband coverage in markets where the service has low penetration.

Darren McQueen explained that both fixed and mobile customers wish to provide broadband. The cost of CPE is usually an item that analysts point out as a barrier for the explosion of WiMax. In this sense, Wright said as an example that in “2008 Motorola's portfolio will cost half of what it used to cost in 2007. This is what happens with all technologies when they go through their initial stage. And contracts with operators, depending on the conditions regarding volume and time, consider price reductions of CPEs”.

In the region

According to Motorola's viewpoint, any delay in the regional expansion of WiMax is explained by the fact that operators are testing the mobile version. Many of them do not want to invest in the fixed version because there are many differences between them to the point that not even the same radio base stations work, because modulation forms are different and require different chips as well.

Consequently, operators consider it is not worth investing in fixed WiMax because in the future they would need to change infrastructure to make the transition to the mobile version. ■

* “If I could see in my crystal ball, I would say that by the year 2015 WiMax will explode because it is two years ahead of LTE. But LTE will probably diminish the advantage and in 2020 it could have a bigger market share”.

Fred Wright

Darren McQueen

The debate of how to regulate convergence still continues

Consensus facing the need of a comprehensive review to the regulatory framework has the challenge to tackle the volatility of legal frontiers which raises the integration of networks, services and contents issue

The convergence between telecommunications and radio broadcasting is still raising regulatory dilemmas in the region where the idea of a comprehensive review to the legal framework is increasingly growing. The problems that the provisional regulations have had to provide for a legal framework to Triple Play and the transition of traditional networks and services to New Generation Networks (NGN), and VoIP services, strengthen the criterion based on a new scenario requiring new legislation. The main challenge consists of tackling the volatility of legal frontiers that convergence poses.

Regulation or Competition?

Technology updated the debate in terms of the limits a regulatory framework should have, legally characterized as ex ante, against the collapse of native monopolies, and the technological promise of higher competition, which will require heavier legal rules in terms of competition (ex post). The first case comprises the safeguards, framework regulations aiming at encouraging competition when it appears difficult to be sustained. The second case refers to guidelines aiming at the provision of remedies for anti-competition behaviors, except for the ex ante interventions of the jurisdictional authority in case of operations such as mergers or acquisitions.

However, competition regulations in the telecommunications field should necessarily be hybrid. That is, an interaction between competition safeguards and rights. Even though, this type of scenario has those ex ante safeguards with some advantages for competitors due to the assurance such safeguards provide to them.

On the other hand, they cause a rise in implementation costs for the regulatory authority and compliance costs for the primary operator.

Telecommunications, media and contents

In the region, we start to see some regulatory trends for VoIP services, including but not limited to access to telephone numbers, universal service included in funds, access to emergency services or blockage of services by means of filters. The absence of regulation is such that it is leading companies to strengthen their investments in NGN and move their services into IP platforms, since the current regulation considers them generally as value-added services. This situation will be reverted back when operators begin to ask for measures such as direct assignment of numbers and participation in number portability.

A more significant challenge is establishing how video and audio signals supported by telecommunications networks are to be treated, since these are contents which have traditionally fallen within the jurisdiction of specific authorities other than the authorities of the sector. This is what happens in Colombia where television is regulated by the National Television Committee (Comisión Nacional de Televisión, CNTV) so that in order to propose changes in the CNTV performance and scope a constitutional amendment is required. Rosario Guerra, Secretary of Communications of Colombia, explained to Convergencialatina that "the difficulties that have arisen, for instance, regarding CNTV are caused by the absence of legal regulation. The government has attempted to design clear rules so that investors know how to proceed. That is why a Technical Committee was created with the CNTV to outline its competencies in the technical field in order to enable regulatory progress across technical teams. However it is clear that the Ministry is the jurisdictional body in all matters related to IPTV, since this is deemed an added-value development. The challenge arises mainly in relation to contents, something very hard to regulate. We will focus on general criteria such as Internet: which things can be transmitted and which things cannot. Anyhow, I understand that IPTV regulations will be very similar to what CNTV suggests for television".

* A more significant challenge is establishing how video and audio signals supported by telecommunications networks are to be treated.

The regulatory agenda

In spite of the Fact that most of the countries do not have barriers for IPTV, there are still some obstacles in certain markets. In Argentina, Telecom and Telefónica are contractually prohibited from providing video services. Companies claim for a complete review of this prohibition, and this year they will intensify their pressure when the city of Buenos Aires, the city with greatest purchasing power, starts to receive offers of fixed telephony from cable operators. Moreover, they are already talking off the record about IPTV launchings during 2008. In Brazil there are no rules. IPTV was launched unlimitedly as VOD which does not permit serious competition with cable operators offers. The largest market of Latin America will not see any changes regarding this situation until the second half of the year. And also, the Triple Play situation is expected to be solved in other markets where regulations still face barriers, such as Costa Rica and Uruguay.

The big question is: does it make sense to keep prohibiting telephone companies from entering the media market when cable operators are free to implement Triple Play? José Luis Peralta, representative of the Federal Telecommunications Commission (Comisión Federal de Telecomunicaciones, COFETEL) of Mexico, described to Convergencialatina the state of regulatory discussions in this country. In Mr. Peralta's view, convergence is covered by the regulatory framework in Mexico as from its creation, except for Telmex, as far as it does not refer to the regulation of services but of networks, and interconnection is also covered as a key requirement for competition. COFETEL criticized the Convergence Agreement, the ad hoc regulations which enable Telmex to provide video, but it admitted there will not be any legal objections providing it complies with the interconnection and portability obligations. The executive made clear that the fact that one regulatory law be maintained for telecommunications and another one for radio-broadcasting is due to, regarding the latter, an attempt to safeguard other aspects such as cultural integration and educational development, whereas telecommunications rules are competition-oriented. ■

Triple Play Regulations

Argentina:
Stakeholders are prohibited from providing television. Triple Play is restricted to Cable TV companies.
Brazil:
Telecommunications operators are only authorized to provide VoD (Video On Demand)
Costa Rica:
A Bill of telecommunications is under discussion and it will include convergence, as requested by TLC with United States and Central America. At present, ICE keeps the fixed telephony monopoly.
México:
It is allowed under the Convergence Agreement dated October, 2006. Telmex may start in 2008 with interoperability, interconnection and portability restrictions.
Uruguay:
Current regulations do not cover the possibility to provide fixed voice services which are provided exclusively by Antel. Rules will be reviewed this year within a convergen ce plan.

Regulatory Aspects

Dilemma over how to price interconnection in NGN

Transport of IP packages will put an end to the traditional prices for access charges -per minute or per call- replaced by rates based on broadband capacity or volume of information transmitted

In view of the transition of traditional networks and services to new generation networks (NGN) and VoIP based-services, the main issue arises in relation to regulating the interconnection; which on traditional networks is defined in terms or prices per calls or per minute; a regulation to be defined on terms and conditions of switched telephony. This scenario, characterized by the clear liquidation for each destination -accounting rates- is modified by VoIP traffic, where interconnection rate is to be regulated by payment of broadband capacity instead of charge per minute or call, as it has been traditionally so far. This is so because ISPs are both transmission and content promoters. Additionally, the access includes the traffic of packages through different networks.

Interconnection

NGN means a basic level of transport of IP packages over the MPLS multi-protocol; namely, label switching, a concept which encompasses multiple technologies of broadband transport. This framework requires a flexible interconnection model, which establishes a broader definition of technological neutrality, with open interfaces. The extent of absence of regulations today regarding this kind of networks is making telcos reinforce their investments in NGN and migrate their services to IP platforms, since in general, regulation in force treat them as value-added services. This behavior achieves operation costs savings and qualifies the traffic of voice telephony for a lower level of regulation. The result will be an increase in volumes of information services and a reduction in volumes of minutes of voice telephony use, which are subject to interconnection charges or international accounting rates. The traditional sources of network operators will keep on vanishing, and regulatory authorities will have to think again about how to enable operators to recover their costs.

In this sense a new regulation of interconnection for NGN will have to delete the regulatory asymmetries of rules developed for traditional networks, which treat each service in a different manner. Changes in terms of technology and cost structures of telecommunications networks imply that the mechanism of charging prices per minute of use is increasingly more ineffective.

As more services are provided through packages in digital networks, minutes of use are not the important factor determining costs level.

The premise that the person who initiates the call is the only cause of the cost is increasingly less valid. The CPP system for retail prices and for interconnection does not reflect costs structure anymore.

Establishing payment of broadband capacity for access charges will enable to aim at prices based on costs in the case of NGN. This shift will enable to adopt more transparent charges for the universal service, in addition to a rebalancing of rates. This will also facilitate the establishment of uniform charges, such as flat rate in local calls and spreading geographical areas for the same rate. Interconnection charges for VoIP, reflecting costs, may involve: a) payments of users; b) unpacking; c) origination and termination charges for VoIP based on costs.

Various analysts characterize NGN as network models in three layers: transportation; services and applications; and management and control functions. This type of architecture allows an important reduction in the number of interconnection points in the transportation network. For the transition stage of switching networks toward a network of converging packages, a series of challenges are highlighted in the regulation of interconnection, including quality standards, fixing of prices per access charge and geographical numbering and location.

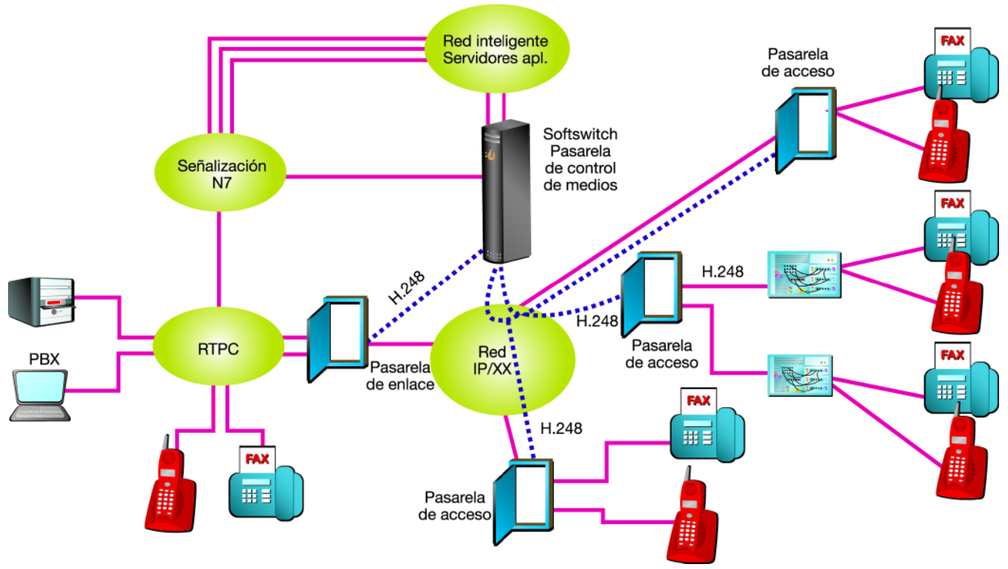
In a simple NGN competition model, interconnection of networks of the same or different nature is made in gangways. There is a substitution of switching stations along the gangways. Access nodes are of multiple services with different types of users connected to networks (platforms) of two operators: consumers and content providers. Each network is one platform. The interconnection agreements follow IP network practices with the possibility of traffic agreements and zero access charges.

Moreover, among the bottlenecks of interconnection rules are the rationing of IP addresses, price discrimination and block of protocols. Additionally, in the new scenario, the establishment of access charges to content providers does not seem to be crazy or ineffective. ■

ITU defines NGN as:

- A network based on packs capable of:
  Rendering telecommunications services.
- Making use of multiple broadband transportation technologies.
  In those networks, in which functions related to services are independent from transportation technologies
- They allow unrestrictive access of several services providers.
- They support generalized mobility, which will allow consistent and ubiquitous provision of services to users.

* The extent of absence of regulations today regarding this kind of networks is making telcos reinforce their investments in NGN and migrate their services to IP platforms, since in general, regulation in force treat them as value-added services.



Regulatory Aspects

Bridging the digital gap requires a new approach of Universal Service

Regulators and operators suggest aiming goals of universal access programs toward broadband and training of citizens in smart use of Information and Communication Technologies

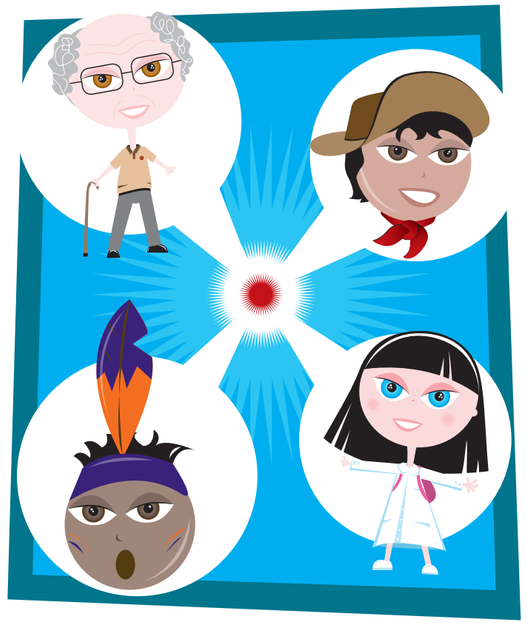
Both regulatory authorities and operators of Latin America have been analyzing the different proposals to elaborate a re-engineering of the model of Universal Service, in terms of its scope as well as its conception and management, with the purpose of focusing goals of universal access programs on broadband.

According to the Foro Latinoamericano de Entes Reguladores de Telecomunicaciones, Regulatel, (Latin American Forum of Telecommunications Regulatory Entities), the initiatives to bridge the digital gap in telephony and Internet in Latin American countries over the last decade have overstepped the limit so it is necessary to redefine concepts, objectives and resources of Universal Access.

Regulatel considers that to achieve the goal of providing new technologies to 85% of the Latin American population investments of US$ 13.6 billion are required.

Regulatel estimates that, governments, associations and companies will need to invest an average of US$ 126 per person in mobile telephony and US$ 30 in broadband accesses, among other services, with the purpose of covering most of the populations with more than 300 inhabitants.

In spite of considering the policies destined for increasing penetration levels of telecommunications in Latin American a success, the fund programs of universal access have been questioned since they limit to building physical infrastructure to connect rural and remote locations with the basic telecommunications networks. In this sense, Regulatel considers it is necessary to define the new vision of access to Information and Communication Technologies with the purpose of building a new paradigm of Universal Service broadband-oriented policies and programs.



Change of Focus

The Agencia Nacional de Telecomunicaciones, ANATEL, (National Telecommunications Agency) of Brazil introduced a new Universalization Goals Plan for the licensees of fixed telephony to replace the installation of Telecommunications Services Ports for the construction of broadband infrastructure. Licensees should take this network to the telephony stations, whereas other companies should spread these networks to end users' homes. The proposal establishes that municipal districts with up to 20 thousand inhabitants will have a backhaul with a capacity of 8 Mbs; in those districts of up to 40 thousand inhabitants the capacity will be 16 Mbs; up to 60 thousand inhabitants, 32 Mbs and over 60 thousand inhabitants, the capacity will be, at least, 64 Mbs.

Based on this criterion, the 10th Summit of Regulatory Authorities and Operators, organized in 2007 by Regulatel and the Asociación Hispanoamericana de Centros de Investigación y Empresas de Telecomunicaciones, AHCIET, (Spanish-American Association of Investigation Centers and Telecommunications Companies) ratified the need of redefining access policies and universal service to adapt them to the new needs dynamically. Additionally, the simplification of criteria of Universal Service Funds use is suggested to increase the execution levels. It is also proposed to aim the goals of universal access programs to broadband and the Internet coverage. Moreover, to make the regulation more flexible to encourage access in rural areas and in areas of difficult access and to create work groups to study the regulatory, technical and economic aspects of this issue.

With similar criteria, the Inter-American Telecommunications Commission (CITEL), carries out a "Regional Project Supporting the closing of the digital gap and the development of the information society". CITEL, an entity of the Organization of American States (OAS), emphasizes the need to educate people in a new digital culture as a priority, which will enable an intelligent use of the Information and Communication Technologies for a better lifestyle. This work consists of the preparation of plans for the development of rural or municipal communities to convert them into digital municipalities or cities where local e-government is complemented with actions of tele-education, telemedicine, tele-commerce, development of Small and Medium-sized Enterprises and Micro Small and Medium-sized Enterprises, etc; and to propose the evolutionary vision of a future local m-government (local mobile government). The other basis is orientated at the conformation of a new type of communitarian tele-center where in addition to the access to services, we have education programs to citizens and training, not only in the use of Information and Communication Technologies but also in areas related to the productive activities of the interested communities. ■

* To achieve the goal of providing new technologies to 85% of the Latin American population investments of US$ 13.6 billion are required.

Broadband and Universal Regional Access - Cases:

Country	Entity	Project	Description
Mexico	Communication and Transport Secretariat	e-Mexico	It integrates e-learning , e-health, e-commerce and e-government. It provides connectivity to 10,000 locations and access to services rendered by the federal public government and the municipal administrations.
Mexico	Public Education Secretariat	Encyclomedia	It aims at providing PC's and broadband to public elementary and high schools
Peru	Organismo Supervisor de la Inversión Privada en Telecomunicaciones (Control Agency of Private Investment in Telecommunications)	FITEL	Universal Service Fund. Among its projects there is the provision of broadband services by means of the installation of public access booths to Internet and IP telephony in rural areas.
Colombia	Communications Ministry	Compartel Program	For the period 2007-2010, it plans to provide connectivity to a total of 8,360 public institutions and to increase up to 10 thousand number of Telecenters that provide broadband access.
Honduras	Consejo Hondureño de Ciencias y Tecnología (Sciences and Technology Council of Honduras)	COHCIT	It provides telecommunications services in rural areas and regions designated as areas of significant interest.
Venezuela	CNTI-Centro Nacional de Tecnologías de Información (National Center of Information Technologies)	Info-centers	It offers free public access to Internet via its 240 infocenters located in big cities as well as in remote areas. Each infocenter has 12 personal computers, one printer, and scanner in libraries, museums, art galleries, parks and other public places.

Brazil shows a quick growth in broadband services

Cable access and ADSL grew 34.7% and there could already be 8 million subscribers. There is a strong increase of contract broadband capacity

Broadband, including home access provided by cable networks and fixed telephony, was the service that expanded the most in the territory of Brazil during 2007 and it was also the one that pushed profit margins of cable and fixed telephony operators the higher.

Today, ADSL covers 2,135 Brazilian cities, i.e. 38.4% of municipalities. It does not seem much, but these cities have 74.2% of population (equivalent to 140.2 million inhabitants), who account for 87.17% of national consumption of goods and services. The range of cable modem is quite smaller due to the low penetration of pay television service, which is available in barely 135 cities. However, even though they hardly represent 2.5% of Brazilian municipalities, these cities have more than 38% of the population, about 73.36 million inhabitants. And, in great economic centers, the Potential Consumption Rate of the area covered by those operations is higher than 52% of the national total.

Together, both platforms cover 2,140 municipalities, meaning that barely five cities have cable modem or MMDS services and there is no competitor as far as ADSL is concerned, which means 11.5% increase in the number of towns served compared to previous year. In connection with the population served, there was a less significant increase of 3.83%, from 135.8 million to 141 million inhabitants, which shows that growth is now taking place in towns less populated than those already receiving the services.

Ongoing growth

According to data provided by Agencia Nacional de Telecomunicaciones, ANATEL, (National Telecommunications Agency) broadband has grown an outstanding 3,617% from 2000, when it barely had 238,000 subscribers, to 2006 when it had 8.85 million accesses. These numbers do not necessarily represent accesses in service, but the installed infrastructure does. The greatest jumps took place in 2001, when the base grew 144% (although over a small absolute number) and especially in 2004, when the service grew more than 130%. Since then, there has been an annual growth of about 50%.

An important detail is that accesses have been growing very quickly. While total of accesses increased about 57% from 2005 to 2006, accesses above 2 Mbps grew almost 320% in the same period, and this also happened in 2007. The infrastructure has been supporting these increases in high speed, as in the case of cable modem, which was designed for broadband from the construction of networks, and with the expansion of ADSL2 networks that support services such as video on demand. Today, these networks add up to 1,087 cities, more than half of those with ADSL networks.

Competition

In Brazil, telephone networks also control broadband access service. ADSL networks have 5.28 million subscribers, as opposed to 1.6 million of cable modem/ MMDS subscribers. This means that telephone companies have more than 76% of market share. The leader is Telefónica, with 1.94 million subscribers to its Speedy service, with a 28% market share; it is followed by Brasil Telecom (Br Turbo), with 1.52 million subscribers (23%), and Telemar (Velox), with 1.34 million (21%).

At the same time, Virtua, of Net Servicios (Telmex subsidiary), is leads cable modem services, with 1.29 million subscribers and an 18.7% market share. As it could be seen, Virtua represents almost every cable platform broadband access: it has nearly 85% of that segment. It is important to bear in mind that those numbers already include former Vivax's subscribers, which was acquired by Net.

Telefónica, with its Speedy service, and Brasil Telecom, with Br Turbo, are the two operators that have achieved, so far, the greatest efficiency in competition over the market potential regarding effective customers. Speedy reaches 17.4% penetration regarding homes

Broadband Market

	Cities covered in 2006	Cities covered in 2007	Commune which competition	Population in the covered area	Socio-economic level A	Socio-economic level B	Socio-economic level CDE	IPC
Ajato	2	2	2	17.250.243	549.984	1.771.714	2.915.848	14,78
BrTurbo	1.274	1.413	74	42.034.796	615.160	2.983.665	7.041.071	24,70
NetSuper	79	77	4	6.166.142	203.197	665.408	1.167.704	5,47
Speedy	346	371	46	39.573.451	891.030	3.672.004	6.559.663	28,76
Turbonet	53	66	66	22.665.341	525.066	2.087.093	4.025.332	16,71
Velox	221	273	48	55.581.894	826.312	3.939.728	10.333.229	31,82
Virtua	12	71	71	46.862.112	1.301.633	4.630.330	8.009.158	37,65

Source: Atlas Bras. de Telecomunicações, based on data provided by ANATEL and Brasil em Foco 2007 (Target). IPC: Potential Consumption Rate, percentage of national consumption of goods and services in the covered areas.

Convergence events
Calendar 2008 / 2009*

JUNE 08 — 3G MÓVILES
5th Conference- South Cone 2008
June 4 and 5
Marriot Plaza Hotel
Buenos Aires, Argentina

JULY 08 — GOVERNMENT NETWORK
4th Edition - Conferences & Workshops
July 2 and 3
Auditorium La Rural
Fair Site of Buenos Aires, Argentina

SEPT 08 — WiMAX
4th Conference - Regional 2008
September 2 and 3
Marriot Plaza Hotel
Buenos Aires, Argentina

AUG 08 — BUSINESS TRENDS AND COMMUNICATIONS
5th Edition - Conferences & Workshops
August 2008
Marriot Plaza Hotel - Bs. As., Argentina

OCT 08 — CDMA 450
2nd Conference - Regional 2008
October 20 and 21
Argentina

MARCH 09 — TRIPLE PLAY
4th Conference – South Cone 2009
March 2009
Sheraton Córdoba Hotel
Argentina

Grupo CONVERGENCIA

Further information: eventos@convergencia.com.ar
www.convergencia.com.ar | www.convergencialatina.com

*Subject to change

* ADSL networks have 5.28 million subscribers, as opposed to 1.6 million of cable modem/ MMDS subscribers.

located in the municipalities where the service is available.

In the case of Br Turbo, there is a 14.3% penetration over the total of homes in its area. Virtua and Velox's home services have a 9% penetration, considering homes in their areas of service.

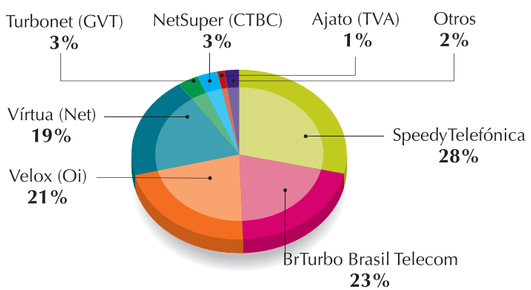
National Network

A substantial aspect of broadband evolution in the country is the intention of the federal government to establish a national network that, in the beginning, will provide free broadband access service to more than 55,000 public schools throughout the whole country until 2025. For this, at the end of 2007, the government entered into an agreement with incumbent companies by which they will have an essential role in the deployment of the network, particularly as regards "backhaul", while, in compensation to this provision, they will be exempted from fulfilling the goals of universalization stated in the contract renegotiation of the end of 2006, which basically involved the installation of Telecommunications Services Posts (TSP) throughout the country.

According to the statements made then by the Minister of Communications, Hélio Costa, the project will have an estimated cost of approximately US$ 1.7 billion. The complete official proposal considers that municipalities with up to 20,000 inhabitants will have a "backhaul" with a capacity of 8 Mbs; in those with up to 40,000 inhabitants it will be of 16 Mbs; in those with up to 60,000 inhabitants the capacity will be of 32 Mbs, and in those with more than 60,000 inhabitants it will be of 64 Mbs minimum.

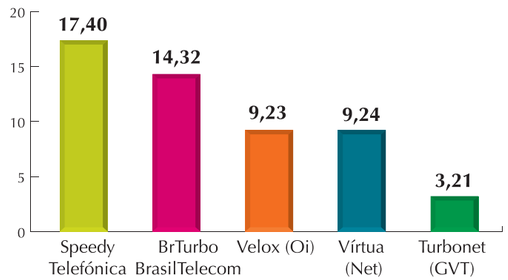
It should not be forgotten that during the last presidential campaign, the only topic related to the telecommunications sector President Lula da Silva included in his election platform was boosting the development of broadband accesses in the whole country.

Broadband market share

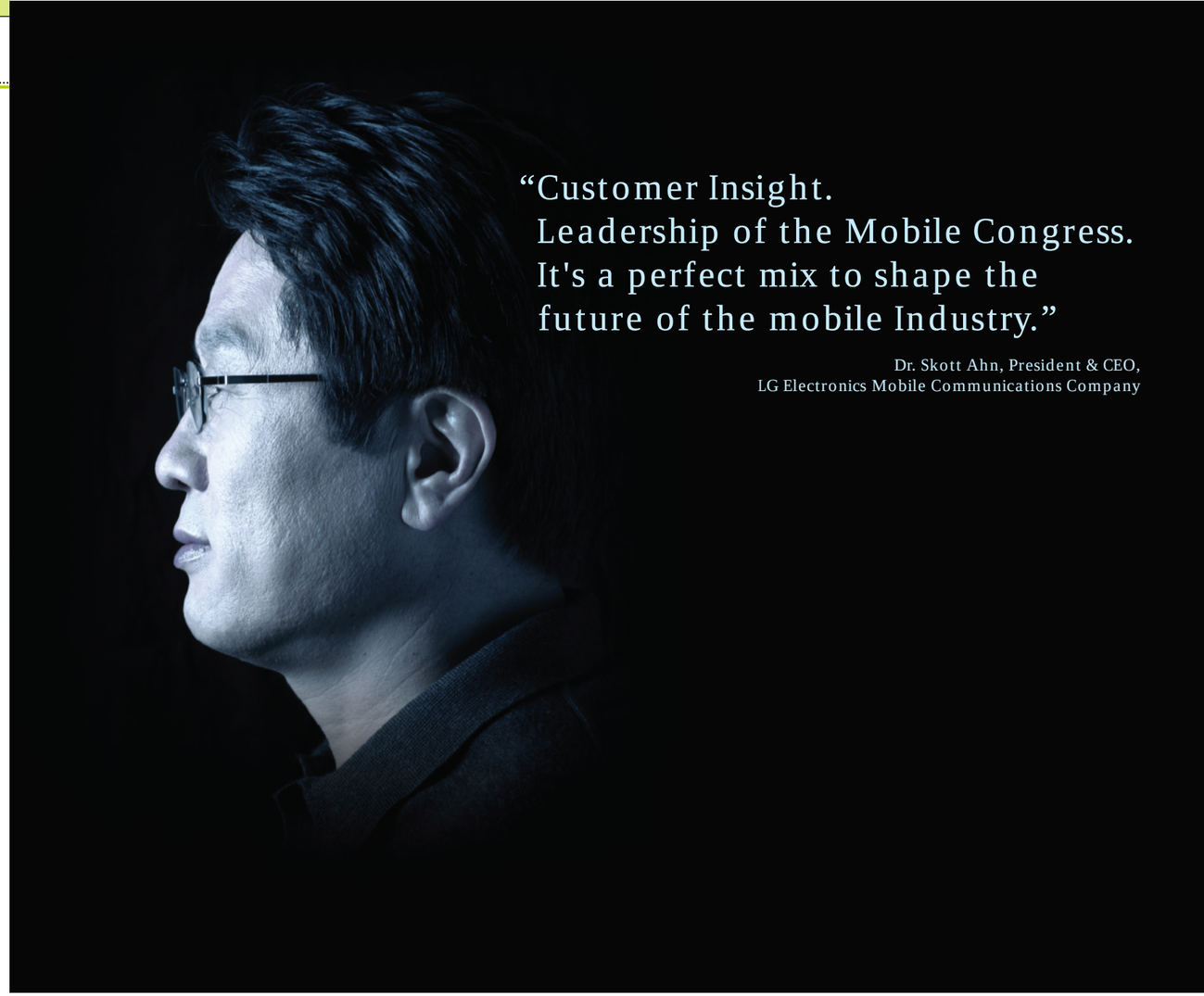


Source: Operators and Brazilian Telecommunications Atlas 2008 - Teletime

Penetration over covered homes



Source: Brazilian Telecommunications Atlas 2008 - Teletime



GSMA MOBILE WORLD CONGRESS
Ideas in motion.

where: Fira de Barcelona, Spain
when: 16 - 19 February 2009
contact: +44 (0) 20 8879 2422
register: www.mobileworldcongress.com

Platinum Event Sponsors
Platinum Media Partners
Founding Partner
Online TV Partner

Cases

Mexico:
Competition enters the final straight

Although Telmex and Televisa will continue dominating the scenario, the new regulatory policy will facilitate a wider opening and it will promote competition focused on Triple Play

The first year of President Felipe Calderón's term of office moved forward with difficulties to keep one of his promises: reducing monopolies' power in the Mexican economy, especially in telecommunication industry, where there is bigger concentration. Far from the coexistence image that former president Vicente Fox's administration left regarding its relationship with giant Telmex and Televisa, Calderón's administration stood out for two successes: firstly, it managed to have the Supreme Court cancel reforms to the Radio Broadcasting Law, a regulation that favored dominance of big national television networks. Then, the government could set a debate about the need to open the fixed telephony market to foreign investment, a segment widely dominated by Telmex.

However, the efforts to widen competition in the local market are, at least, uneven. If at first sight important measures are seen to put an end to the dominant power of companies like Telmex and Televisa, the succession of facts results in a scenario closer to a duopoly between both giant Mexican companies, and with little room for the arrival of more international groups. Although Telmex faces new attempts to impose an asymmetric regulation to the company due to its dominant position, it is the company itself that seeks conciliatory positions with regulatory agencies, as its main interest lies in overcoming regulating difficulties that restrict Triple Play market. And so, it will be willing to give up ground in other fields. In turn, the annulment of the reforms to the media law that benefited Televisa is very different from the lax attitude of the anti-monopoly authority, who has not objected much to the fact that Televisa is consolidating itself as a hard player through the aggressive purchase of cable operators.

Alternatives for competitors

The incipient change of control in regulatory policies predicts a scenario with a bigger competition so that the convergent services deployment will allow reaching 22% goal of broadband penetration by 2012, when Carderón's administration comes to an end. With Televisa positioning itself as the main player in paid TV -and second cable operator- Telmex will have a strong competitor as far as Triple Play is concerned.

Also, Megacable's consolidation as the first cable TV competitor gets stronger, just as Axtel and Maxcom consolidation in telephone companies sector. In 2007, Megacable bought shares in Multioperadora de Sistemas and Telecable, and with this, its portfolio adds up to 1.5 million customers, and its network extends all over the country. The company already has more than 85 thousand Triple Play customers. Axtel, in turn, will exceed one million operating fixed telephone lines and 120,000 broadband subscribers in 2008. It covers 26 cities and is about to launch IPTV so as not to lose ground in front of Maxcom.

During 2008, Maxcom will expand its Triple Play services to 100 cities in the country, including the Federal District, Toluca and Querétaro. At present, the telephone company provides television service in Puebla, with an IPTV offer that includes Televisa and TV Azteca channels. In any case, Maxcom's horizon is limited, the company has a total of 23,000 customers, of which 5,000 have already hired IPTV.

Additionally, besides these secondary but potential-loaded actors, there is Telefónica's will to enter fixed telephone market once the 49% limit for foreign participation is eliminated. And, also, two more ways open up for broadband growth in the country. On the one hand, the introduction of new operators is expected as from 2008, when 3.5 GHz spectrum bands for wireless broadband are offered for bid. On the other hand, the Comisión Federal de Electricidad, CFE (Federal Electricity Commission) will finally offer the exceeding capacity of its fiber optic network in 2008. The State electrical company will hire such exceeding capacity to telecommunication companies, according to the concession that it was granted by the Secretaría de Comunicaciones y Transporte (Department of Transport and Communications) as a "carriers' carrier". CFC's entry into the telecommunication market will allow for deductions of at least 15% in broadband fees.

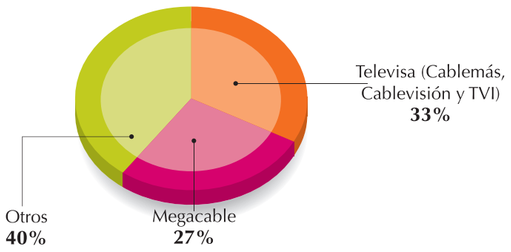
In this sense, 2008 will be a key year when Telmex obtains authorization to provide video services through its networks once it meets all number portability and interconnection requirements. Telmex, who keeps its ADSL broadband leadership -about 4 million users by the end of 2008- will have new attractions to market IPTV through its copper networks, which have approximately 20 million subscribers. Although about half this figure belongs to limited resource customers and therefore, low consumption ones, the potential number of customers that could be interested in IPTV reaches 10 million, in a market where paid TV penetration is relatively low (5%), compared to other Latin American countries.

Televisa, on the lookout

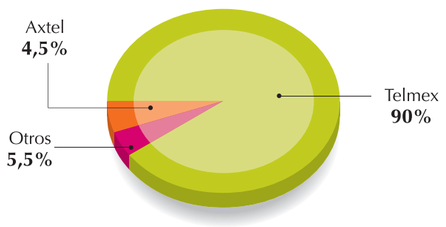
Televisa plans to make new regional operator acquisitions to expand its networks so as to generate more competition and lower broadband fees. The purchase of Bestel telephone company and of a participation in cable operators TVI and Cablemás has enabled the company to have a fiber optic network longer than 15,000 kilometers, which will let the media network compete with Telmex in the broadband and voice service offer. Televisa's network is completed with Cablevisión's wiring, its subsidiary in the Federal District, and with this it registers 1.3 million cable TV customers. The other line of business that is gaining strength within Televisa's strategy is the deployment of mobile and Internet added value offer, developed together with its esmas.com portal, which include low demand videos and Online Live TV service.

* By the end of February, 2008 there will be 7,100 broadband access points that will benefit around 10 million citizens.

Market Share - Cable television



Market Share - Fixed telephony



Cases

ARGENTINA, CHILE, AND PERU

Economic growth as common factor

While Chile and Argentina maintain important levels of broadband growth, Peru must solve a series of problems to be able to improve its current penetration level

Within Latin America, uneven growth of broadband has had its best developments in markets that belong to different political and economic situations. Therefore, it cannot be deduced hastily which the determining factors are that drive broadband; economic growth is one of them but it is not enough. Such is the case in Argentina, Chile, and Peru, three countries where growth in economy and high-speed connections is outstanding though from dissimilar levels.

A common characteristic in three is political stability and economic growth. Social Democrats and Christian Democrats, which have been ruling Chile since 1990, have gone into greater detail as regards the creation of State policies over temporary governments. In Argentina, change of President greatly represents the institutional recovery after the biggest crisis in its history, which took place in 2002. And Peru is going through a similar situation.

Both Peru and Argentina show about 8.5% GDP increase in 2007, with an expansion of internal consumption that, among other matters, had a favorable impact on broadband growth. In the case of Argentina, high-speed access lines might reach 5 million in 2010. In 2007, the market grew 60% up to 2.5 million, boosted by the commercial drive of operators and the positive effect of double play offerings (broadband + voice or cable + broadband). In Peru, penetration reached 2.1% towards the end of 2007, with 600,000 service lines.

Chile

On the other side, Chilean GDP increased 5.3% in 2007 and it is estimated it will be around 5% in 2008, therefore typical aspects of market and regulation must be considered as preponderant factors in the growth of broadband. Even though three countries present an opening scenario, the situation in Chile is characterized by two substantially different features. First, the creation of a State policy specifically destined for the expansion of broadband and closing the digital gap. Second, Chile does not have any barrier for Triple Play, - with operators that have already been providing the service for more than five years-, and there is a strong dominance regulation over the incumbent telephone company, which maintains a competitive rate policy.

In Chile, the Digital Agenda, plan that since 2002 had been integrating by the public sector and private companies to expand broadband, was then followed by a more ambitious project. In 2007, Comité de Ministros para el Desarrollo Digital (Minister Committee for Digital Development) was created, which established guidelines of the Strategic Plan for the period 2007 - 2010. This plan, which will include the 2.0 version of the Digital Agenda, is also presented as a technological policy and a development strategy of the ICT sector that includes public and private efforts.

As a result of State policies, Chile registered 1.2 million accesses in June 2007, with an annual growth of about 30%, when the initial expectation of the Digital Agenda was to reach 1 million in 2010. With a penetration of 8%, the new objective is 1.5 million. However, with the emergence of WiMax and the thrust given to competition by Telmex, as well as the spread of mobile broadband offerings over third generation (3G) networks, the number could add up to 2 million accesses by 2010.

In 2008, main challenge for operators will lie in multiple play services, which in the first place will entail adding mobility to the integrated voice, data, and video offering. For the incumbent telephone company, Telefónica, broadband is the “star product” of its businesses in the country. With expected investments of more than US$ 1.9 billion until 2009, it will allocate more than half the amount to its broadband businesses. In 2008, it expects to exceed 500,000 ADSL customers and more than 200,000 television customers, adding their satellite TV and Imagenio offerings, IPTV service. The Spanish company is also planning on launching “tetrapack”, a package that will include Movistar's mobile telephony service.

Argentina

The situation in Argentina is quite different from the one in Chile. Even if growth estimates until 2010 are met, an explosive growth is not expected in the next years as a result of different factors. This slowing down in growth is mainly explained by the fact that as penetration increases, necessary investments to capture new customers will be higher, which will raise doubts among operators. The risk is that market dispute could only be limited to the segment of greater purchasing power.

The last data available (December 2007) showed that broadband penetration in the country is 6.4%. At the same time, data included in the chart of Homes of Instituto Nacional de Estadística y Censos, INDEC, (National Institute of Statistics and Censuses) shows that the segment of greater purchasing power of the population is composed of 5.88% of inhabitants. Consequently, we can speculate that operators should take the next step to be able to gain users in a sector of the population with less purchasing power, where costs become more important than now.

Peru

The situation in Peru is quite different too, compared to the previous ones, since its penetration levels are very low and towards the end of 2007, penetration was around 2.1%. However, in the last few months the national government set a series of measures aimed mainly at speeding up the growth of broadband services, particularly in provinces and rural areas of the country. Therefore, the last data shows an annual increase of 12.8% with a growing tendency for the following years.

One of the problems faced by Peru is that most broadband connections, somewhat over 40%, have speeds below 512 Kbps, which makes it necessary to improve the existing networks to provide a service that fits new demands. The country also has distortions as regards service costs, because today, according to a Cisco's report, its rates are 40% higher than the ones in Chile, almost 50% more than those paid in Colombia and four times higher than the ones in Argentina.

Cases

COSTA RICA, ECUADOR, PARAGUAY, VENEZUELA and URUGUAY

Closing the digital gap will also reinforce role of State operators

Far from the privatization wave that took place in the last decade, the countries which maintain companies under control have more facilities for the enforcement universal access policies

The privatization wave of utilities companies in the region did not succeed in preventing -due to different political circumstances- a few telecommunications operators from remaining under the State control. Such was the exceptional case of telephone companies in Costa Rica, Paraguay, Uruguay, Ecuador and Honduras

As opposed to the negative wishes of the privatizing neo-liberal speech, the success or failure of the performance of these operators was not linked to their State condition, but simply to management policies, as it happens with any company. Furthermore, Uruguay and Costa Rica also stand out thanks to the high penetration of fixed telephony with service quality, low rates and clear financial statements, in spite of the fact that there were neither privatizations nor market opening.

The development of state-owned companies in the region is case-oriented, since they are different political and economic scenarios, different management model, including the extent of autonomy of the operator regarding the central administration, the existence of private competition or not and the deployment or absence of State policies for the sector, among other factors. Anyhow, the provision of broadband Internet access by State operators facilitates, among other issues, the enforcement of policies destined to close the digital gap and exerts a greater pressure on rates.

Ramón Gómez

Venezuela

Additionally, last year, the Latin American scenario underwent the re-nationalization of CANTV. The incumbent operator of Venezuela, which was owned by Verizon, returned to the State's control within the framework of the "Bolivarian revolution" led by the president Hugo Chávez, a process consisting of significant criticism to the neo-liberal policies and marked investments in the general economy, as it happened with re-nationalization of this company, now state-owned.

Ramón Gómez, manager of regulatory affairs of CANTV, explained to Convergencialatina that the company developed several action lines to improve coverage of services in the country. "We are carrying out a plan to promote the growth of fixed telephony during the next three years. Our main objective is to double the lines installed in 2008", he pointed out. One of the policies implemented within the framework of this program is that any new line installed is at the same time, a broadband connection. Another strategy is to give priority to the installation of new services in the areas not yet served by the company. Gómez explained that "according to land zoning of the population of low resources, all those living in poor areas will have access to discounts in Internet service rates". Today, CANTV has 621,269 broadband subscribers and, by the end of 2008, it is expected to add 461,069 new users of this service to reach 1.2 million, including ADSL and TDMA wireless accesses and- as from the last three-month period of 2007-with WiMax.

Gómez emphasized that the company has the advantage of having gathered investments of all telecommunications assets that belonged to the State, and this will enable to have an optical fiber network of 20,000 Km by mid 2009". He also highlighted that, by the end of 2008, the satellite Simón Bolívar will be placed into orbit, another factor "that will also help to enlarge coverage". Moreover, CANTV will be added to the offer made by IPTV, although it will launch the service nationwide only by mid 2009.

Paraguay

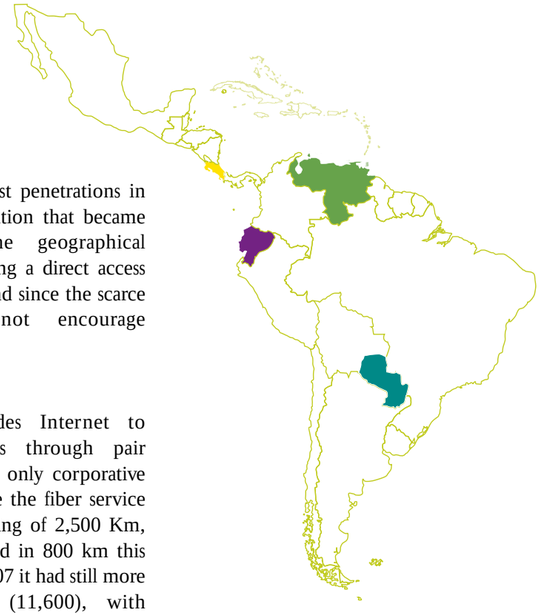
The case of Paraguay is different; the State remains in control of the Compañía Paraguaya de Comunicaciones, COPACO (Paraguayan Communications company) after the five attempts to privatize the operator did not succeed. De-capitalization of COPAGO, for instance, has led the country to have an early development of mobile telephony, to replace the lack of coverage of fixed services. Broadband situation is similar with one of the lowest penetrations in Latin America, a situation that became worse due to the geographical difficulties when having a direct access to submarine cables and since the scarce population does not encourage investments.

COPACO provides Internet to residential customers through pair copper cable, whereas only corporative users and ISP's receive the fiber service (the company has a ring of 2,500 Km, which will be enlarged in 800 km this year). At the end of 2007 it had still more Dial-up customers (11,600), with respect to the 9,200 ADSL customers.

By 2008, the objective is to reverse the situation with the development of wireless fixed accesses by means of different technologies: GSM, WiFi and WiMax. For such purpose, it will invest US$ 9 million in order to install 82,000 lines with Internet access and 148 radio base stations in rural areas.

Costa Rica

At the other end is the Instituto Costarricense de Electricidad, ICE, (Costa Rican Electricity Institute) in a country that has a broadband penetration higher than 3%. According to an investigation for that company presented in November, 2007 by Consulting firm CID Gallup, 35% of Costa Rican people use Internet, in 39% of homes there are computers and 41% of these are connected to the net. The report states that more than 85,000 customers of the state-owned company use broadband services, 20% have dial-up connection and the remaining 80% have modem cable or other technologies. WiMax service operates in Santa Ana, Escazú, and in several areas of San José, Heredia and Cartago and they are planning to cover the whole Great Metropolitan Area during this year until reaching the 20,000 accesses.



The situation for the ICE will change as from the execution of the Free Trade Agreement with the United Sates, Central America and the Dominican Republic. As a consequence of this FTA the new Telecommunications Law which provides for the opening of the area will be passed. To face this new scenario, the ICE plans a series of investments with the purpose of enlarging the coverage and making progress in services such as IPTV. The company will invest US$ 20 million in the enlargement of routers interconnected to the Sistema Nacional de Telecomunicaciones, SNT, (National Telecommunications System) and in

Cases

* The performance of these operators is not linked to their State condition, but simply to the management policies.

extending the arrival of the Advanced Internet Network (AIN) by means of the development of NGN-IP. This year the AIN will deploy a nucleus ring of 6 routers of 10 G, 26 edge routers of 2.5 G and 181 access routers, a deployment that will come to an end in 2010.

Uruguay

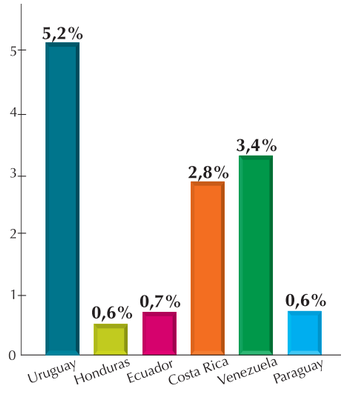
An increase of competition is also a probable scenario for the Administración Nacional de Telecomunicaciones, ANTEL, (National Administration of Telecommunications). This operator is used to competing with its mobile subsidiary Ancel which leads the mobile phone market, in spite of the arrival of América Móvil and Movistar. But it still keeps the monopoly of fixed services, the basis of its new strategy of packed services of voice and broadband with which it offsets the growth of mobile telephony.

Uruguay has an Internet penetration over 5 % with ADSL of ANTEL -sole provider of the service-, which is the controlling technology, as opposed to the weak competition of wireless services. Within this context, in September 2007, the Cámara Uruguaya de Televisión para Abonados, CUTA, (The Uruguayan Television Chamber for Subscribers) requested to the government a new regulation that will enable cable operators to market broadband Internet services trough their networks, something they are not able to do yet.

In spite of the fact that there are no agreements yet between the government and cable operators, ANTEL, taking preventive measures, made some tests to incorporate the television service through the telephone line. Also, it has an agreement with 25 cable television operators to offer Triple Play services-broadband (ADSL), 60 TV signals and a pre-established number of fixed or mobile monthly calls at a prefixed cost. Moreover, the state-owned company of Uruguay plans to start offering WiMax after obtaining the permission to operate in a suitable frequency for this technology.

The good results of ANTEL have generated a backup for the people of Uruguay that has been exercised in several opportunities to stop attempts to privatize the company. For the user, it is not only a mere defense of the political and ideological interests, but also of the service. This year, ANTEL launched a reduction of ADSL rates while applying an increase of 50% in the browsing speeds.

Broadband / Population



Source: Convergencia Research as of 4Q2007

Ecuador

Regarding the cases mentioned, Ecuador would seem to be in halfway. It is a country, which lacks a lot of in relation to connectivity so far- the broadband penetration is 0.7%-, an uneven development of state operators (with scenarios that include corruption cases and privatization attempts) and a change in the political direction which augurs a greater state intervention in the sector.

In this sense, the most expected news for this year is the possible merger of state operators Andinatel and Pacifictel. If as to their performances, former were “a jewel of the crown”, the latter would be the “black pearl” of history. The decision of Rafael Correa's government to close the digital gap and to manage to make the development of broadband more equitable in the country would include the unification of the state assets under the control of present Andinatel.

This year, the company implemented a reduction of rates by 40% in its ADSL service and an increase in the browsing capacity. Diego Salazar, manager of Andinanet and Andinadatos (business units of Internet and data of the state-owned Andinatel) said in a conversation with Convergencialatina that the company “operates within a coverage area of 13 provinces in the north of the country” and that 43,000 ports are being installed which will be marketed during the first half of the year. Additionally, Salazar said that they bet “to have 100,000 ports installed by the end of this year and the final project is to reach 300,000 in the whole coverage area of the company within three years.

Of almost 90,000 broadband connections installed in the country, around 30,000 belong to Andinatel-70% of this city is concentrated in the province of Pichincha. Salazar explained “that the most marketed speed up to now in the country is 128 kbps and we are trying to make the customer start hiring services of 256 kbps from now on. This measure is possible since the arrival of several submarine cables is reducing capacity wholesale prices. Until October 2007, one STM1 cost around US$ 60,000 and in January of 2008 it went down to around US$ 45,000.

To promote this trend, Andinatel will destine US$ 10 million to invest in infrastructure during this year. Besides, there is the project to enlarge the capacity of Cable Panamericano in which Andinatel is a shareholder. “We are going to buy a large capacity in IRU modality, which will be available in 2009, but we are going to make the investment this year. This will reduce prices significantly for the end user”, Diego Salazar said to Convergencialatina

At present, the optical fiber network of Andinatel has 2,000 Km and a project is being analyzed to close the ring with the connection between Quito and Guayaquil and reach with optical fiber areas where there is no network yet. “It is not defined whether we are going to make direct investments or if we will share resources with providers who already have their network installed. We are going to decide that in the next months”, the manager of Andinanet explained.

Cases

COLOMBIA AND ECUADOR

Arrival of submarine cables reduces connectivity problems

Increase of international capacity will boost competition and development in Colombia and Ecuador, once the costs of connection go down. The companies are also targeting at Venezuela and Uruguay

"In Colombia and Ecuador there is a great need for more international connectivity through submarine cables", pointed out Oscar Fontalvo, Marketing Director of Global Crossing in America. According to the executive, Colombia "has a low penetration of broadband connections particularly due to high costs". The most important limitation is low international capacity. "There are many international companies that want to provide services that require great capacity and a high level of interconnection, but they cannot do it because there is no capacity yet", he said.

Germán Alonso, Executive Vice president of the Voice Business Area of Telefónica Wholesale Services (TIWS) for Latin America and the Pacific, said that "until the arrival of SAM-1, on November 15, 2007, Ecuador only had one cable, the Panamericano. This cable goes as far as Punta Carnero, but it has limited capacity and old technology for the current parameters". In Colombia, he described a similar situation: "the country was connected by three cables: the ARCOS, the Maya, and the Panamericano. The first one is the most important and there have been several cuts lately. It is not possible that half the capacity of a country depends on one cable that was cut four times in the year", he declared.

In response to this kind of indirect criticism received by his company as a consequence of cuts experienced by the ARCOS cable, Paul Scott, President of Columbus Networks, assured that they were caused by vessels that were fishing in forbidden areas and he clarified that they purchased their part of the cable "only in September 2005". "In these two years, we have invested US$ 85 million to strengthen the reliability of the network", he assured. Furthermore, Scott said that, when they took charge of their share, they new that there were areas of the ARCOS that were more vulnerable than others and admitted that there is still much work to be done in this sense.

Representatives of the three companies told Convergencialatina that, in spite of its problems with interconnectivity, the Colombian market is taking off as regards broadband, as well as the Ecuadorian market, though in the latter the process is a little slower.

Therefore, they all have plans for the region. "We are making a capital investment of US$ 75 million in a telecommunications infrastructure for the construction of our new 'direct route' system called Colombia Florida Express (CFX), with a capacity of 2 terabytes. This submarine network will connect Cartagena directly to Florida and will strengthen the telecommunications infrastructure of this Caribbean country and the Andean area", announced Scott.

He also said that today they provide Colombia with a capacity of approximately 30 gigabytes and that this number will increase with the upgrade of the network that is already under way. "The network will be made up of three rings and this will allow us to overcome any cuts that may occur in the future", he concluded.

TIWS began operations in Colombia and Ecuador during the last two months of the year with SAM-1 cable, which, with an investment close to US$ 35 million in Ecuador and US$ 40 million in Colombia, will increase the capacity of international connection of both countries up to 12 times more. Alonso claimed that "this cable has a total capacity of 1.96 terabytes and the company is finishing the third upgrade of its network to be able to provide a capacity of 160 Gbps simultaneously throughout the whole network".

Fontalvo also announced that the company is planning on arriving in Colombia sometime within the next 12 or 24 months. "For example, we are finishing the business case to account for the investment and analyze how we will manage", he said. The options are the following: "Arriving through the Pacific, where our SAC system is located, or building a cable that goes from Cartagena to our station in Panama", he explained. Fontalvo considered that the recent purchase of ISP Impsat will be very useful because it is a very important operator and he estimated that the project will require an investment of US$ 40 million. Regarding Ecuador, he said that it is similar to Colombia, but it can be considered a more virgin territory. He observed that "the problem in that place is that prices are higher due to the lack of competition".

Even though he admitted that the previous arrival of Telefónica will affect the business case of the company, he considered that "given the problems experienced by the ARCOS system, many users are starting to look for alternatives", and he estimated that if they enter through Panama they will do it with a capacity of 40 Gigabytes. However, if they do it through the Pacific, they will take SAC's capacity, which is 180 Gigabytes.

* The Colombian market is taking off as regards broadband, as well as the Ecuadorian market, though in the latter the process is a little slower.

Trends and projects for Latin America

With regard to Latin America in general, Germán Alonso said that the business plan they had considered in 2000 was not feasible in the short run due to the crisis of technological companies, but after four-year stagnation, the demand began to grow. "Today, our billing is growing 25% annually", he said. In this context, they plan to reach Uruguay, a country that currently connects through Argentina. He also declared: "We are aiming at Venezuela".

Oscar Fontalvo, announced that in the second quarter of 2008 they will be landing on Costa Rica, where they already have an alliance with Instituto Costarricense de Electricidad, ICE, (Costa Rican Institute of Electricity). "We are also planning on going to El Salvador, and there is a project to link Central American countries with the optic fiber through the electricity network. When this happens, our connections will support that network", he predicted.

Finally, Paul Scott, stressed the development of broadband in Costa Rica, the East of South America, and Venezuela. "The local State carrier, CANTV, is investing in the development of broadband and having good results", he stated.

CDMA450

2nd Regional Conference 2008

October 20 and 21
Argentina

Further information
eventos@convergencia.com.ar
www.convergencia.com.ar | www.convergencialatina.com

Cases

THE CARIBBEAN

WiMax or 3G: two ways to face difficulties of network expansion

New wireless broadband developments hold a strategic spot in those markets where network lines require an investment that is not profitable and delays the provision of the service

The region offers an interesting panorama for broadband services that do not require any cable to be connected. On the one hand, technology demands several months of testing before it can be put for sale. But on the other hand, whether with 3G or WiMax, it becomes the possible alternative for remote towns, where installing lines demands a substantial investment that it is not profitable and delays the provision of the service.

The Vice president of Nokia Siemens Networks (NGN) for Latin America, Armando Almeida, considers that in 2008, the 'killer application' in 3G will be Internet, mainly based on access cards for laptops and according to the current spectrum of operators. Tigo Paraguay, Millicom's subsidiary, devoted to launching 3G, together with WiMax to cover broadband supply in a market such as that of Paraguay, with a low penetration of fixed networks: COPACO, the State monopolistic company of fixed telephony, has less than 350,000 service lines, with a total Internet penetration of about 2% and less than 10,000 ADSL customers.

In this scenario, José Calcena, Broadband Assistant Manager of Tigo Paraguay, explained that the company applies a segmentation policy in data business based on the purchasing power and coverage levels of the company as regards the different technologies. “In low-income areas, access takes place via mobile technology with GPRS/EDGE, with which we have national coverage and provide speeds of 128 kbps. Next year, we will deploy 3G networks throughout the country. For this medium segment, we offer fixed WiMax, with browsing speeds that range between 64 kbps and 3 mbps. The WiMax offering focuses on the Eastern region, in urban centers with more than 5 thousand inhabitants. Finally, Internet access for the higher segment is through optical fiber. The company has a 1,200 km ring in the Western region that connects three centers: Asunción, Ciudad del Este and Encarnación”.

Wimax in Latin America *as of February 2008*

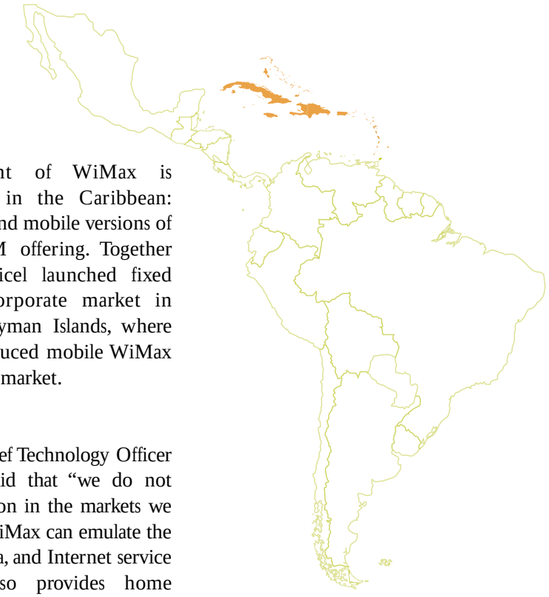
Country	Compnay
Argentina	Telmex
Argentina	Velocom
Argentina	Ertach
Argentina	Alphatel
Bolivia	Tigo
Brazil	Embratel
Brazil	DirectNet
Brazil	Vant
Chile	Telmex
Chile	Entel
Chile	VTR
Chile	Telsur
Colombia	UNE-EPM
Colombia	ETB
Colombia	Cable Unión de Occidente
Colombia	Avantel
Colombia	Orbitel
Colombia	Cablecentro
Colombia	Emcali
Colombia	Teleorinoquia
Colombia	S3 Wireless
Colombia	Comsat
Colombia	Telebucaramanga
Costa Rica	RACSA
Costa Rica	ICE
Ecuador	Setel
Ecuador	Telmex
Ecuador	Tv Cable
Ecuador	Ecutel
El Salvador	América Móvil
El Salvador	Telefónica
El Salvador	Telecom
Guatemala	Yego
Guyana	GT&T
Honduras	Multidata
Cayman slands	Digicel
Mexico	Maxcom
Mexico	Axtel
Mexico	Televisa
Mexico	Telmex
Mexico	MVS
Panama	WiPet
Paraguay	Núcleo
Peru	Telefónica
Peru	Telmex
Peru	WebSky
Peru	Americatel
Dominican R.	Tricom
Dominican R.	Onemax
Dominican R.	Wind Telecom
Venezuela	Omnivisión
Venezuela	Génesis

The lack of development of fixed networks in Paraguay forces to reconsider WiMax concept as a technology with a potential that is limited to niches or emerging markets. In this sense, Tigo used to control 57% of the broadband market in December, and besides, its main competitor is Personal that, after operating with WiMax for a little over a year, will increase its 20 radio bases to a total of 55, which will allow it to cover the whole country.

Unlike Tigo in Paraguay, ONEMAX, of the Dominican Republic, bets completely on mobile WiMax. Today, the company has 1,000 customers and, according to Thian Doan, Vice president of Marketing and Communications, “by the end of 2008, we will have 50 thousand and we will become the second operator”. The executive said that they chose mobile WiMax because, “not only does it speed up the deployment of network with investments that are smaller than those made in cellular networks, but this technology also gives us the possibility to be an alternative for users and cover areas that the competition has not yet reached”.

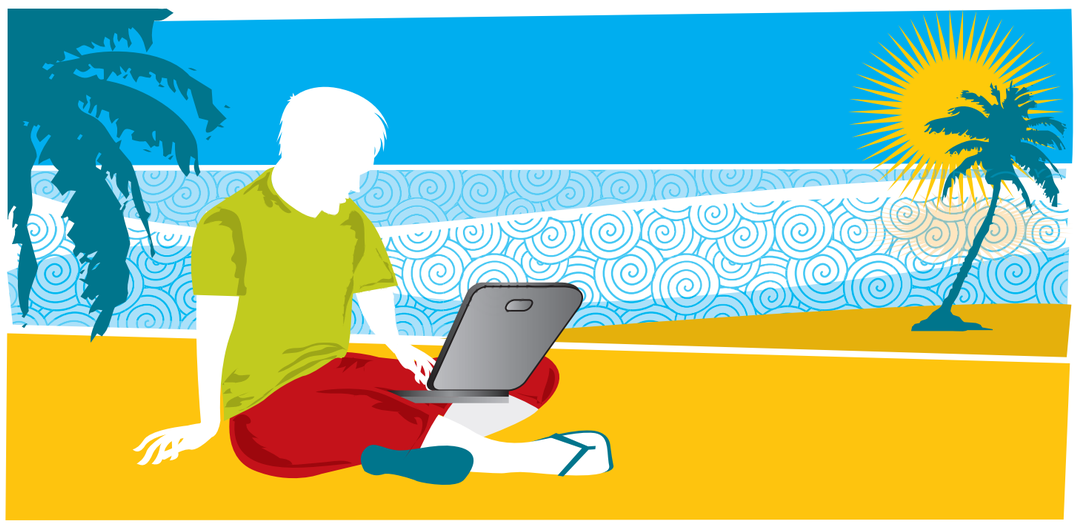
ONEMAX established two investment phases, the first one, until the middle of 2008, involves a disbursement of US$ 100 million that will allow expanding coverage towards the South, East, and Center of the country. The second one will require US$ 50 million more aimed at reaching 80% of national coverage.

* The deployment of WiMax is becoming stronger in the Caribbean: Digicel added fixed and mobile versions of WiMax to its GSM offering.



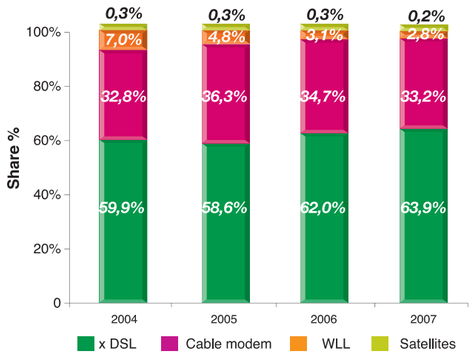
The deployment of WiMax is becoming stronger in the Caribbean: Digicel added fixed and mobile versions of WiMax to its GSM offering. Together with Alvarion, Digicel launched fixed WiMax for the corporate market in Jamaica and the Cayman Islands, where they have also introduced mobile WiMax for broadband home market.

Mario Assaad, Chief Technology Officer of Digicel Group said that “we do not believe 3G is an option in the markets we operate. We believe WiMax can emulate the classic voice, VPN data, and Internet service company, as it also provides home broadband and VoIP services, with the additional benefit of mobility, which will allow expanding broadband market and offering the business sector a different alternative regarding costs, more efficient than the one that exists today”.

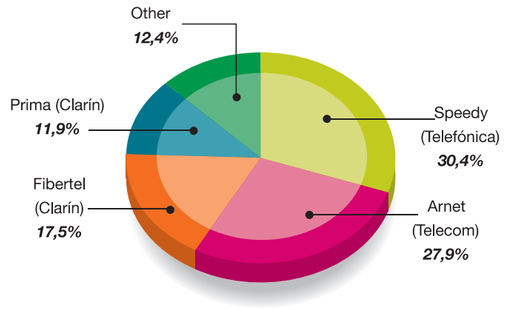


Argentina

Share per technology (2004 - 2007)

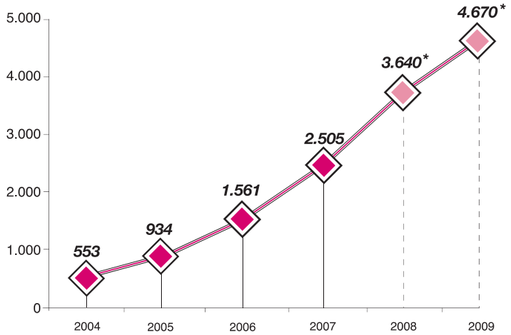


Market Share per ISP (2007)

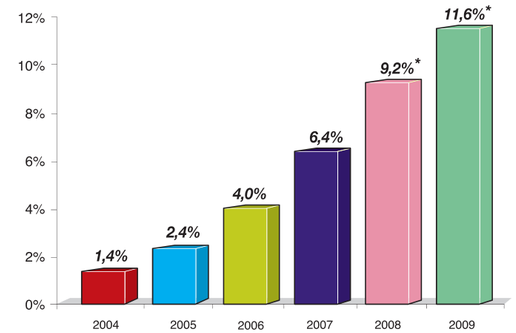


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population



*Forecast

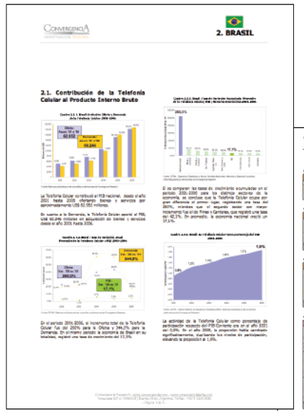
Source: Broadband market in Latin America - Access quarterly tracking.

CONVERGENCIA Research
INVESTIGACION REGIONAL

CONVERGENCIA Research
INVESTIGACION REGIONAL

Intelligence to comprehend market evolution and trends.

Consultancy expertise to capitalize business opportunities in Latin America and the Caribbean.



Ad-hoc studies and consultancy.

Quarterly follow-up on broadband accesses in Latin America and the Caribbean.

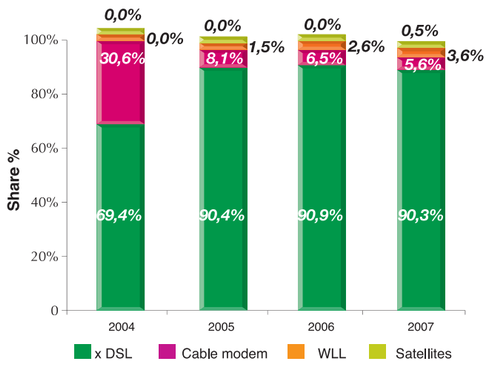
Convergencia Research

Venezuela 637
(C1066AAK) Buenos Aires - Argentina
Telephone +54 (11) 4345 3036

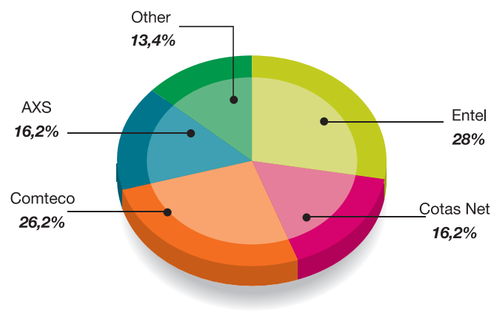
research@convergencialatina.com
www.convergencialatina.com
www.convergencia.com

Bolivia

Share per technology (2004 - 2007)



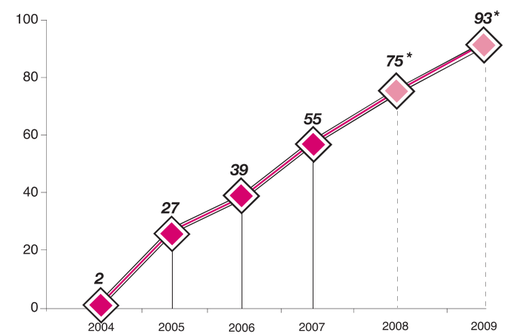
Market Share per ISP (2007)



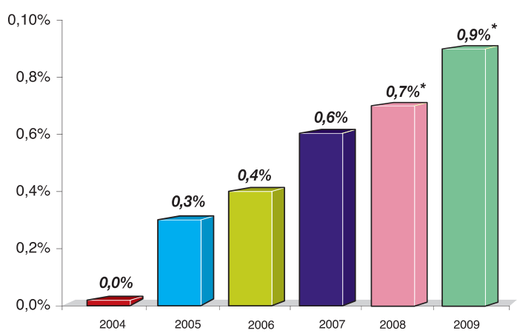
Number of accesses and penetration

(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

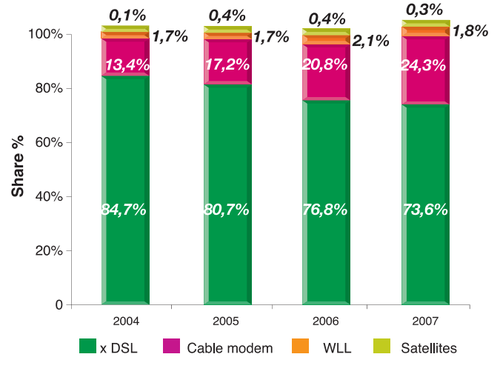


*Forecast

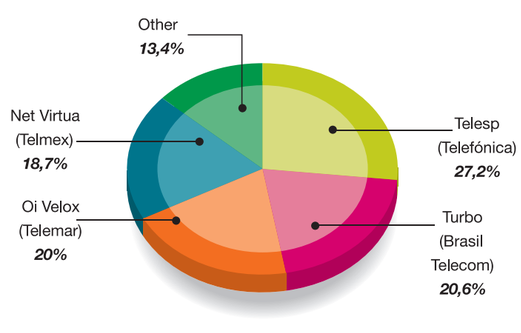
Source: Broadband market in Latin America - Access quarterly tracking.

Brasil

Share per technology (2004 - 2007)



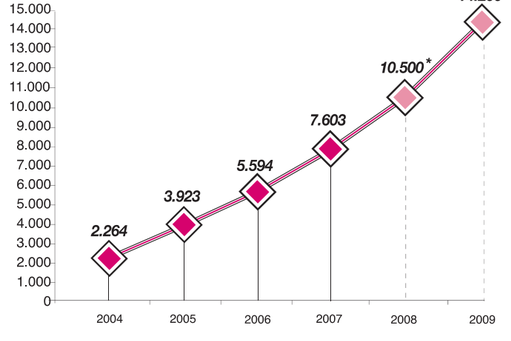
Market Share per ISP (2007)



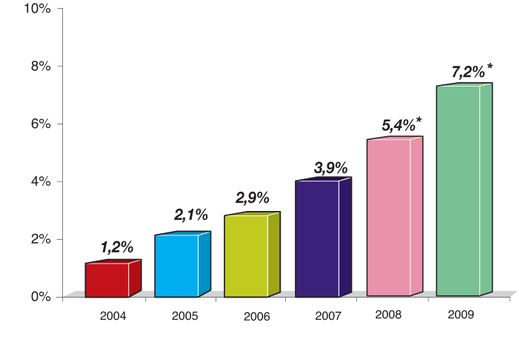
Number of accesses and penetration

(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

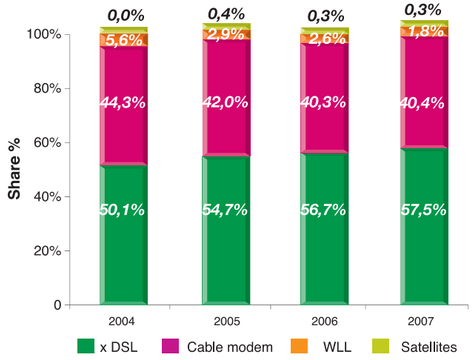


*Forecast

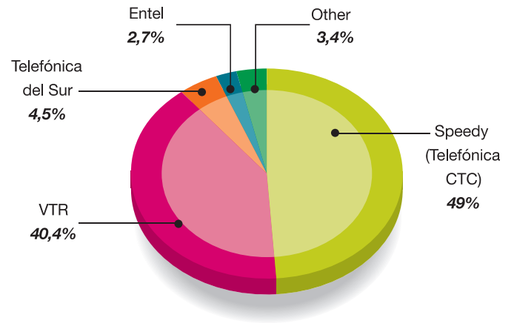
Source: Broadband market in Latin America - Access quarterly tracking.

Chile

Share per technology (2004 - 2007)

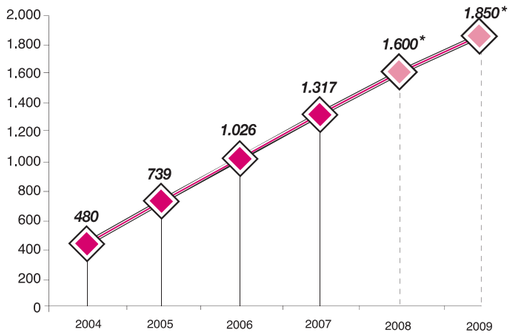


Market Share per ISP (2007)

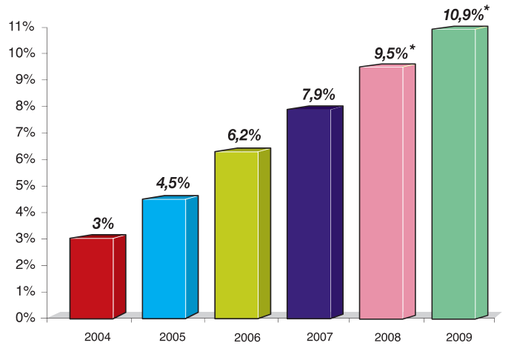


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population



CONVERGENCIA Research
INVESTIGACION REGIONAL

*Forecast

Source: Broadband market in Latin America - Access quarterly tracking.

ABTA2008
FERIA Y CONGRESO
11 AL 13 DE AGOSTO, TRANSAMÉRICA EXPO CENTER, SÃO PAULO, BRASIL

EL MAYOR ACONTECIMIENTO DE TV PAGA Y SERVICIOS CONVERGENTES DE LATINOAMÉRICA.

Los debates más candentes. Las novedades tecnológicas y de contenido.
El espacio más concurrido de exposición y negocios, que repercute en todo el continente. Más de 12.000 visitantes*, de presidentes y CEOs a equipos de venta y relación con el cliente.
Incluya en su agenda la **16ª edición** del evento oficial de la Asociación Brasileña de TV Paga.

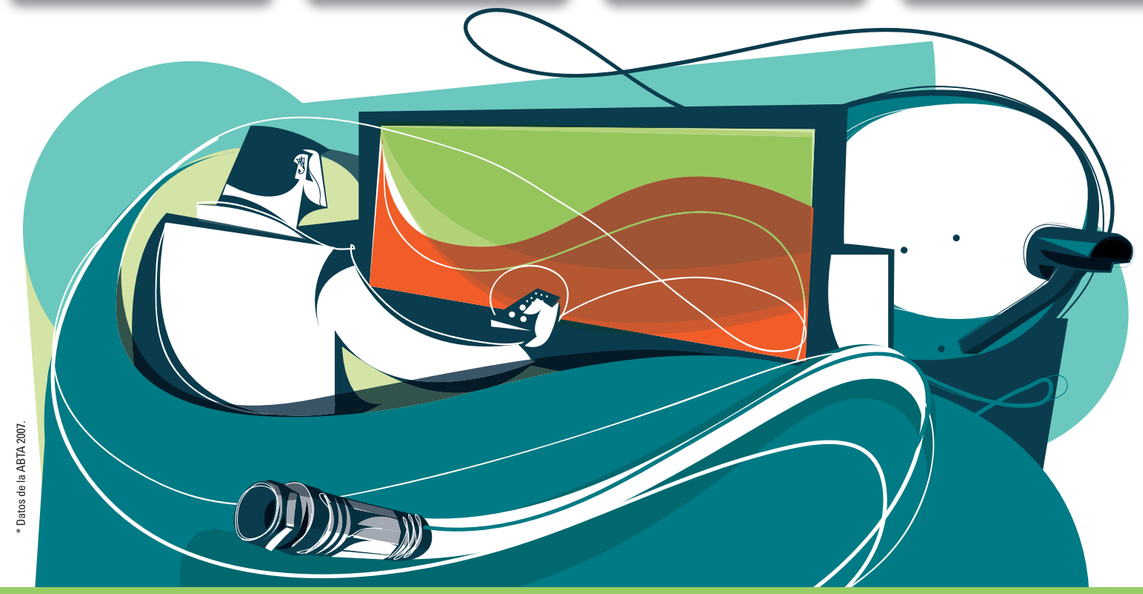
www.abta2008.com.br

ESPACIO ASEGURADO PARA LOS MEJORES NEGOCIOS
Toda la industria de servicios convergentes encuentra en la ABTA el ambiente ideal para negocios, networking y actualización de conocimientos, además de las novedades en equipamientos, sistemas, servicios y contenidos.

EXPOSICIÓN PRIVILEGIADA DE SU MARCA
Comodidad, seguridad y beneficio para expositores, congresistas y visitantes. Nuevas atracciones: área de innovación, espacios Flex, plaza de eventos y mucho más. ABTA. Hace 16 años, una cita inexcusable para los principales actores del mercado.

CONFERENCIAS DE ALTO NIVEL PARA TODOS LOS PARTICIPANTES
Líderes de la industria, autoridades gubernamentales y reguladoras, especialistas internacionales, exponiendo ante la alta gerencia y los equipos de ventas, instalación y relación con el cliente, reunidos en los Seminarios de TV Paga (STA).

TODAS LAS ATENCIONES CONCENTRADAS AQUÍ
Con grandes novedades, presencia numerosa de público calificado y mercado en franca expansión, la enorme repercusión en los medios es una característica natural de la ABTA. No se la pierda. Asocie su marca a un evento también líder de audiencia.



* Datos de la ABTA 2007.

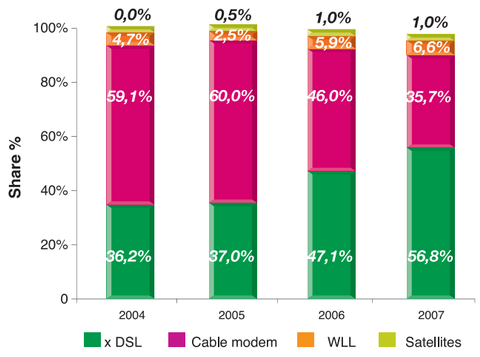
EXPOSITORES CONFIRMADOS:
- AURORA NETWORK
- BAND
- BRASIL TELECOM
- CONAX
- CANAIS ABRIL
- CIANET
- DISCOVERY
- EMBRATEL
- FOX
- GLOBOSAT
- HARMONIC
- HBO
- IRDETO
- MOTOROLA
- NAGRAVISION
- NET SERVIÇOS
- NET BRASIL
- SKY
- TECHNOTREND
- TECSYS
- TELE DESIGN
- TELESYSTEM
- TELSINC
- TURNER
- TVA
- TELEFONICA
- TOPFIELD
- VIACOM

PATROCINIO: BrasilTelecom
REALIZACIÓN: ABTA
MEDIA PARTNERS: Convergencia Latina, Sector TV, Señal Satélite, todotv, TVMAS
ORGANIZACIÓN: Converge Comunicações
PUBLICACIONES OFICIALES: teletime, TELA VIVA, PAY-TV NEWS

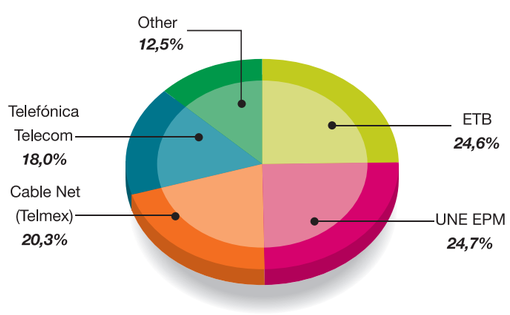
PATROCINIO Y VENTAS (+5511) 3138-4623
comercial@convergecom.com.br

Colombia

Share per technology (2004 - 2007)

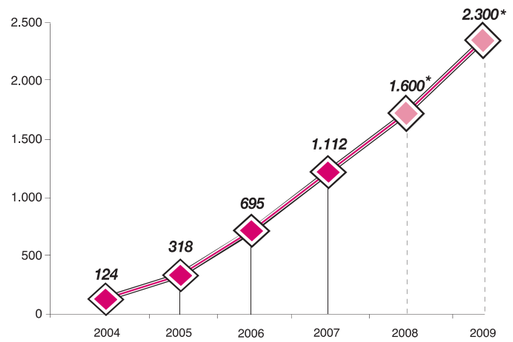


Market Share per ISP (2007)

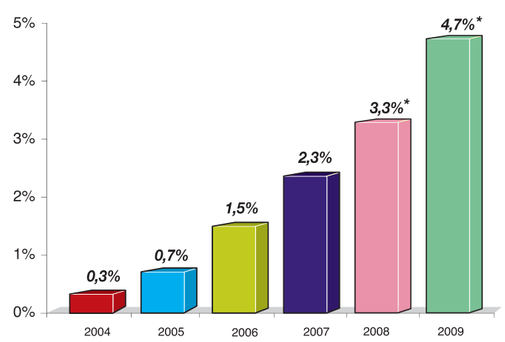


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

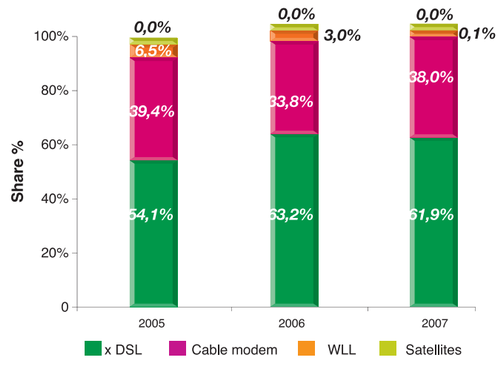


*Forecast

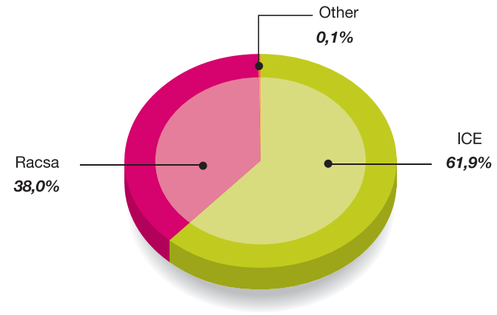
Source: Broadband market in Latin America - Access quarterly tracking.

Costa Rica

Share per technology (2004 - 2007)

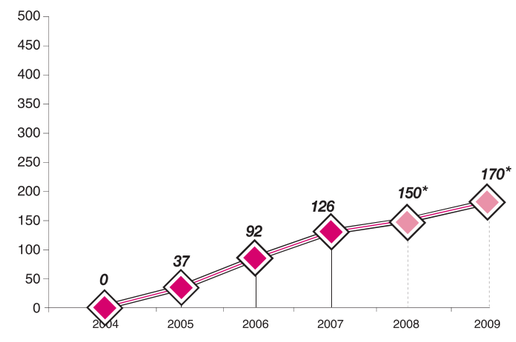


Market Share per ISP (2007)

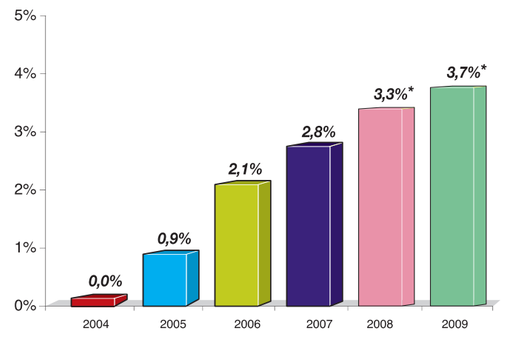


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

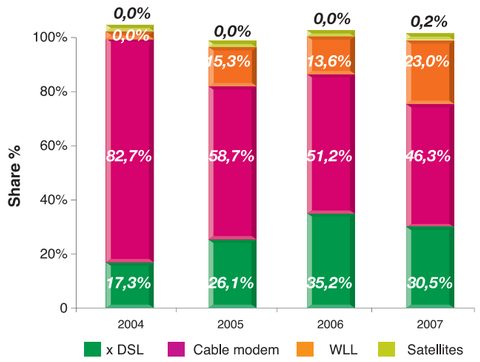


*Forecast

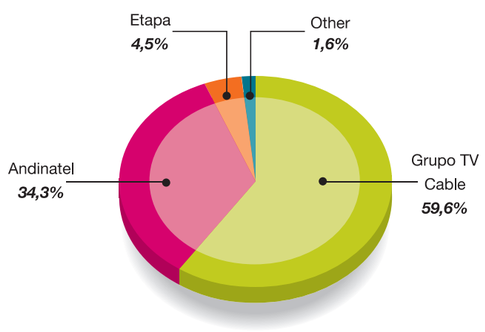
Source: Broadband market in Latin America - Access quarterly tracking.

Ecuador

Share per technology (2004 - 2007)

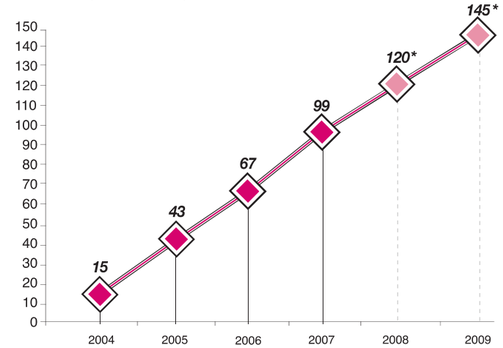


Market Share per ISP (2007)

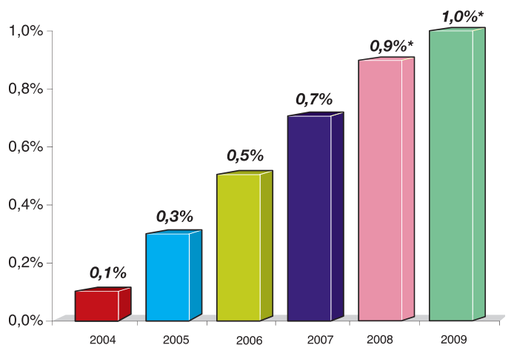


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

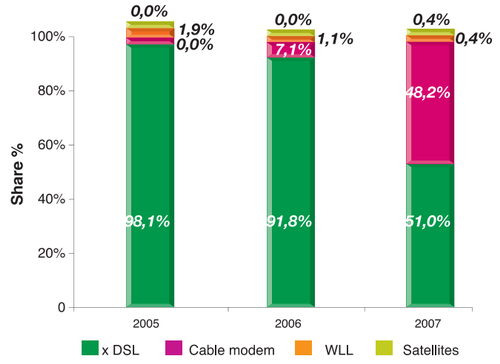


CONVERGENCIA Research
INVESTIGACION REGIONAL

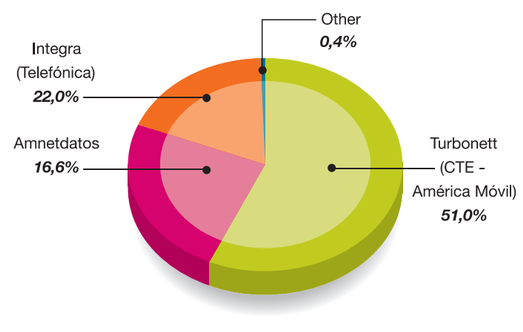
*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

El Salvador

Share per technology (2004 - 2007)

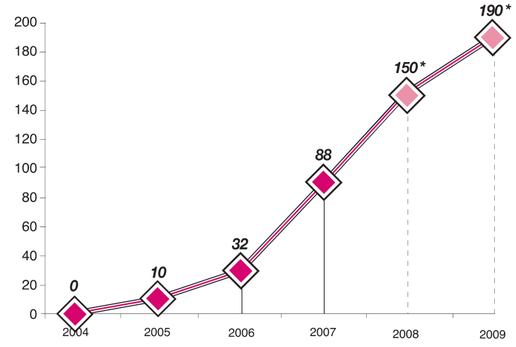


Market Share per ISP (2007)

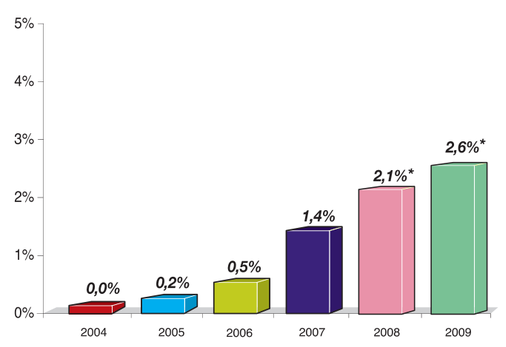


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

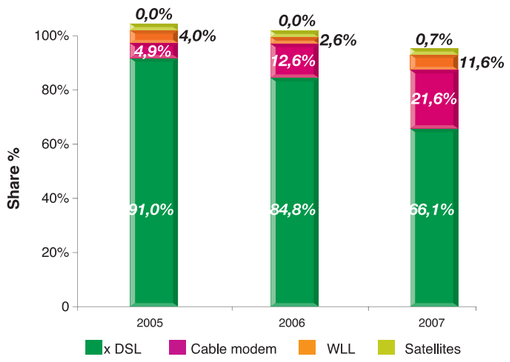


CONVERGENCIA Research
INVESTIGACION REGIONAL

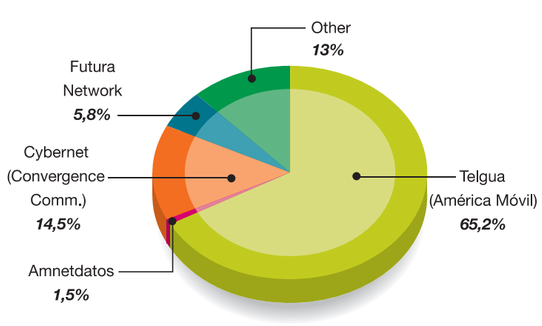
*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

Guatemala

Share per technology (2004 - 2007)

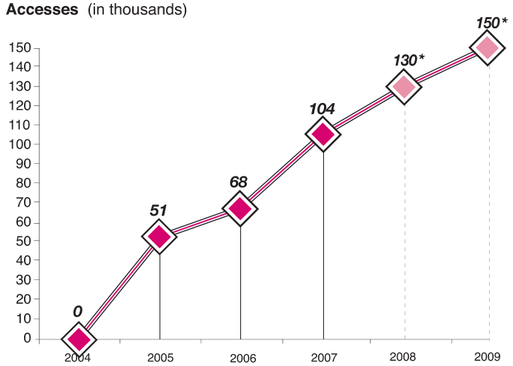


Market Share per ISP (2007)

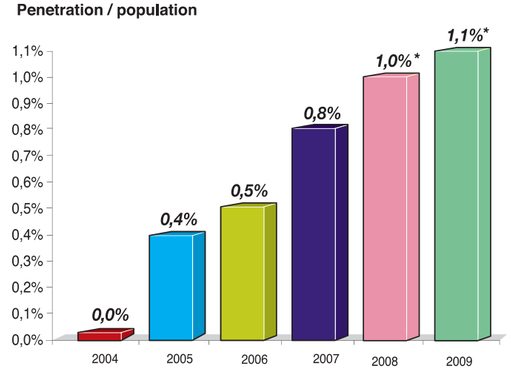


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



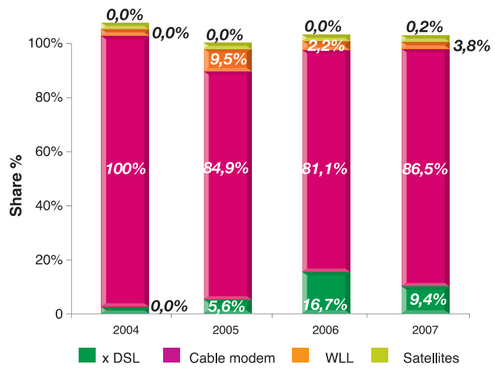
Penetration / population



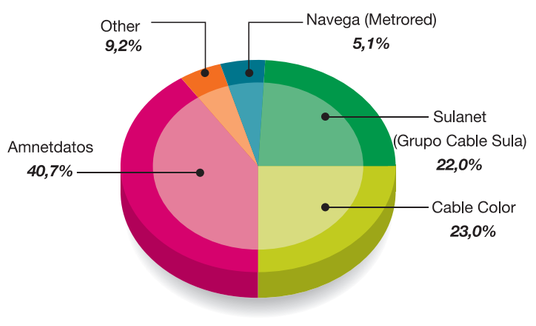
*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

Honduras

Share per technology (2004 - 2007)

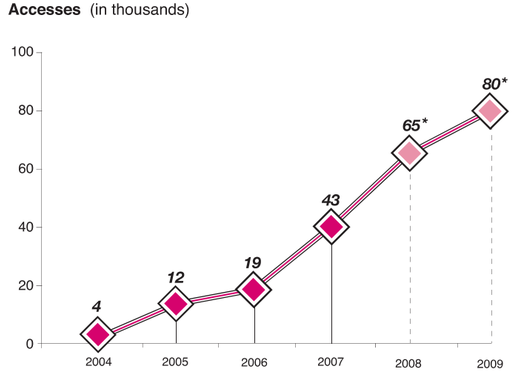


Market Share per ISP (2007)

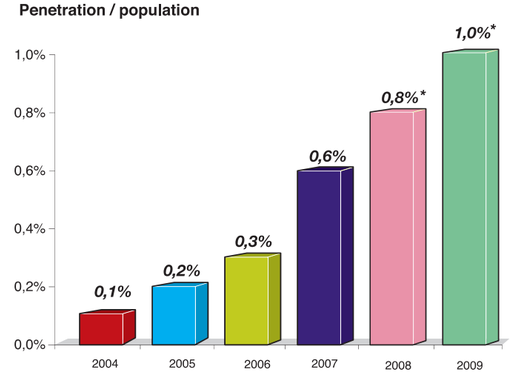


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



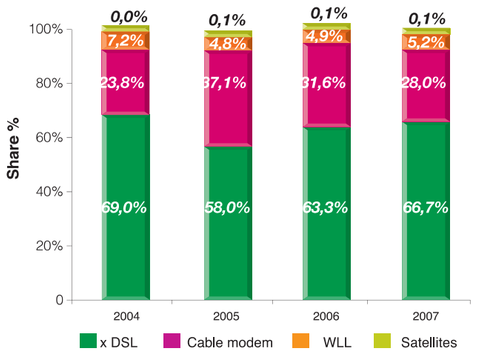
Penetration / population



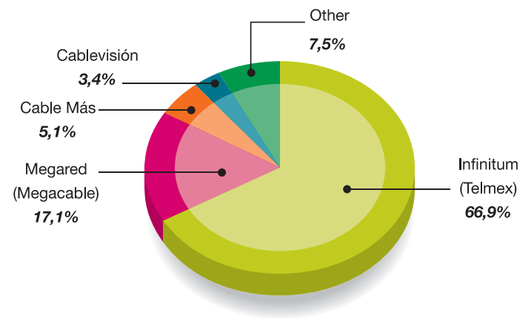
*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

México

Share per technology (2004 - 2007)



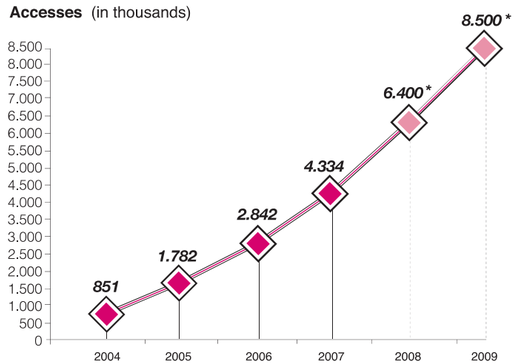
Market Share per ISP (2007)



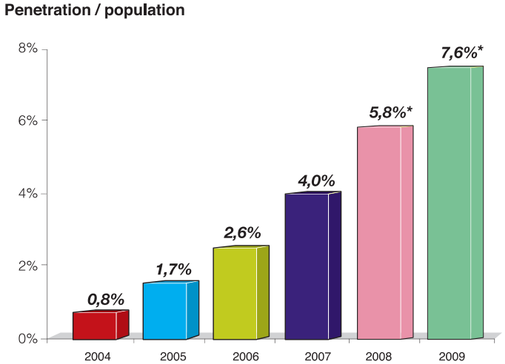
Number of accesses and penetration

(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population



CONVERGENCIA Research
INVESTIGACION REGIONAL

*Forecast

Source: Broadband market in Latin America - Access quarterly tracking.

Brazil's most important events in 2008 have been scheduled. And they have a common signature: Converge Comunicações.

Telecom. Communications and Content. Information Technology.

All three components of total convergence in products and services have been part of our day-to-day activities for 15 years.

Save the dates to be with us in 2008.

May

7th Tela Viva MÓVEL — wireless services and entertainment meeting

13-14 **São Paulo, SP.** Frei Caneca Convention Center
7th edition. Latin America's leading event dedicated to the market in value-added and convergent services for mobile devices.

Jun

9º FORUM BRASIL International TV Market

3-5 **São Paulo, SP.** Frei Caneca Convention Center
9th edition. Latin America's largest independent market for TV content. The event that put Brazil on the world map in audiovisual production.

Jun

3º Seminário CALL CENTER IP

25-26 **São Paulo, SP.**
3rd edition. Discussion of new IP-based applications and how companies can use them to increase flexibility and productivity.

Aug

ABTA 2008 EXHIBITION & CONFERENCE

11-13 **São Paulo, SP.** Transamérica Expo Center
16th edition of the pay TV industry's official annual conference. Survey of the convergent services market in three days of discussions attended by more than 12,000 people. Vibrant expo.

Sep

CONFERENCE TV 2.0

16-17 **São Paulo, SP.**
3rd edition. New ways of watching TV and doing business. What the main players are up to, the impact of new technology, trends in new media. International speakers.

Oct

8º Congresso Latino-Americano Satélites 2008

2-3 **Rio de Janeiro, RJ.**
8th edition. Regulation, challenges and market outlook, all in the only Brazilian event on the satellite industry, attracting attendees from across the continent.

Oct

SEMINÁRIO mobilidade corporativa

21-22 **São Paulo, SP.**
4th edition. Two days of discussions on corporate mobility, focusing on every aspect of mobile solutions, services and products. Impact on corporate productivity growth.

Nov

SEMINÁRIO 2º WIRELESS Broadband — Perspectivas para o mercado de banda larga e celular

12 **São Paulo, SP.**
2nd edition. Leading industry experts discuss implementation of wireless access in Brazil: market potential, political implications, technological challenges, regulation, new solutions.

Information (+5511) 3138.4660
info@convergecom.com.br

Sponsorship (+55 11) 3138.4623
comercial@convergecom.com.br

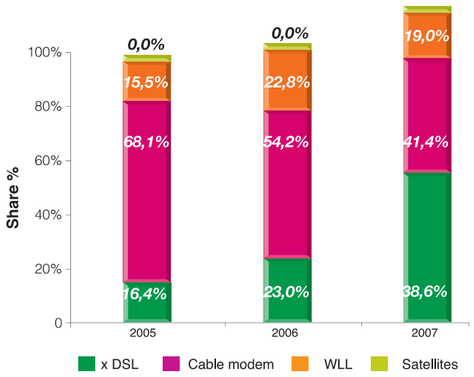
CONVERGE COMUNICAÇÕES

www.convergecom.com.br

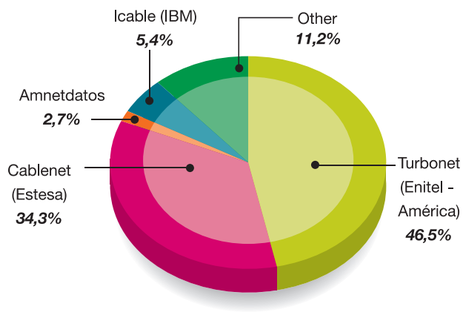
All these events are promoted by the magazines TELA VIVA teletime tiinside

Nicaragua

Share per technology (2004 - 2007)

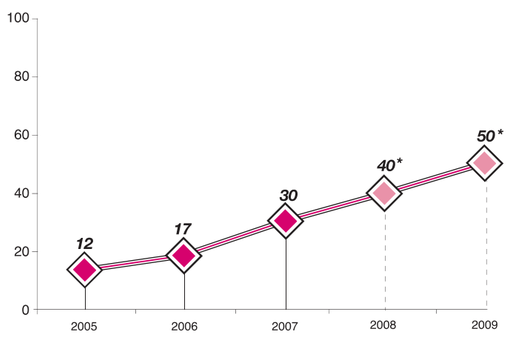


Market Share per ISP (2007)

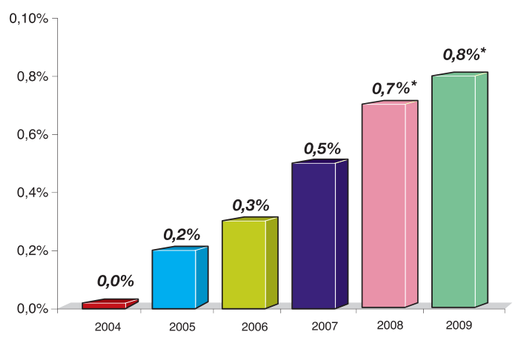


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

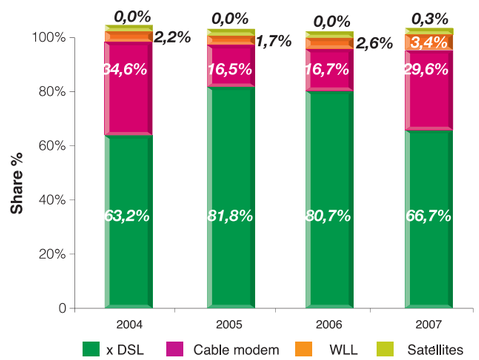


CONVERGENCIA Research
INVESTIGACION REGIONAL

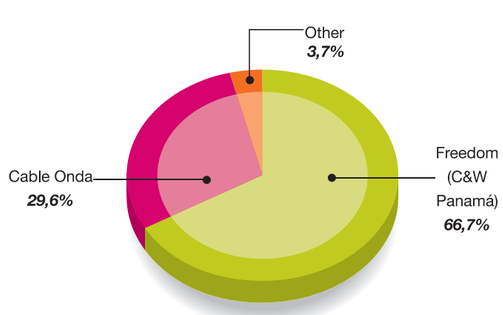
*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

Panamá

Share per technology (2004 - 2007)

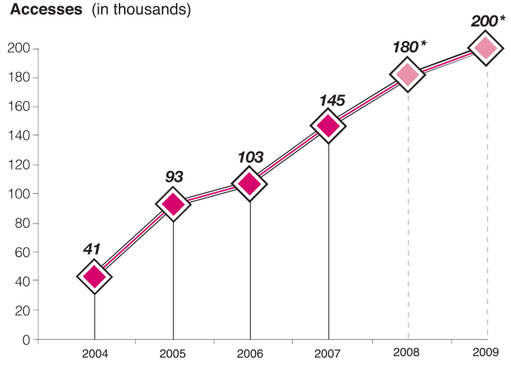


Market Share per ISP (2007)

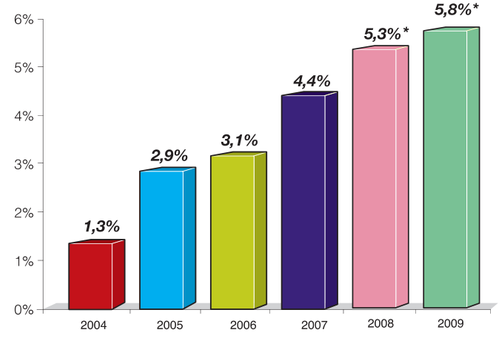


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

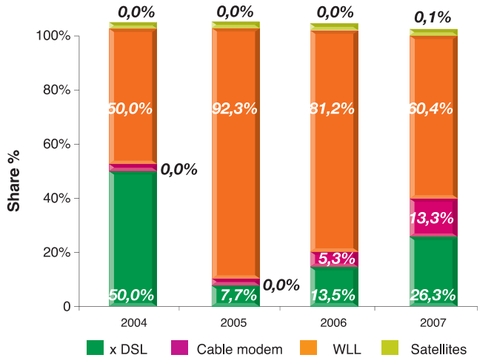


CONVERGENCIA Research
INVESTIGACION REGIONAL

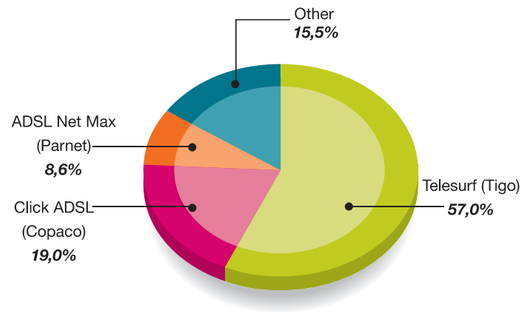
*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

Paraguay

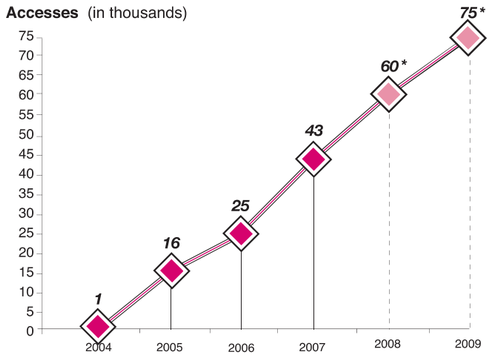
Share per technology (2004 - 2007)

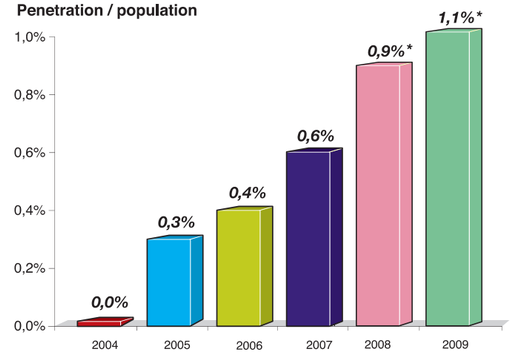


Market Share per ISP (2007)



Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)





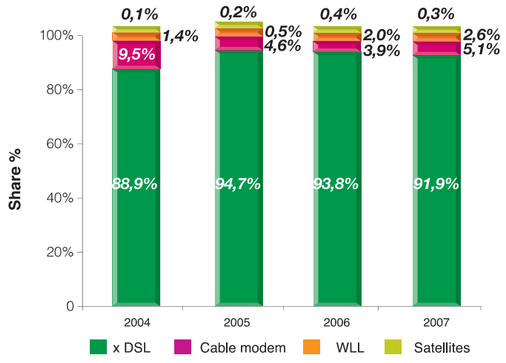
CONVERGENCIA Research
INVESTIGACION REGIONAL

*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

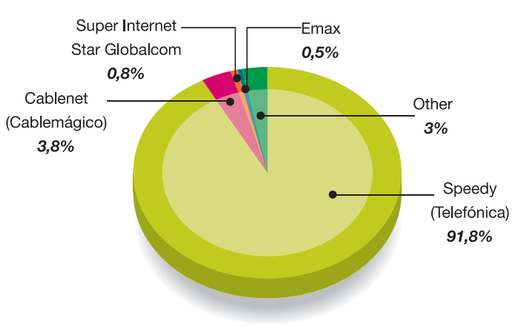
Del 27 al 30 de octubre | São Paulo • Brasil | Transamerica Expo Center
October, 27th to 30th | São Paulo • Brazil | Transamerica Expo Center
El más calificado evento de Telecomunicaciones y Tecnología de la Información de América Latina
The most qualified Telecom & IT Event in Latin America
futurecom
SÃO PAULO • 10TH EDITION
OCTOBER, 27TH TO 30TH
PREMIUM SPONSORS
Alcatel·Lucent
ERICSSON TAKING YOU FORWARD
MOTOROLA
NEC
QUALCOMM
SIEMENS
TIM Viver sem fronteiras
MASTER SPONSORS
Atlântico
ClearTech
CRP
Padtec
TEKELEC
Trópico
GOLD SPONSORS
COMVERSE
JDSU
STANDARD SPONSORS
ABEPREST
Acision
ADC
ADVA
ADVANTECH
ANDREW
BearingPoint
Berkana
BlackBerry
BPS
Canada
CedarPoint
CommLogik
COMPTEL
D-Link
Digi Voice
DISOFT
EcoCarrier
EVOLVING SYSTEMS
FLUKE networks
GENBAND
GET
hispamar
HUGHES
inmarsat
Intelbras
Xkerax
KHOMP
Leucotron
LG
LHS
LOCAWEB
NAVTEQ
Nilko
NXP
OPENET
Orga Systems
Parks
PT Inovação
RAD data communications
RFS
Seal Telecom
SES NEW SKIES
STARENT
TELEMONT
TRANSITION NETWORKS
TRIAD SYSTEMS
veraz
wedo
Para inscribirse em el Seminário Internacional:
www.futurecom.com.br
To register for International Seminar: www.futurecom.com.br
futurecom
Organización y Promoción: Organized and Promoted by: Provisuale

Perú

Share per technology (2004 - 2007)

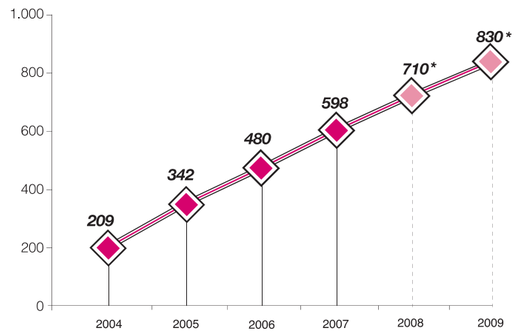


Market Share per ISP (2007)

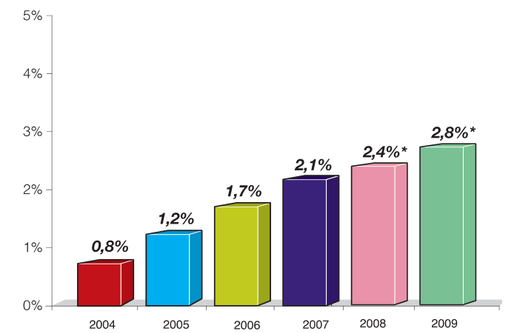


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population



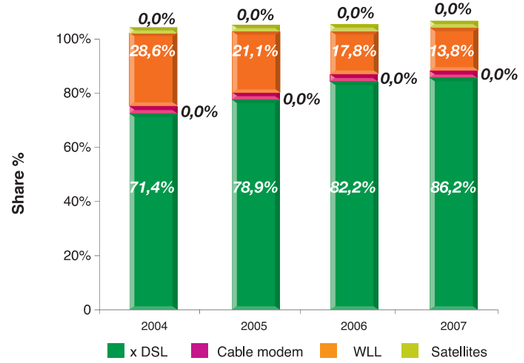
CONVERGENCIA Research
INVESTIGACION REGIONAL

*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

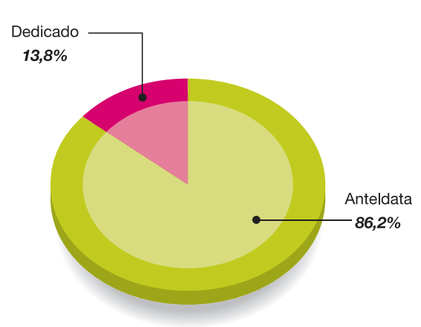
Statistics

Uruguay

Share per technology (2004 - 2007)

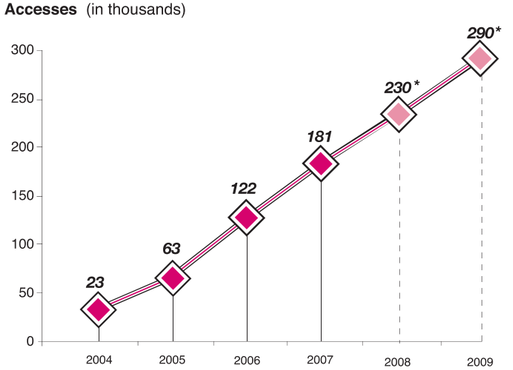


Market Share per ISP (2007)

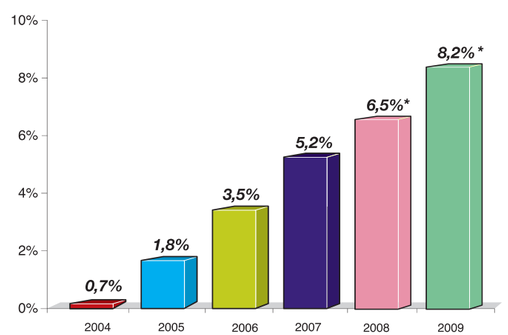


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population

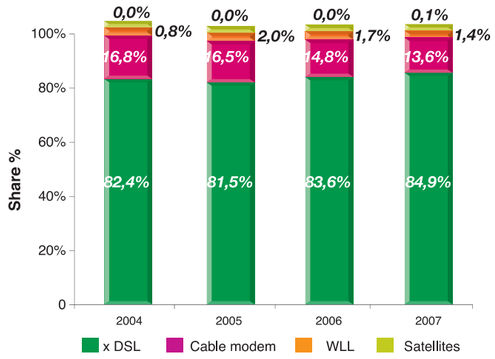


*Forecast
Source: Broadband market in Latin America - Access quarterly tracking.

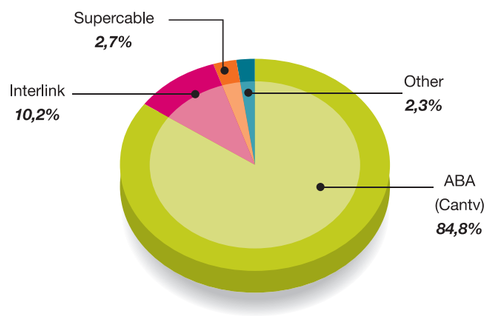
CONVERGENCIA Research
INVESTIGACION REGIONAL

Venezuela

Share per technology (2004 - 2007)

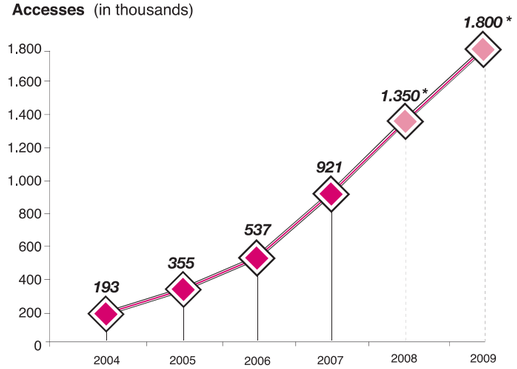


Market Share per ISP (2007)

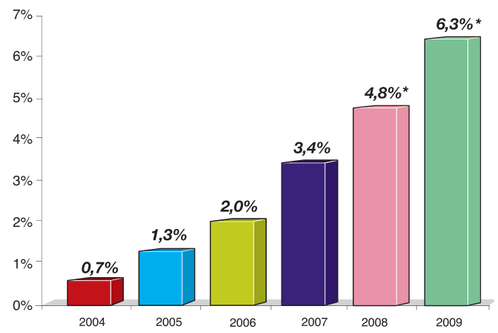


Number of accesses and penetration
(evolution 2004-2007 / Forecast 2009)

Accesses (in thousands)



Penetration / population



CONVERGENCIA Research
INVESTIGACION REGIONAL

*Forecast

Source: Broadband market in Latin America - Access quarterly tracking.

UNA SOLUCION EFECTIVA, ACCESIBLE Y CONFIABLE PARA OPTIMIZAR SU NEGOCIO

Tecnología fácil, flexible y confiable para su empresa

CANOPY
Motorola Wireless Broadband Platform

MOTOWI4

¿Necesita dar acceso a Internet en algún lugar remoto donde nadie más ofrece estos servicios? Desea crear una red inalámbrica o ampliarla?¿Conoce el estado de su Red actual? Contáctenos para asesorarlo en la mejor solución inalámbrica para su empresa
broadbandsales@brightstarcorp.com o visítenos en: **www.brightstarcorp.com**

Brightstar

BRIGHTSTAR CORP MIAMI
Ofic: 305-421-6000
BRIGHTSTAR ARGENTINA
Ofic: 54114016-8100
BRIGHTSTAR BOLIVIA
Ofic: 591 3 312 1448 / 49
BRIGHTSTAR BRASIL
Ofic: 55 11 5105-7300
BRIGHTSTAR COLOMBIA
Ofic.: 571-404-6919
BRIGHTSTAR CHILE
Telefax:562-750-2200
BRIGHTSTAR DOMINICANA
Ofic: 809 560-1277
BRIGHTSTAR ECUADOR
Ofic: 593-22483830
BRIGHTSTAR EL SALVADOR
PBX.: 503 2223 6399
BRIGHTSTAR GUATEMALA
Ofic: 502-23665734
BRIGHTSTAR MEXICO
Ofic. 52 55 53667150
BRIGHTSTAR PARAGUAY S.R.L.
Telefax: 595-21550506
BRIGHTSTAR PERU S.R.L
Ofic: 511-513-6060
BRIGHTSTAR PUERTO RICO
Ofic: 787-653-5000
BRIGHTSTAR URUGUAY SA
Ofic: 598-900-0661
BRIGHTSTAR VENEZUELA
Ofic: 58212-2359933

2007 Brightstar Corp. Todos los derechos reservados. Prohibida la reproducción parcial o total de este material sin aprobación por escrito. Las marcas de productos Canopy, MotoWI4 mencionadas son propiedad de sus titulares respectivos.

The Emerson logo is a trademark and a service mark of Emerson Electric Co. © 2004 Emerson Electric Co.

CONSIDER IT SOLVED™

Network Power • Process Management • Climate Technologies • Storage Solutions • Industrial Automation • Motor Technologies • Appliance Solutions • Professional Tools