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CONTENTS

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Connections

From the Editor-in-Chief's desk 2
by Fredric J. Morris

Imprint 2

Subscription 40

Advertisements

Keymile IFC
Futurecom 5
Broadband World Forum 2010 10
Iraq Telecoms 21
TurkmenTel 26
Capacity North America 33
O3B Networks IBC
Embratel OBC

National development

Interconnectedness and interconnectivity - a global reality 3
by Hon. Daryl Vaz, Minister with responsibility for Information, Telecommunications & Special Projects, Jamaica

National development

Connectivity: progress, achievements and challenges in Peru 6
by Guillermo Thornberry, Chairman of the Board, Organismo Supervisor de Inversión Privada en Telecomunicaciones (OSIPTEL)

Regional development

ICT and development in Latin America, 8
by Hector R. Alonso, Managing Director for Global Crossing Latin America

Telcom development

Networks for Latin American development 11
by Brian Troesch, Sr. VP of Sales and Marketing, and Business Development, Arbinet Corporation

Mobile Internet

Mobile Internet in Brazil - a fast path to digital inclusion 13
by Rogerio Takayanagi, Chief Marketing Officer, TIM Brasil

Wireless web

Latin America's wireless transition - learning from others 15
by Alberto Barriento, VP & General Manager, Latin America & Caribbean and Jose Del Risco, Sales Solutions Manager, Latin America & Caribbean, Tellabs

Handset development

The Smartphone experience for a broader audience 17
by Flavio Mansi, Senior Vice President and President of Qualcomm Latin America

OSS/BSS

Delivering triple-play service bundles 19
by Alejandro Couce, Head of Sigma Systems CALA Region

Connected testing

Testing global connectivity and connectedness 22
by Jack Rozwat, General Manager Latin America Region, Agilent Technologies, Inc.

Connectivity

Connectivity in Latin America 24
by Geoffrey Biddulph, Director of Latin American sales at PCCW Global

Prepaid roaming

Prepaid roamers in a seamless home environment 27
by Amit Daniel, VP Marketing at Starhome

Mobile TV

Mobile TV in Brazil and Latin America 29
by Alon Ironi, Co-founder, CEO & President, Siano Mobile Silicon

Voice/SMS convergence

SMS and voice convergence in Latin America 31
by Ronaldo Venci, Vice President, CALA Region Sales, Movius Interactive Corporation

Broadband development

Faster than a speeding bullet - broadband growth in Latin America 34
by David Berrios, Manager of Business Development for Latin America, NTT America, Inc.

Commodity broadband

Connectivity as commodity 36
by Rick Woods, VP Americas, Volubill

SMS

Crack the short code - send a message to consumers 38
by Alfred de Cárdenas, Executive Vice President, Americas, Syniverse Technologies

CONNECTIONS

Connections



The pervasive connectivity that wired and wireless working hand-in-hand bring and the growing connectedness of people to their work, to one another, to society in general, to information, services, entertainment... to everything - is a force that is remodelling economies, societies and lives. A massive adoption of new services, new business models and new social universes is underway. It is powered by broadband, new devices, by the 'cloud', Twitter, search engines - and the anytime availability of anything and everything.

Despite localities where telecommunications infrastructure and service access is still poor, mobile penetration in Latin America is rapidly approaching 100 per cent; indeed, there are regions where penetration already exceeds this mark. Even so, the ever-present mobile phone is merely the most visible aspect of the growing

connectivity that is driving profound social and economic changes in Latin America.

The theme for this issue of *Connect-World Latin America 2010* is: *Connectivity and Connectedness*.

Fredric J. Morris,
Editor-in-Chief,
Connect-World



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Interconnectedness and interconnectivity - a global reality

by Hon. Daryl Vaz, Minister with responsibility for Information, Telecommunications & Special Projects, Jamaica

Broadband promotes social and economic development, but requires a legislative and policy framework to foster competition among market players, reduce costs and guarantee quality, access and security. Jamaica is using public/private partnerships to build its ICT infrastructure and seeks to provide an efficient regulatory architecture that will promote competition and guide investments towards underserved areas of the country. Connectivity can provide the tools to transform Jamaica's 'livivity' (local parlance for enhanced quality of living) through new and improved products and services.



The Hon. Daryl Vaz is Jamaica's Minister responsible for Information, Telecommunications & Special Projects. Minister Vaz entered the public sector in 1986 as a young Kingston and St Andrew's Council (KSAC) Councillor. He has been serving as a Member of Parliament for the West Portland Constituency since 2007. The Minister is a well-known Jamaican business leader having served as an executive with Automotive Sales and Rentals; Daryl's Auto Sales and Service, and as a Director of Leeward Investment Limited. Mr Vaz was the Managing Director of Shalimar Jamaica Limited, prior to entering politics.

Mr Vaz was the Founding President of the Jamaica Used Car Dealers Association. He is also a former Director of the Jamaica Lottery Company.

Mr Daryl Vaz is a graduate of Campion College and the Miami Dade Community College.

The current global challenges highlight the inter-connectivity and inter-dependence of Governments, private enterprises and the wider society. Public policy concerns in the developed world regarding unemployment, carbon emissions and public sector deficits are invariably linked to challenges in the developing world and include such issues as sustainable poverty reduction, climate change, rural development and reducing crime. Within this scenario, is the 'bread and butter' challenge for information whilst simultaneously preparing economies and whole societies to develop capacities, participate in the Information Society and reap the benefits of game-changing technological developments. Progress in ICTs holds unprecedented power to connect and transform individuals, businesses and societies. As Minister with oversight responsibilities for Information and Telecommunications and responsibility for Special Projects, harnessing

ICTs to drive efficiency in the public sector, empower the people of Jamaica, facilitate growth and development of the economy and achieve a cohesive knowledge-driven society is my passion.

The global perspective informs policy formulation and provides a ready frame of reference while mapping our own journey. When we consider that as at December 2009, 1.04 billion persons globally had either wireless or wireline broadband subscriptions,¹ we are able to appreciate that in the information age there is a structural change in how services and goods are demanded and provided globally. Broadband provides infrastructural support to a whole ecosystem for greater commercial activity and touches all the vital organs of a functional society. Consequently: "Countries communities, corporations and individuals that lack easy access to broadband may miss economic

and social opportunities"². Furthermore, we should consider that the vast majority of these broadband subscriptions are held by individuals living in developed countries or high-income areas of developing countries and, as such, exercise control over global buying and spending power. Thus expansion of broadband access to underserved and unserved communities and countries will expand avenues and opportunities for social and economic mobility.

The ecosystem - connecting the dots

Broadband access can support a local content and delivery ecosystem - once minimum transmission speeds are achieved the development of applications, local content and the delivery of services become possible.

Prior to 2007 the market for applications on mobile phones did not exist, now this market is

¹ *Building Broadband: Strategies and policies for the developing world*

² *Ibid*

likely to grow to US\$40 billion per annum by 2014. With the development and expansion of third and fourth generation broadband networks, consumers are able to pay for goods and services, connect to essential services, receive news and exchange contact details from a single mobile device. The implication for businesses, especially small- and medium-sized enterprises, is that they can now develop global brands and sales forces without investing in expensive brick and mortar establishments. For Governments, these applications create, inter alia, new portals for information sharing with populations, delivery of services and efficient tax collection.

Yet whilst broadband enables business development and is a key tool in information sharing, it requires a sound legislative and policy framework to ensure and promote:

- competition among market players so as to ensure minimum connection charges and highest data transfer qualities to consumers;
- universal service or last mile access so that each constituent can benefit from the offerings of the network; and,
- online security

The Jamaican experience

The Government of Jamaica has long recognized the transformative effect of wide scale adoption of ICTs as part of daily activities. However, having achieved universal access to telephony, Jamaica has moved beyond the issues of tele-connectivity and tele-density towards the more mature concerns of upgrading existing networks, expanding access to broadband and providing an adequate framework for the development and integration of applications into business processes and social activities.

The model adopted by the Government of Jamaica to facilitate the delivery of high capacity networks throughout the island is one of partnership with the private sector. Within this partnership the Government seeks to provide an efficient regulatory architecture that will promote competition and guide investments towards underserved areas of the country. The policy has met economic success in the first instance, as evidenced by the performance of Foreign Direct Inflows (*FDI*) into the sector between 2001 and 2008. Approximately US\$80.9 million per annum or 12 per cent of total *FDI* flows went to ICT-related infrastructure. More importantly, however, a sophisticated system of broadband infrastructure is provided by the island's three major telecommunications networks, which now blanket the country with third and fourth generation network coverage and packages which target all income brackets. In addition, 60 per cent of broadband coverage has been achieved without Government intervention

and submarine cable is also being laid to create sufficient diversity and reliability to attract large users of ICT. This is in keeping with the country's vision to be the hub of the Caribbean for ICT infrastructure as well as ensuring continuous connectivity to the global economy.

These developments bring us closer to achieving universal access and it is our expectation that local talent once distanced from the ICT platform (which is at once a cheaper means of production, promotion and interaction) will account, for inter alia, exponential growth in our creative industries; expansion in our agricultural and tourism sectors; increased innovation; new markets and the creation of a knowledge-based society.

Already, the applications on high data capacity networks are challenging conventional local business practices. In the area of marketing, as of August 29, 2010, 363,380 people, approximately 14 per cent of the Jamaican population, had a Facebook profile. In response, many Jamaican businesses have created fan pages advertising services and goods for sale. The Jamaican banking sector leads the Caribbean region in the deployment of mobile banking services allowing customers to have round-the-clock connection to banking and financial information worldwide. Government ministries, agencies and departments have also begun to use the social networking tool as a valuable part of their information exchange and as a strategy for promoting social cohesion.

Connecting Government and connected people - securing the future

The Government is committed to the "principle of joined up Government" and, through work led by the Public Sector Transformation Unit, a Govnet is being established. We expect that the Govnet will:

- drive the public sector modernization process;
- bring the citizenry closer to the decision-making table;
- forge new connections within and between ministries, departments and agencies and the public that they serve;
- deliver services in a timely, efficient and cost-effective manner.

Further, the regulatory environment is being overhauled to minimize administrative requirements to promote increased entry of service providers and allow for greater consumer choice across the island. Focus is also placed on encouraging co-location; continued efficient and effective management of the spectrum; and more rapid deployment of broadband networks to remote areas of the country.

The Government is also committed to facilitating the provision of Universal Access and accepts that the concept of universal service requires attention beyond physical access to inclusive and enabling elements such as information literacy and financing for the creation and use of content and applications.

Our policy and legislative framework emphasises connecting schools, post offices and libraries to improve access and drive demand for ICTs. This should galvanise communities to explore new areas, improve their productivity, develop and exploit expertise and, as well, build upon competitive advantages within groups and sectors. Concomitant with this thrust, in an effort to build confidence in online systems, Jamaica has passed E-Transactions and Cybercrimes legislation. Jamaica will soon introduce its Data Protection Act and amend the existing Copyright Act to bring it fully in line with technological advances in the realm of copyright. These initiatives are buttressed by our work with the International Telecommunications Union to strengthen our capacity to address cyber threats. Equally, efforts are underway to modernize the provisions of the patent law.

ICTs are a general-purpose solution for all sectors of the economy and with increased connectivity, sustained growth will occur. Achieving increased global competitiveness is paramount in the framework for establishing Jamaica as the regional ICT hub in the Caribbean. We envision ICT as the common thread in charting a progressive path for the country that will enhance successes already achieved. We have already seen tremendous appetite for the technology and have demonstrated capacity in innovation. The latest demonstration was the success of Jamaica's Xormis team at the Microsoft Imagine Cup competition, where they took the top award in the Interoperability category. This achievement energized the academic and software development communities throughout Jamaica.

The Government continues to work towards the national vision of making Jamaica the place of choice to live, work, raise families and do business. A technologically enabled society will contribute to making Jamaica's economy prosperous, secure, cohesive and just; it will also improve Jamaica's adaptability to climate change and, as well, increase access to world class education and training thereby empowering Jamaicans to achieve their potential. Connectedness and connectivity provides the tools every individual and every community needs to express their creativity and transform Jamaica's 'livity' (local parlance for enhanced standard and quality of living) through new and improved products and services. ●



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Connectivity: progress, achievements and challenges in Peru

by Guillermo Thornberry, Chairman of the Board, Organismo Supervisor de Inversión Privada en Telecomunicaciones (OSIPTTEL)

Connectivity to accelerate national development is one of Peru's main policy goals, and the participation of the private sector in a fair and competitive environment is essential. OSIPTTEL's (the *Supervising Agency for Private Investment in Telecommunications*) reliability, autonomy and technical specialization have been essential in promoting new technologies to further Peru's socio-economic development. Policies that favour the use of new technologies and that promote and provide guarantees for private investment have boosted Peru's mobile penetration to 90 per cent.

Guillermo Thornberry is the President of the Board of Directors of the Supervising Agency for Private Investment in Telecommunications (OSIPTTEL, in Spanish). Mr Thornberry is also President of REGULATEL (Latin American Forum of Telecommunication Regulators) and the Vice President of the Permanent Consultative Committee I (PCC.I) of the Organization of American States (OAE).



Mr Thornberry's service in other public sector positions includes: National Deputy Head of the National Registry of Identification and Civil Status (RENIEC); President of the Board of Directors of the Supervising Agency for Investment in Energy (OSINERG); and Advisor to the Minister of Economy and Finance of Peru. In the private sector, he has served as Director of Business Institutions, as Professor of Universidad del Pacífico and Universidad Católica del Perú, and Associate Attorney in different law firms. Mr Thornberry also served in the United States as Executive Vice President of Information for Investment Decisions I.I.D.; Senior Consultant of Nathan Associates Inc.; Consultant of the World Bank Economic Development Institute in the United States and Cairo, Egypt; Advisor to the Ministry of Finance and Planning in Kenya; and Regional Deputy Director for Latin America and the Caribbean of the International Development Research Centre (IDRC). He is the author of an extensive list of publications and research works.

Guillermo Thornberry holds a Master in Philosophy from the University of Cambridge, England, in Economic Development. He has pursued specialization courses and programmes at Harvard University, Cambridge, Massachusetts and at the Center for Advanced National Studies (CAEN), Lima - Peru, among others.

Connectivity is one of the main policy goals of the Peruvian Government. Connectivity will accelerate Peru's national integration and promote the articulation of the largest number of inhabitants in the process of modernity and sustainable development. To meet this goal, which refers not only to telecommunications, but to the entire infrastructure needed to connect a country with a very complex geography, we have

the participation of the private sector and a priority for public investments in areas which do not attract investors.

In the case of telephony, the operating companies for all services belong to the private sector and carry out their activities based upon concessions granted by the Government. The sector has had very favourable results because Government

policies favouring the market and free competition have created a new environment for the sector's development.

The investments made, along with regulatory policies in the sectors of telecommunications, highways, electricity, ports and airports, have changed the face of Peru and have facilitated the development of the Peruvian economy in domestic and international markets.

“Since Peru’s national, regional and local Governments are all involved in the complex task of building a modern, efficient, telecommunications system, coordinating the deployment of a nationwide infrastructure that meets the requirements of all three requires sustained effort.”

The country’s progress is reflected in the growing number of public service users and in the number of population centres that are now equipped with the facilities needed to stimulate production and employment.

Stable Governmental policies that promote and provide guarantees for private investment, along with ongoing regulatory adaptation to take advantage of such rapidly changing technologies as telecommunications, have been quite successful. Peru, with its population of nearly 29 million people, had close to 26 million cell phones at the end of March 2010. Thanks to Peru’s public policies, its goal of connecting a very high percentage of the population using modern technologies has been met. Today, over 80 per cent of the national territory is connected by mobile telephone services. The country’s goal of quickly integrating Peru’s rural and isolated areas, which until a few years ago had little - if any - telecommunications, is being met by promoting fixed wireless telephony.

Peru’s policies are implemented within an environment that fully respects the service concession grants, the applicable market laws and regulatory policies. Peru has also been successful in balancing the legitimate expectations of corporate profitability and the users’ rights to competitive rates and quality services.

Peru is now drafting a National Broadband Plan for subsequent approval. The idea is to create the infrastructure needed to foster an Information and Knowledge Society and prepare the country to take full advantage of the opportunities and advantages that technological innovation brings.

The market is changing rapidly in response to the growing use of smartphones, the availability of advanced services and increasingly attractive rates; connectivity in Peru is rapidly moving forward both quantitatively and qualitatively.

This entire process has demanded a great technical effort from the telecommunications regulatory agency. OSIPTEL’s recognised reliability, autonomy and technical specialization have been essential factors in the use of new technologies to further economic and social development in Peru.

OSIPTEL, the Supervising Agency for Private Investment in Telecommunications, has strived since its beginning to develop policies based on the best practices worldwide. OSIPTEL’s goal is to develop a framework that stimulates operating companies to invest in, and develop the use of, today’s advanced convergent technologies and, thereby, help Peru improve its competitiveness in the international arena.

In Peru, connectivity is not considered in isolation, but in the context of a broad range of financial and technological considerations. The Peruvian Government has proactively sought to align its interests with the global leaders of the telecommunications sector. As a result, Peru has occupied a privileged position in the project and development strategies of the largest international operating companies active in the Latin American region.

Besides an active, constructive and innovative participation in the negotiation of service topics in the World Trade Organization, Peru chose to drive bilateral understandings to accelerate the processes and take the lead attracting investments and developing the activities of their operating companies.

The effort to achieve greater telecommunications connectivity to meet development goals has brought new challenges. In Peru, as in many other countries, the regulatory agency has had to take technical and legal measures to identify and register prepaid cell phone users, many of whom did not meet the legal identification requirements due to slack point-of-sales identification procedures. In a joint effort, Peru’s central Government, with the technical, regulatory and supervisory support of the regulator, accomplished the registration of its prepaid cell phone users.

Special attention has been given to telecommunications security, a fundamental prerequisite for the development of such new services as eCommerce. The regulatory agency issued regulations to protect communications security and data privacy. This priority issue - for Peru and the world - is guaranteed by the Political Constitution of Peru, but demands technical instruments to enforce the constitutional and legal obligations.

The control mechanisms used guarantee the rights of communication service users. The control mechanisms include the supervision of telecommunications operators, regulatory compliance measures and technical verifications. These duties are the responsibility of Peru’s Ministry of Transportation and Communications; the Ministry structures and implements the sector’s policies.

The combination of technical measures and a common agenda with operating companies have brought the sought-for results - and new technologies promise even better protection for communications in the future.

Since Peru’s national, regional and local Governments are all involved in the complex task of building a modern, efficient, telecommunications system, coordinating the deployment of a nationwide infrastructure that meets the requirements of all three requires sustained effort. Although, by law, telecommunications infrastructure is national, in practice it is necessary to persuade, coordinate and consult with local and regional authorities to deploy and install any sort of infrastructures for the development of public services. Regulatory agencies and representative entities of the business sector, municipalities and regional Governments must work together within the participatory mechanisms established by Peruvian legislation to democratize Government decisions and efficiently represent the needs of all from public entities to individual citizens.

The user reconciliation process is an important part of the regulatory agency’s quest to achieve efficient connectivity. Accordingly, we seek to obtain the support of Government entities, business entities and citizens to foster progress in terms of infrastructure deployment. Obtaining citizen support of the necessary investment in infrastructure is an important part of the reconciliation process; without investment it is impossible to build the infrastructure for basic services, such as telephony, broadband or cable TV. ●

ICT and development in Latin America

by Hector R. Alonso, Managing Director for Global Crossing Latin America

To compete on an even footing in global markets, Latin America needs to overcome many barriers and reach the levels of ICT penetration seen in developed economies. Governments in Latin America need to invest in their regulatory infrastructures and the facilitate efforts to meet growing demand. It won't be easy; Governments will have to carefully balance their expenditures so they can meet the demand for expanded ICT infrastructure and the equally urgent demands for basic services, infrastructure and socioeconomic inclusion.



Hector R. Alonso is the Managing Director for Global Crossing Latin America; he brings nearly 30 years of international experience to this role. Mr Alonso was named to this post after Global Crossing's acquisition of Impsat Fiber Networks where he previously served as chief financial officer.

Hector R. Alonso holds a Master's degree in International Business from the Universidad Argentina de la Empresa, in Buenos Aires.

What does the donation of a few computers, an antenna and a network connection do for the future of schoolchildren in a rural town in Argentina? It brings them closer to the ever-changing world they find themselves isolated from. So far away from a world almost inaccessible to them due to poor transportation and lack of telephone or Internet service, that the impact virtual connectivity can have on a child can be significant and even life changing. It provides the opportunity for those schoolchildren to become computer literate and to connect with others outside their small town, affording them the possibility to dream and explore educational and future career options they otherwise would not have and which generations before them certainly did not. Thanks to the private sector, this is a scenario that has become a reality for many children throughout the region.

ICT in Latin America

In order to discuss the impact Information and Communication Technology (ICT) has on development in Latin America, it is important to first note its importance in the region. As illustrated in the case of the rural school in Argentina or anywhere in the region, ICT offers greater access to information, education and employment opportunities, increased earning and purchasing power, as well as long-term economic gains, making it an indispensable catalyst for real progress.

In the globalization era, ICT represents rapid economic growth, and improvement of production processes for small-scale farmers and agro-enterprises, as well as businesses of all sizes. It is safe to say that globalization is expected to continue increasing and its effects are going to be felt more and more,

even in the remotest of areas. To survive in this rapidly globalizing world, it is imperative that ICT become a policy priority for Governments in the region, so their people and respective countries can compete in the global economy.

The private sector too has a role to fulfil. It has been an important player in the expansion of ICT, but like Government, it needs to become more of a driving force if it wants to expand into other markets to sell its goods and services. The Internet and emerging technologies have become the key in today's society for the efficient transportation of goods, dissemination of information and provision of services; hence of utmost importance in helping bring down economic barriers and providing access to the latest advancements in all areas of life.

All the United Nations member states and more than 20 international organisations approved eight international development goals, to be achieved by the year 2015. To achieve these Millennium Development Goals (*MDGs*), as they are called, a number of target activities and indicators were defined. One critical target states: “In co-operation with the private sector, make available the benefits of new technologies, especially information and communications.” This target focuses especially upon disadvantaged communities, in an effort to help reduce extreme poverty by 2015.

Government role in ICT expansion

When examining the impact of ICT in Latin America, the benefits are many, but the challenges are also plentiful. Many times ICT expansion or the lack thereof is attributed to a need for Government deregulation, which has only recently been making some limited strides throughout the region. Although deregulation is a major factor in helping foster competition, the lack of quality telecommunication services at reasonable and affordable rates no matter where the location, be it an urban or rural area, is another barrier to ICT expansion.

Although some countries consider ICT investment as a priority and the private sector has shown interest in its expansion, many countries in the region still fall behind other developing nations, specifically in the area of broadband penetration outside of the major cities. If ICT development is to take place, broadband services in the region need to expand. The International Telecommunication Union reported in 2008 that the average monthly fixed broadband connection price was ten times greater in developing countries than the prices in developed countries; this suggests that lack of broadband penetration in these regions is due, in good part, to unaffordable prices. This is a sensitive issue; there is a great need for an equitable balance between competition, the conditions needed for a sustainable industry and consumer protection.

The phenomenon of convergence between the telecommunications and information technology sectors increased during the last decade and is generating a significant impact in our society today. It is often difficult to differentiate between the two sectors because many innovative services reside and are accessed in a decentralized manner. As a result, it is now essential to improve integration and storage of the applications

content in order to distribute it appropriately. This convergence has posed a challenge for regulators and at the same time created greater demand for connectivity among consumers. Convergence is an important factor driving demand for ICT access, but the demand cannot be met without a proper, expanded, infrastructure.

Private sector's role in ICT expansion

The barriers to ICT expansion include a lack of adequate infrastructure, low enrolment in institutions of higher learning, and an insufficient number of technology specialists. The private sector in partnership with universities should take responsibility, as part of their role in society is to encourage and induce students to take up the study of the technologies upon which the future of our civilization rests.

Without human capital and local innovation, development is impeded. There is a risk that the few technologists at the top of their field might be recruited to more technologically advanced nations; this phenomenon is often referred to as human capital flight or ‘brain drain’. It is also of utmost importance that the private sector support ICT expansion and innovation by investing to create greater demand and pressure for competitive prices. Overall, the private sector has the role of bolstering ICT by effectively supporting higher education, by demanding competitive pricing and by fostering fair competition among providers. The private sector can also contribute to the development of a dependable ICT infrastructure as a sustainable platform for continuing economic development.

Latin American case studies

There are a few countries in the region leading the charge in technological advancement. The Latin Technology Index for 2010, carried out by the Latin Business Chronicle, ranks Uruguay as the country with the highest technological level in the entire region, with Panama as second and Chile as third. With Internet penetration at 55.2 per cent, Uruguay rates as Latin America's top country in this area and also has the highest rankings in all the other categories of the index: broadband Internet, personal computers, wireless subscribers and fixed telephone lines. Part of Uruguay's success is explained by the Government's public school CEIBAL programme, which provides free computers to schoolchildren across the country. Thanks in part to an

increase in exports due to their rapidly growing information software industry, Uruguay has shown signs of a speedy recovery from the economic and financial crisis they experienced at the beginning of the decade.

Chile too is among the most advanced countries in the region in terms of broadband penetration. According to the annual Economist Intelligence Unit study, Chile is the country best positioned in the region with regards to digital economy. In Chile, the Government has made ICT a priority with public policies in place such as subsidies for broadband expansion and the deregulation of the technology sector. The private sector has also made it a priority by joining with Government in creating the ‘Digital Agenda’, which aims to increase information technology development as a driving force in Chile's progress, thus making it the only Latin American country among the top 30 countries in the 2010 World Competitiveness Yearbook. Published by the Institute for Management Development (*IMD*), the Yearbook ranks countries based on economic performance, infrastructure, Government and business efficiency.

Future of ICT in Latin America

Given the impact of global ICT expansion, how can Latin America overcome the many hurdles it faces and reach the levels of ICT penetration seen in the US, Europe and parts of Asia and compete on an even footing with the rest of the world? With the global economy picking up, the demand for mobile and broadband services will increase strongly. Companies previously unable or uncommitted to increasing their investments in the industry will do so as the economic upswing kicks in. We will see Governments in Latin America compelled to invest in their regulatory infrastructures to facilitate efforts to meet the growing demand - something they were unable to do prior to the economic downturn. Governments will have to carefully balance their expenditures so that they can both meet the demand for ICT infrastructure and the equally urgent demands for socioeconomic inclusion. Most Latin American countries need long-term plans that earmark funds for investment in ICT so they can compete in the 21st-century global economy and drive the socioeconomic development of their people. Governments and the private sector will have to join forces to guarantee the development of the region's ICT capabilities and its place in the world's markets. ●

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Networks for Latin American development

by Brian Troesch, Sr. VP of Sales and Marketing, and Business Development, Arbinet Corporation

The combination of falling rates and growing traffic is forcing Latin America's carriers and service providers to be more responsive to user demands. They need to leverage technology to drive new revenues and profits, re-configuring their networks to cost-effectively handle increased voice and data traffic. Finding creative ways to trim costs, outsourcing non-core back-office tasks and finding the right partners, can make a tremendous difference by giving regional providers the opportunities to simultaneously grow both traffic and revenues throughout their networks.



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Latin American - tradition and change

Latin America, encompassing South America, Central America, Mexico and the Spanish Caribbean, is fraught with communication issues and hurdles similar to those faced by the rest of the world. Latin American countries continue to review their broadband policies, work to identify solutions to reach rural markets, and continue to seek for ways to increase communication penetration within their countries - including Internet and mobile. The region is not immune to the global financial crisis that has affected the United States and Europe over the past few years, and in some ways, the region

is affected more. Without global business expansions, Gross Domestic Product (GDP) growth depends upon what businesses do locally, rather than upon foreign investors. As the Internet becomes more prevalent in global businesses, the way we communicate and how we communicate are having a major impact on global voice and data communications network systems.

Latin American countries are steeped in tradition and culture. Businesses and people alike depend on communications to share important information, including celebrating life, sharing news and information, and discussing what is happening around them.

Within this deep-set cultural tradition, a communication migration is occurring. This 'communication migration' is not just what information people communicate, it is in the way that they communicate that information. The Latin American communication landscape is evolving and the change agent is the Internet.

El Internet...the great enabler

The Internet is enabling greater communication, particularly across borders. Data communications and global IP networks are providing cost-effective and efficient ways for people to communicate with each

other, no matter where they may be in the world. In the consumer market, the advent of social media (e.g. Facebook), Internet chat and Voice over Internet Protocol communications (VoIP - e.g. Skype) are providing more ways for more people to generate an even greater amount of communication.

In addition, businesses are leveraging more Internet-based communications as well. More and more businesses are taking advantage of lower cost VoIP solutions that can be converged with data communications. As the next generation of Internet-based services, such as virtualization, cloud computing and telepresence make their way into the Latin American culture, there will be greater usage of Latin America's telecommunications infrastructure; this will require further growth and investment.

Furthermore, the Internet makes cost-effective communications throughout the world possible. In April 2010, TeleGeography reported that the cost of telecommunications capacity between the US and Latin America fell 17 per cent. This price fall puts a strain on how carriers and service providers seeking to build out their businesses. Given the growing demand for access and for ever greater capacity, price decline is natural. In June 2010, GlobeNet, a wholly owned subsidiary of Oi, formerly Brasil Telecom, upgraded its 22,000-km cable system that connects the US and Latin America. This expansion added an additional 110Gbps of capacity - per fibre pair.

According to GlobeNet's COO Erick Contag, expansion of the network between North and South America is needed to support the growing demand for content delivered using such new technologies as interactive video, IPTV, gaming and cloud-based applications. With his sight on the Latin American market,

Contag cites the International adoption of IP-enabled applications, including video, social networking sites and peer-to-peer applications as key factors in driving further technological innovation and growth. In support of these observations, Pyramid Research projects that the Latin American region will experience a 40 per cent increase in annual capacity demand in 2010.

Figure 1 below indicates that Latin America currently ranks third, behind Africa and the Middle East, for Internet penetration and growth. However, that growth is still greater than 1000 per cent, which foretells the continued need for additional investment and build-out by regional telcos and global network providers to meet the increasing demand.

Internet usage and Latin American service providers

Thus far, the explosive growth in Internet subscribers and usage has had the largest impact on fixed-line service providers. However, with the introduction of 3G mobile services, this migration has started to affect cellular network providers as well. Analysts, such as Signals Telecom Consulting, predict that by 2014 landline and mobile telephony losses from VoIP are likely to exceed US\$18.4 billion in Latin America. It is this threat that has network operators searching for all possible solutions to halt the potential erosion to their revenue streams. Operators are seeking help from regulators in the form of taxation and regulation of these services and from technologies created to identify and manage or limit these services, such as deep packet inspection. Some operators look for strategic partnerships with supposed enemies, like the one recently struck between Verizon Wireless and Skype.¹

Driving growth in Latin American communications

Frost & Sullivan published a report on May 31, 2010 called Latin American Data Communications Services Markets-2010. This report states that the Latin American data communications services market witnessed moderate growth in 2009. A key driver, according to Frost & Sullivan, is the small and medium businesses (SMB) market segment. Jose Roberto Mavignier, Frost & Sullivan's Industry Manager, commented that the "main drivers for the total market include the GDP growth of each country, the expansion of the SMB segment, the integrated offers of telecom services and IT (such as data centres and voice and managed services), and the development of specific verticals such as Government and finances". The report further states that the total Latin American market is expected to grow at a compound annual growth rate (CAGR) of 7.4 per cent through 2015.

The solution is not simple

The push and pull between declining rates and increased traffic demands force carriers and service providers in the region to be more responsive to the marketplace. It is incumbent upon these providers to find ways to leverage the growing adoption rate of technology in order to aid their own revenue growth projections. It is not always a simple task to configure and re-configure networks cost-effectively in order to handle increased voice and data traffic. Being creative with ways to trim costs, outsourcing non-core back-office tasks and finding ways to identify the right partners can make a tremendous difference in creating regional providers the opportunities to grow both traffic and revenue across their networks, simultaneously. ●

¹ Skype (<http://about.skype.com/press/2010/02/verizon.html>) Verizon Wireless and Skype join forces to create a global mobile calling community, February 16th, 2010

Figure 1

| World Internet usage and population statistics | Population (2010 Est.) | Internet Users 31-Dec-00 | Internet Users 30-Jun-10 | Penetration per cent of Population | Growth 2000-10 per cent |
|--|------------------------|--------------------------|--------------------------|------------------------------------|-------------------------|
| WORLD TOTAL | 6,845,609,960 | 360,985,492 | 1,966,514,816 | 28.70 | 444.80 |
| Asia | 3,834,792,852 | 114,304,000 | 825,094,396 | 21.50 | 621.80 |
| Africa | 1,013,779,050 | 4,514,400 | 110,931,700 | 10.90 | 2357.30 |
| Europe | 813,319,511 | 105,096,093 | 475,069,448 | 58.40 | 352.00 |
| Latin America/Caribbean | 592,556,972 | 18,068,919 | 204,689,836 | 34.50 | 1032.80 |
| North America | 344,124,450 | 108,096,800 | 266,224,500 | 77.40 | 146.30 |
| Middle East | 212,336,924 | 3,284,800 | 63,240,946 | 29.80 | 1825.30 |
| Oceania/Australia | 34,700,201 | 7,620,480 | 21,263,990 | 61.30 | 179.00 |

Source: Internet World Stats (www.internetworldstats.com) Copyright © 2000-2010 Miniwatts Marketing Group. All rights reserved worldwide.

Notes:
 1. Internet Usage and World Population Statistics are for June 30, 2010.
 2. Demographic (population) numbers are based on data from the US Census Bureau.
 3. Internet usage information comes from data published by Nielsen Online, by the International Telecommunications Union, by GfK, local Regulators and other reliable sources.

Mobile Internet in Brazil - a fast path to digital inclusion

by Rogerio Takayanagi, Chief Marketing Officer, TIM Brasil

There are 96.8 mobile phones per 100 inhabitants in Brazil, but Internet access lags far behind. Broadband Internet access is lacking in many parts of the country; it is expensive, and mostly low quality. To increase access and quality requires investments by operators and Government alike. Tax relief is important; taxes amount to 43 per cent of the bill. The demand exists; a coordinated effort by the Government and private sectors can provide the needed services and accelerate economic growth.



Rogerio Takayanagi is the Chief Marketing Officer at TIM Brazil. Prior to TIM, Mr Takayanagi worked at the Value Partners consultancy and for Promon Telecom where he developed strategic projects for mobile, fixed and regulatory, public and technology sectors. He also worked in the development of a business plan to launch new GSM operations in Latin America, the development of the portfolio of 3G services and migration projects of CDMA and TDMA to GSM.

Rogerio Takayanagi holds a degree in Electrical Engineering from University of São Paulo (USP), a specialized degree in Business Administration from Fundação Getúlio Vargas (FGV-SP), and has extensive experience in the telecommunications industry.

The total number of mobile phones in Brazil reached 187 million in June 2010, which means 96.8 devices per 100 inhabitants. Thanks to an excellent model of privatisation and to a highly competitive marketplace, its market penetration is gradually reaching 100 per cent.

Today mobile communications networks (voice and SMS) cover over 95 per cent of the Brazilian urban population. The figures show the importance of mobile service in the daily routine of a country with continental dimensions and a population of nearly 200 million inhabitants. Brazilians have already adapted to the use of the mobile

phone to make calls. Now the focus of mobile telecommunications companies is on extending mobile coverage and making the use of the Internet via mobile devices more widespread. A joint study by the Brazilian Institute of Public Opinion and Statistics (IBOPE) and Nielsen Online shows that only 46.9 million Brazilians accessed the Internet from their homes or offices in May 2010.

This situation - widespread network coverage in urban centres, widespread use of mobile phones by Brazilians and the vast number of people with no Internet access - is extremely favourable to the growth of Internet use via mobile phones in the country. We believe that

the natural pathway of telecom companies is to fill this gap.

The value of the mobile phone industry for Brazilian society can be measured by the volume of capital invested by the sector. A study carried out by Fundação Getúlio Vargas and commissioned by Acel (an association of telecom companies) shows that the mobile network operators' contribution to the generation of wealth in the country is much greater than the large investments made. According to the study, the production chain of the mobile phone industry contributed R\$74 billion to the Brazilian economy in 2009, directly or indirectly.

“The Brazilian Government’s recent initiative to implement the PNBL (*Brazilian National Broadband Plan*), which aims to make the service available for all and reduce the cost of Internet access in the country, has been the subject of much debate: who would carry out the task most efficiently?”

It must be stressed that digital inclusion is a key factor for social inclusion. Telecommunications operators, especially mobile phone operators, have contributed effectively to the development and the democratization of communications in Brazil in recent years, thus making it unnecessary for the Government to invest in the amplification and modernization of the infrastructure. During this period, the country leaped from one million mobile phones (in 1994) to 187 million in July 2010. However, there are still 90 million potential users who have no access to the Internet via their mobile phones; they also lack other services that can and should be available, especially in more remote regions of the country which still have no voice service.

The repressed demand is not only for voice, but also for the Internet. Although Brazil has a highly connected population - it is fifth in the world in terms of number of users and has the highest number of hours per user - Internet access is still expensive and of low quality.

Thus our urgent and constant challenge is to ally quality, network coverage and cost. To increase the number of services offered requires investments by the major mobile operators and also by the Brazilian Government. Tax and fiscal relief does not solve all problems, but it is important as, on average, taxes amount to 43 per cent of the cost of the service.

An alternative would be the use of the telecommunications universalisation funds, which have raised R\$36.5 billion (US\$20 billion in current rates) over the last eight years. In addition, today every network operator pays Fistel (the Telecommunications Fiscalisation Fund) R\$26 per mobile phone activated, and R\$13 per annum for the maintenance of mobile phones in its base, an amount much greater than the sum Anatel needs to operate, and which, in the end, makes the service more expensive for the user. Tax reduction directly benefits the user and stimulates both voice and data consumption, thus generating benefits for the entire production chain.

The Brazilian Government’s recent initiative to implement the PNBL (*Brazilian National*

Broadband Plan), which aims to make the service available for all and reduce the cost of Internet access in the country, has been the subject of much debate: who would carry out the task most efficiently? Such dualism is essentially ideological, since, in practice, both actors - the State and the private sector - are needed in the process. First, it must be recognised that the State has a relevant role in bringing about development, hence it is not and never will be an opponent of private enterprise. On the contrary, the Government has a key role in the coordination of efforts, in helping with investments and in ensuring the necessary conditions for the reduction of service costs.

On the other hand, it would be irrational and counterproductive for the Government to construct an infrastructure that was entirely independent and superimposed in some areas. The total sharing of both the public and the private network is the most viable option for the sector to achieve its objectives, namely, to make the service available for all as quickly as possible and in a way which is economically viable. Sharing the existing infrastructure can result in an economy of up to 50 per cent and consequently cheapen the service for users and reduce the length of the implementation process.

Regulatory agencies throughout the world try to increase competition by offering these networks to competitors who do not have such resources. In Brazil, many attempts have been made, although unsuccessfully, to discuss the remunerated desaggregation of the concessionaire’s networks to make them available to competitors. Also, choosing a single telecom operator to carry out the entire plan is inefficient - a waste of public money, and would create a dangerous competitive imbalance. Competition is essentially the key to the development of telephony services in Brazil.

As a matter of fact, the sector’s figures are high and attractive to any company planning on popularizing telecommunications as a whole. According to Ipea (the *Institute of Applied Economic Research*), an organ linked to the federal Government, the Brazilian private sector alone plans on investing around R\$67 billion (US\$37 billion) by 2014. The largest slice of this investment will go to

mobile telephony for the expansion of 3G technology and broadband. In this context, I believe both Government and telecom companies should focus their dialogue to ensure the execution of a coordinated telecommunications services expansion plan that will satisfy the interests of all actors.

In this sense, Brazil has an enormous opportunity to develop a wide-ranging public/private joint programme, to work on various fronts and ensure the rapid development of high-quality, affordable and innovative telecommunications infrastructure. The Government should coordinate the programme as a whole and ensure the basis for its implementation - assured regulatory stability to attract investments, the allocation of more spectrum to telecom companies, co-investment in areas which are not economically viable for private enterprise, the assurance of balanced rules that stimulate competition, and, finally, to work together with the main actors with a view to making the exoneration of service taxes possible.

Telecommunications companies, on the other hand, must also do their homework, starting with a reduction of their internal costs (transport, unbundled access and, why not, interconnection?). There is also the need for long-term commitment in terms of sharing the existing network, coordinating future investment for the construction of the necessary infrastructure, as well as the commitment to invest over the next few years.

In short, Brazil does not have a demand limit; it has an offer limit. A coordinated initiative by all actors will allow the country to take a qualitative leap in terms of its infrastructure and give it the level of services it deserves and which will further accelerate economic growth. ●

Latin America's wireless transition - learning from others

by Alberto Barriento, VP & General Manager, Latin America & Caribbean and Jose Del Risco, Sales Solutions Manager, Latin America & Caribbean, Tellabs

In Latin America, mobile phones are popular. Few use wireless Internet. Nevertheless operators are upgrading networks to handle anticipated growth. Closely watching other markets, LA operators avoided unlimited data plans, so once users exceed their plan's limit, service continues, but connection speeds slow down and carriers limit the performance. Since most LA mobile phone users are prepaid, carriers need imaginative ways to lure users into data. Networks with decentralised intelligence help operators gather information to enhance the user experience and facilitate mobile advertising.



Alberto Barriento is Vice President of Sales in Tellabs' Latin America and Caribbean region; he has more than 25 years of experience in the telecommunications industry. Previously, Mr Barriento was Tellabs' director of sales in Brazil. Before joining Tellabs, Mr Barriento held a series of sales and managerial positions at Ericsson, Motorola and Nortel.

Alberto Barriento holds a Bachelor of Science degree in electronic engineering from Faculdade de Engenharia Industrial in Brazil.

Jose Del Risco is Tellabs Solution Sales Manager for the mobile market in Latin America and Caribbean (LAC); he is responsible for analyzing market requirements, developing new opportunities, and positioning the solutions that provide the most benefits for the customers. Mr Del Risco has more than 20 years of experience in telecommunication, both with the enterprise and service providers market, with focus on the mobile backhaul and mobile packet core.

Jose Del Risco holds a bachelor's degree in Computer and Systems Engineering from Universidad de los Andes in Bogotá.

No savvy executive would turn down a chance to peer into the future for a glimpse of what hot products his users will clamour for over the next couple of years. That is especially true in communications, where rapidly evolving technology and shifting consumer moods keep everyone guessing. Happily, there are some corners of the wireless world where players do have access to a crystal ball of sorts, and even if its visions are somewhat murky, helpful guidance is possible.

In Latin America, mobile phones are popular, but the wireless Web is a relative infant. On average, fewer than five per cent of mobile

phone users now subscribe to mobile data services. While most countries have 3G network service, coverage and data traffic are light, but growing. Network operators know that they are on the verge of an explosion in demand for wireless access to YouTube, Facebook, Twitter and countless other Internet-based destinations and understand they must handle the capacity issues unleashed by consumer enthusiasm for smartphones and the mobile Internet.

Worldwide, the wireless data explosion is breathtaking. Wireless analyst Chetan Sharma estimates that mobile data revenues were 26 per cent (US\$220 billion) of 2009 worldwide

mobile revenues. Informa Telecoms & Media predicts that the combination of smartphones and mobile broadband networks will push global wireless industry revenues to exceed US\$1 trillion by 2013.

Latin American operators are moving to expand and upgrade networks to handle anticipated growth and can learn from experience elsewhere the best path to success. One lesson already learned is to avoid offering unlimited data service plans. AT&T, the US carrier that partnered with Apple to introduce the iPhone, saw the stunning sales success that triggered a smartphone boom. But iPhone users and their taste for video

downloads taxed AT&T's wireless network to the point where the carrier had to stop offering unlimited data plans. Other carriers are also abandoning unlimited data plans.

In Latin America, that shouldn't be a problem because nearly all carriers already offer plans that have 'soft limits' on how much capacity a user can use. Whether a plan limits use to 250 megabytes a month or ten gigabytes, once the user exceeds their limit, the service continues, but the carrier slows down connection speeds and limits the performance.

As North American carriers upgrade their 3G networks to fourth generation (4G)/Long-Term Evolution (LTE), their Latin American counterparts are focusing more on expanding their 3G networks and, in some cases, moving to High Speed Packet Access (HSPA+). While there are a few pilot 4G projects in Latin America, few expect commercial rollouts of 4G service until the end of 2012. Latin American carriers have time to plan ahead with an eye toward making their networks smarter. So they can accommodate increased demand when it arrives, in the most economical way possible.

In North America, carriers are learning that the boom in smartphones and the mobile Internet poses a real threat to their central role in the wireless world. People with BlackBerries, Androids and iPhones can become quite enamoured of their handsets and the applications they get from the iStore or Google. Smartphone users often don't think much about their carrier until they suffer a dropped call or other service outage. Thoughtful North American carriers seek to counter this by providing smarter service. Their networks will know the user, their habits and location.

This capability could offer services a person might not even have thought of themselves, something Amazon has done for years in suggesting books or music a user may like. A smartphone might generate a message about a spouse's birthday on the horizon, for instance, when a user walks by a store where they often purchase gifts.

In Latin America, the personalized mobile Internet may take a different twist. Because four out of five Latin American mobile phone users use prepaid plans, carriers need imaginative ways to lure users into data services. One route may lie in partnering with content providers to raise revenue from a source other than the user.

With a user's permission, a content provider might offer advertisements along with streaming video or social network sites. Revenue from those ads could supplement what the user himself pays for data services. It is a long way before this alternate business plan becomes a reality, but it's something most Latin American network operators are thinking of. So they need to raise their priority for upgrading their networks to become as smart as possible. If operators don't develop networks with decentralized intelligence that combine information about content and context to enhance the user experience and open a mobile advertising market, someone else will.

Latin Americans already have access to iPhones, and Apple's fascinating gadgets are likely to grow more popular. In launching its iPad in North America this summer, Apple updated its privacy policies on collecting user location data. It was a move aimed at enhancing location-based service applications and also seen as part of Apple's move into mobile advertising.

As users carry their iPhones or iPads past a Starbucks or a Pizza Hut, it's likely their device will offer coupons for a free latte or slice of cheese and pepperoni to entice them into the store. Carriers with smart networks that enable such targeted marketing can expect to get some revenue, but if the transaction uses a network that is little more than a 'dumb pipe', the carrier may be left out of the revenue-sharing equation.

By giving applications developers network intelligence about who the user is, what kind of handheld device is being used, where the user is located, and so on, the carrier not only enhances the user experience, but also opens the market to more players. That gives consumers more choices and also assures the network operator a primary role in wireless service. Research by Nielsen earlier this year found that while using most wireless applications, users are largely indifferent to the applications' origins; they embrace those supplied by Google, Apple or Microsoft as readily as those offered by a wireless network operator.

Carriers have little choice but to add capacity to their networks as their users demand it, but how they upgrade their networks may play a huge part in how successful they will be a few years hence. These aren't decisions that one can postpone. In Latin America many network operators already find that backhaul

has become a bottleneck even though increased capacity demands spawned by the wireless Internet are still fairly light. Many who once got by on four or eight megabytes of backhaul capacity are upgrading to 45 megabytes.

Because they also want to offer policy control systems to users, many Latin carriers include deep packet inspection in their upgrades to the packet core network.

Converting from a network designed to handle voice traffic and SMS to one that can accommodate YouTube, Hulu and Facebook requires a flatter hierarchical structure. This not only enables the carrier to provide sufficient bandwidth economically, but enhances the quality of the user's experience. Packet networks, especially Carrier Ethernet networks, can scale to a high bandwidth economically. They handle the bursty nature of data traffic while still accommodating voice traffic.

In North America, data traffic already exceeds voice traffic on wireless networks, and Latin America is essentially travelling down the same road. Operators in Brazil are bracing for a tenfold increase in data traffic over the next two years.

One factor that could accelerate wireless Web popularity among Latin Americans is that in many areas fixed Internet has either poor coverage, high prices or low performance. In some countries, such as Uruguay, it is estimated that as many as 90 per cent of wireless broadband subscribers use data cards or dongles, which is a testimony to the mobile Internet.

Latin American business people have already perceived the competitive advantage in using wireless connections to stay in touch with colleagues as they travel. Enabling people located in physically separated locations to freely collaborate and improve efficiency should become very popular with Latin American Managers.

While challenges facing Latin American wireless operators are somewhat different from those of their neighbours in other parts of the world, many of the opportunities presented by the smartphone/wireless broadband boom are similar. Latin American wireless executives may benefit by their colleagues' experience elsewhere. ●

The smartphone experience for a broader audience

by Flavio Mansi, Senior Vice President and President of Qualcomm Latin America

Mobile phones, ‘smartphones’ and ‘feature phones’ alike, have been getting smarter and more capable in response to consumer demand for interactivity as well as access to more sophisticated applications and content. The mobile phone is becoming the primary Internet connection for many and the only means to access the Internet for others. With the growing capabilities in the feature phone and the advances in smartphones, there is a smart solution for all market segments that will drive the consumer experience.



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Prior to joining Qualcomm he served as the General Manager of Corporación Nacional de Radiodeterminación, S.A. de C.V., a joint venture between QUALCOMM, Inc. and Grupo Pegaso, and provider of the satellite system OmniTRACS in Mexico, Central and South America. Previously, Mr Marti was the Corporate Manager of Grupo BIMBO. He began his career as the Executive Assistant to the President of Grupo DOMEQ.

Flavio Mansi Marti has a bachelor's degree with a major in International Affairs and Economy from the Trinity University in San Antonio, Texas, USA.

Nowadays, people want to do more with their phones than simply make calls and use other basic features. This trend represents enormous opportunities for operators, developers and the entire marketplace.

A growing number of individuals are moving beyond phone-based browsing, and becoming content creators and distributors. Consumer and enterprise workers are seeing the value and feeling the power of an enhanced mobile broadband experience.

Users are changing the way they use mobile phones; from social networks to business and productivity applications, and for every step during the day, pushing mobile phones to be more robust.

In the last few years, phones have typically been categorized as either ‘smartphones’ or ‘feature phones’. A smartphone was defined as a handheld device that integrates mobile phone capabilities with the more common features of a handheld computer or PDA,

allowing users to store information, email, install programmes, and make phone calls using the same device.

Today, the definition of a smartphone is changing. Industry analysts say that what sets a smartphone apart is its operating system (OS) and the third-party applications it can run. The most common operating systems used by smartphones are Symbian, Web OS, Windows Mobile, RIM OS, Apple OS, Android and Linux mobile.

Forrester Research sees the ability to access the Web and download applications, a large storage capacity and a QWERTY keyboard as other features, common to most smartphones.

The smartphone is now being quickly embraced in the market, making a strong contribution to handset sales and spurring steady growth in data revenues.

Of course device manufacturers have been crucial in the evolution of these smart gadgets, by recognizing the value of bringing Internet-capable mobile devices to market and by offering new features and innovative designs. Entertainment applications and game downloads have been among the most popular, and as this device segment continues to evolve, it is clear that one of the most valuable functions smartphones allow is efficient communication in multiple forms.

This generates high data traffic and requires powerful and reliable 3G networks. Operators continuously need to optimise their networks to guarantee a seamless and exciting user experience, while looking for new revenue streams.

It is interesting and exciting to see that although smartphones are still at the high-end of the device price range, forecasts estimate that emerging markets will play an important role in the growth of the segment.

According to Pyramid Research, emerging markets will become the leading growth engine for smartphone sales over the next five years. China will become the biggest smartphone market in 2010, and other key markets such as Brazil, India, Nigeria and Turkey will record compound annual growth rates above 30 per cent through 2014. Understanding local conditions will be vital for operators, smartphone vendors and applications developers.

The worldwide penetration rate is likely to reach approximately 38 per cent by 2014 according to Informa. The same source estimates smartphone sales will represent 12 per cent of the total Latin America market this year; by 2014 that number will increase to 31 per cent.

This positive outlook for smartphones certainly is great news for the industry from all the different perspectives of the value chain, and it expands beyond the segment itself. There still is, and will continue to be,

a large segment of the market that is price sensitive, but the fact that consumers opt for less expensive phones does not mean that they don't have the expectations of having a smartphone-like experience with their feature phones.

The success of the feature phone rests on its ability to match the smartphone feature for feature, without attaching a pricey data plan to the device. Feature phones still rule the market, even as smartphone sales continue to increase their share of overall handset sales. Feature phones accounted for the majority of shipments last year. The features that are becoming more common in the feature phone market are exactly the ones that are making smartphones popular.

Feature phones have proprietary OS firmware and may support third-party software via platforms such as Java or Brew. These operating platforms enable a feature phone to run applications and let the consumer have a similar experience to using a smartphone.

Brew MP is a flexible OS, offering feature-rich applications and services to the largest consumer segment of mass-market feature phones, turning mid-tier feature phones into mass-market smartphones. Emerging market operators are looking to deliver a smartphone-like experience at low cost.

With increased functionality and advanced user interfaces, the feature phone is starting to resemble the smartphone.

Operators are showing renewed interest in bringing more advanced mobile applications to the feature phone users that represent the overwhelming majority of their subscribers. They are making mobile applications easier to consume on the kind of feature phones that most mainstream users carry.

According to Nielsen, Facebook, Google Maps and Weather Channel are the most popular applications for smartphones; while music applications and social networking sites like Facebook, MySpace and LinkedIn dominate feature phones.

Games are the most downloaded on both smartphones and feature phones. These studies demonstrate that users are interested in a rich, full experience, downloading applications and interacting with their world wirelessly, regardless of the type of phone they have.

Options are on the street - smartphones with applications are getting richer every day and feature phones with increasing performance and smartphone-like experience are growing in popularity. The choice is now up to consumers to pick the features and applications that bring the best 'smart' experience to their fingertips. With such advanced capabilities on mobile devices, the mobile phone is becoming the primary Internet connection for many and the only means to access the Internet for others, enabling access to information and connectivity in an entirely new way.

With the growing capabilities in the feature phone and the advances in smartphones, there is a smart solution for all market segments that will drive the consumer experience. ●



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Delivering triple-play service bundles

by Alejandro Couce, Head of Sigma Systems CALA Region

Broadband penetration in Latin America is expected to continue expanding over the coming years. As the number of broadband and advanced telecom services subscribers rise, the rate of economic growth and development will increase. Latin America's telco and cable service providers need to plan to capitalize on the anticipated growth by undergoing an internal service transformation with an experienced next-gen OSS platform provider. The OSS/BSS systems provide the customer and operational control information required to capitalise upon their broadband network investments.



Alejandro Couce is the Head of Sigma Systems for the CALA region; he has nearly 20 years of leadership and management experience in OSS and back-office software. Mr Couce joined Sigma Systems after serving as Latin America director for Cross Portfolio at Amdocs. Previously, Mr Couce held leadership roles in the IT and consulting industries at Cramer, Arthur Andersen, PeopleSoft and Marrakech. Mr Couce is also the co-author of a book on management in the 21st century.

Alejandro Couce holds an MBA Management & Strategic Marketing from the University of Business and Social Sciences (UCES), Argentina and an MBA in Management & Strategic Marketing from the Universidad Argentina John F. Kennedy.

Until recently, much of Latin America has lagged behind the rest of the world when it comes to telecommunications and information technology, hindering the region's global economic competitiveness and the quality of life of its citizens. While more developed countries like Argentina, Uruguay and Venezuela have nearly 100 per cent broadband penetration - with the cost usually amounting to less than one per cent of an average household monthly income - broadband penetration for the region as a whole is well behind the global average. Low tele-density, high prices and insufficient competition have been blamed for poor broadband performance in these countries; the consumer access to a measly 1Mbps service costs more than ten per cent of average monthly income.

Government stimulation

Country representatives have been working to drive broadband adoption in Latin America by promoting the expansion of fibre-optic infrastructure in the region and disseminating best practices in broadband policies. As a result, service providers in these growing markets are starting to offer true broadband, non-dial-up, connectivity, which is defined by the ITU as 1.5 to 2Mbps or higher. More importantly, broadband is seen among all countries in Latin America as a means to create jobs and to become competitive in a global economy. For these reasons, Latin America's broadband market is expected to become one of the fastest growing markets in the world and a promising target for telecom investments.

The Government of Chile recently proposed legislation that would let service providers operate two separate networks. The initiative is one of a list of projects the Government is introducing to stimulate competition including number portability, new spectrum auctions and, perhaps, subsidized telecom services.

Government agencies are beginning to back broadband deployments and see it as a driver for economic growth. Brazil is one of the many countries pushing to develop a plan to make sure all its citizens have access to at least one broadband signal. In May, the Brazilian Government introduced its national broadband plan with an estimated investment of US\$6.7 billion through 2014. The Government anticipates that this initiative

will give 40 million household Internet connections over the next four years.

Delivering IP-based services

As service providers begin to deliver broadband services, they also have an opportunity to offer advanced services and service bundles, including video, video on demand (VOD) and Voice over IP (VoIP) to increase their average revenue per user (ARPU). Pyramid Research recently noted that the availability of triple-play services in Latin America should reach 12.4 million citizens by 2014. However, for many service providers transitioning their network from delivering basic broadband and voice to multiservice, triple-play fulfilment systems will be a daunting task.

Many service providers are already transforming their networks to an all-IP core by investing in IMS or pre-IMS architecture, in order to deliver next-generation services. For most, however, full-featured VoIP, IPTV and Web services deployments have come slowly; the promise of triple-play bundling is proving to be a more expensive, arduous task than expected. Inefficient and proprietary back-office solutions may be to blame for increased errors, high rates of order fallout and churn, and consequently, higher operational costs. Service providers are often burdened by legacy silo-based service operations and complex billing/operational support systems (BSS/OSS) environments, resulting in inefficient order management, services provisioning and activation, in the creation and fulfilment of double-play and triple-play bundles.

Cumbersome BSS/OSS (*Business Support Systems/Operations Support Systems*) solutions and service fulfilment inefficiencies also result in disjointed views of individual subscribers. Without achieving a single view of subscribers that cuts across all product offerings, it becomes difficult to shift marketing to a mode that is optimized for cross-product promotions and service bundles.

Service transformation eliminates individual service silos by extracting the services layer and managing all services on a single next-gen OSS platform. By undergoing a service transformation, Latin American telco and cable operators would realize simpler delivery of the latest IP-based services, such as IPTV, SIP-based VoIP and DOCSIS 3.0 or fibre-based broadband. Studies show that operators that deliver advanced IP services enjoy improved customer satisfaction,

lower churn rates and higher ARPU through bundle offerings.

Using a single next-gen OSS platform for service fulfilment allows operators to design services that can be delivered via any access technology - whether DSL, cable mobile or fibre - to multiple devices including SIP-based equipment. As operators begin to roll out triple-play services following service transformation, customers will gain the added benefit of receiving a single bill for all subscribed services, rather than paying separate bills for voice and TV, for instance. In a more sophisticated model, customers would be able to select their own multi-service portfolio, modify it with self-service tools or portals, and access those services seamlessly through the TV, PC or mobile.

Operators should look for a service fulfilment platform that includes pre-developed and production-ready assets for rapid deployment. These assets include pre-defined workflows and use cases that account for specific services as they are delivered over a range of underlying network and application platform technologies. Next-gen OSS platforms should have pre-defined interfaces and technology cartridges or APIs that more easily integrate with other OSS/BSS systems, network-facing activation and element management platforms, and network equipment such as call management servers and gateways, set-top boxes and conditional access systems.

Bringing all of these capabilities to bear in one comprehensive OSS platform enables operators to migrate their service layer and encapsulate existing operational silos in a short amount of time, while minimizing implementation risks. By optimizing service fulfilment and order management processes through service transformation, operators can go to market faster with multiple service offerings.

The customer's view

As Latin America operators deploy more advanced IP services, network management and identification of up-sell opportunities will grow in importance. For instance, the expansion of broadband access will come with higher bandwidth usage, particularly when it comes to subscribers' appetites for viewing online video. While undergoing service transformation provides a comprehensive view of each subscriber, operators will also need the ability to monitor their networks and determine promotional opportunities. Accessing real-time information on subscriber

usage requires active mediation capabilities that can gather useful information, such as service usage, consumption trends and behaviours, which can span from TV viewing preferences to on-demand transactions.

A proven active mediation solution allows service providers to collect and process terabytes of real-time usage information from advanced IP networks, including Internet Protocol detail records (IPDRs) for broadband network management and Call Detail Records (CDRs) from VoIP calls. Ideally, the active mediation solution would include a database aggregation process that handles the hundreds of millions of IPDR and CDR records created daily from telecom operators' networks, thereby allowing an operator to produce dynamic and ad hoc reports on network usage.

With an active mediation solution, service providers could also add new business models to their portfolio, such as usage-based services or prepaid broadband.

Industry standards

To further expedite the ability to deliver triple-play services, service providers in Latin America should demand that vendors adopt industry standards that are intended to simplify operational processes for cable and telco operators. The TM Forum, for example, recently released the latest OSS/J order management API - called Information Framework JSR-264 - that enables back-office and front-office solutions to fully interoperate. When OSS providers - to fully interoperate with certified, BSS and CRM providers - adopt industry standards such as the OSS/J order management API, it allows service providers to select best-of-breed vendors for quicker times to market for new services, improved operational efficiencies and a reduction in deployment costs by as much as 30 per cent.

Broadband penetration in Latin America is expected to continue to expand over the next several years. As the number of broadband and advanced telecom services subscribers rise in the region, so will the economic growth and development increase. Latin America's telco and cable service providers plan now to capitalize on the anticipated growth by undergoing service transformation with an experienced next-gen OSS platform provider.



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BRINGING IRAQ TOGETHER



Testing global connectivity and connectedness

by Jack Rozwat, General Manager Latin America Region, Agilent Technologies, Inc.

LXI-compatible instruments can feed data to Web pages on any standard browser; you just need a PC and an Internet connection to monitor LXI test instruments anywhere. LXI-based systems provide an incredibly powerful, easily accessible, tool for troubleshooting and monitoring problems in a test system. With LXI, for example, manufacturing sites in Latin America can be monitored by authorized experts anywhere in the world to help equipment manufacturers (OEMs) and electronics manufacturing services (EMS) companies or R&D teams meet their targets.



Jack Rozwat is the General Manager for the Latin America Region at Agilent Technologies' Electronic Measurements Group; he is responsible for all sales, support, and field operations activities in the Latin America region for Agilent's Electronic Measurement Group. Mr Rozwat has over 25 years of experience in the test and measurement industry in a variety of sales, marketing, global account management, and senior field management positions.

Jack Rozwat holds a BSEE from Purdue University and a MBA from the University of Chicago.

Life in a global company has some big pluses and big minuses. For those who haven't done it, international travel may seem like one of the big pluses. What's not to like? Well, a lot, actually. Trips that take 30 hours door-to-door are common. Sitting on a jetliner for ten hours at a stretch is mind-numbing at best.

International travel has been a challenging fact of life for some test engineers who are responsible for contract or offshore production lines. Whenever things aren't running correctly and can't be diagnosed

from afar, a visit is usually a must. The 'Wouldn't it be nice?' fantasy solution has been to log-in remotely and monitor the system from a PC in the engineer's own office.

From fantasy to reality

In electronic test equipment the LAN eXtensions for Instrumentation (LXI) connectivity standard is transforming, 'Wouldn't it be nice?' into, 'What are you waiting for?' This isn't a glorified version of the

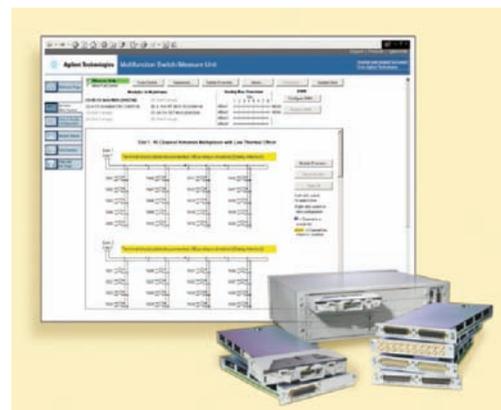


Figure 1: The LXI instrument web page can be used to monitor and control an instrument such as this page used to monitor switch matrices.

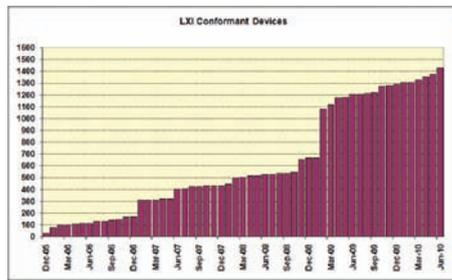


Figure 2: More than 1,400 instruments have been certified as LXI compatible

Windows remote desktop capability that simply shows what's on the screen of the remote test system.

All LXI-compatible instruments can serve a web page, and most provide browser-based monitoring of what's going on inside, even during programme execution (Figure 1). All it takes is a PC equipped with a standard Web browser - Internet Explorer, Firefox, Chrome, etc. - and a LAN connection.

At first glance this may not seem like a technological 'breakthrough'. However, it's an incredibly powerful tool for troubleshooting and monitoring problems in a test system, and it is accessible through a company's intranet, or any other available access path that feeds into a contract manufacturer's test network.

Taking a closer look - without travelling

When the phone rings at 3:00 a.m. because the system has stopped running - again - taking a closer look is a simple matter of logging in remotely. Of course, it will probably require a 'remote desktop' or 'remote person' to control and monitor the overseas computer. Even so, with an LXI instrument-based test system the individual instrument Web pages will provide useful clues about what is or isn't happening across town, across the continent or across an ocean. Being able to do this while the test programme is running provides a new level of insight that isn't available with previous-generation system architectures and connectivity standards.

If someone at the remote site has accidentally turned off an instrument, it becomes immediately obvious: The instrument's web page won't load in the browser window. The remote engineer can

still pull up any pages that will load, sort out what's happening, and describe how to fix the problem. It's an approach that's much easier on the travel budget.

Connecting manufacturing operations

Often in Latin America, manufacturing sites are clustered into regions, sometimes to align with regional or local Government incentives, or to fit into the supply chain. In Brazil, the two main regions of printed circuit board assembly (PCBA) manufacturing are in Manaus and Sao Paulo; in Mexico, they are spread across cities such as Guadalajara, Monterrey, Nogales, Juarez and Reynosa.

Across Latin America, most manufacturing organizations are looking for new and better ways to optimize test coverage, minimize cycle time and increase yields. The connectivity and connectedness - of people and test systems - made possible by LXI-based test systems can help original equipment manufacturers (OEMs) and electronics manufacturing services (EMS) companies achieve these goals across and between sites.

Improving competitiveness

The easy LAN connectivity enabled by LXI can have a profound, positive impact on OEM and EMS companies. First, they save money on the connectivity infrastructure because a LAN-based test system is much less costly to implement than proprietary instrumentation standards. Second, standard services and easy-to-use utilities save time, making it faster and easier to assemble and configure a system. Finally, the wide reach of LAN allows distributed systems as well as remote system control and monitoring.

The net effect: manufacturers have

greater flexibility regarding where to locate test systems, system host computers and remote PCs. It even enables remote test system monitoring so a distributed team with, for example, members in Latin America, Japan and the United States could all use and monitor the same test system. If necessary, an application specialist from the equipment vendor could also be given the necessary permissions to log in and help troubleshoot especially difficult situations.

With these benefits and the growing availability of LXI-compatible equipment (Figure 2), LXI is becoming increasingly popular in the development of automatic test systems for manufacturing applications. This is especially true in the automotive and telecommunication industries in Latin America: LXI is helping reduce development cost and improve test system performance and, ultimately, is enabling the creation of cost-effective electronic components, devices and products. It also opens the door to more effective testing of automotive components such as tracking systems, anti-lock braking systems (ABS) and air bags.

Enabling wider collaboration

As the electronics, telecom and automotive industries continue to grow and evolve in Latin America, so must the participants - and so must the tools they use. In electronic test systems, LXI helps enable collaboration on a local, regional and global basis. Using LXI and other Web technologies, system developers can more easily collaborate with their counterparts within Latin America and around the world.

These benefits also extend to research-and-development teams - engineers and scientists - who can easily view and share real-time measurement data with their colleagues, near and far. This allows developers in Latin America to achieve greater visibility in other regions and enhances their ability to contribute on large research projects. ●

Connectivity in Latin America

by Geoffrey Biddulph, Director of Latin American sales at PCCW Global

The growth in Latin American communications - from telephony to broadband data - in the last decade has been astonishing. Cell phones were few, the Internet was dial-up, and both were expensive. Although Internet user growth has increased more than 10 times, there is still a huge potential for growth. New undersea cables connecting the region to the USA, huge investments in domestic networks and the growth of Internet content and social networks have all spurred continuing growth of LA telecommunications.



Geoffrey Biddulph is the Director of Latin American sales at PCCW Global; he has lived and worked in Latin America for 25 years. Mr Biddulph received the award for 'Best of the Best' sales at PCCW Global in 2009. He was formerly a Vice President of Sales at Telecom Italia Sparkle's LA Nautilus unit and before that the Director of International at Embratel in Brazil.

Geoffrey Biddulph has a BA from Stanford University and extensive post-graduate training in telecommunications technology.

When the story of early 21st century Latin America is told by future historians, one of the most interesting aspects will be the explosion in communications.

Most people in Latin America remember the days of the 1970s, 1980s and early 1990s when all faced a multi-year waiting list to get a telephone. Cell phones didn't exist until the 1990s and didn't begin to penetrate the retail marketplace until the 21st century. The Internet was mostly a tool for people working at universities or large businesses.

All of that changed during the incredible last decade. Now, there are many ways to get a phone. The Internet is exploding. Broadband is taking off. People are communicating in ways that would have been unimaginable just 20 years ago.

Consider this - in most of Latin America, Internet user growth has increased more than 10 times, but still only about 35 per cent of people use the Internet. This means that the Internet has reached more people than ever, but it also means there is still a huge potential for growth. Connectivity in Latin America is greater than ever, but the trends show communications will still be one of the top areas of investment in the region for years to come because the market is far from being fully penetrated.

There have been three major reasons for the explosion in communications in the region. First, the proliferation of new undersea cable systems has brought greater international bandwidth and more reliable networks. Next, there has been a huge investment in domestic communications infrastructure in most Latin American countries. The third trend has been

the proliferation of new content and ways to connect via the Internet - from Google to YouTube to Facebook to blogs and email and instant messaging. These three trends have combined to cause a huge increase in connectivity growth in the region.

New cable systems

There are five main private undersea cable systems in the region and at least two major consortiums. The main cable systems owners are: Global Crossing, Telefonica, Latin American Nautilus, Globenet and Columbus Networks. The major consortiums are Americas 2 and Maya. There are several other cables out there, but these systems undeniably carry the largest amount of traffic.

All of these systems were installed in the last decade or so and all of them

have undergone upgrades as demand has increased. It is worth mentioning that there are also several satellite companies that continue to provide international connectivity to the region, although the amount of traffic carried remains small compared to the undersea fibre networks.

The undersea fibre networks provide connectivity from Latin America to the United States. The majority of Internet traffic is outbound (eyeball) traffic with users in Latin America looking at US-based sites. But these undersea cables also provide connectivity between different Latin American countries, facilitating intra-regional traffic in ways that are changing communications patterns and uniting the region politically and culturally.

Companies are now buying international connectivity on a wholesale basis at bandwidths in multiples of ten gbps. Just a decade ago, E1 (two mbps) or smaller circuits carried most of the traffic.

In addition, the reliability of connections to the region has increased exponentially. A decade ago, most traffic travelled on linear cables, which often failed, and satellites that were slow and balky. Now, multiple cable systems with full self-healing rings provide near seamless connectivity. The largest wholesale providers, which sell voice and data capacity to Internet providers and consumers, buy capacity from multiple undersea systems so they have full circuit redundancy for backup.

The demand for Internet access could not have been fulfilled if these new undersea cables had not been built.

Domestic infrastructure build-out

The new capacity brought by international cable systems needed to reach users in the larger Latin American countries. Two decades ago, most of the telecom infrastructure was incapable of carrying anything but the most basic level of analogue traffic. That changed about a decade ago as investment flooded into communications networks in every Latin American country.

The 1990s brought a wave of privatization to the region and most of the larger Latin American countries sponsored buyouts of state-owned assets. The result was a wave of new investment in telecom infrastructure. The biggest example, Brazil went from Government owned to completely privatized

in the late 1990s. A host of foreign companies - from MCI to Sprint to Telmex and Telefonica - have poured money into Brazil to help build out telecommunications. It is worth noting that several of the most successful companies maintained domestic ownership, however. At the same time, companies invested in new technologies - from cable delivery to WiMAX - to find solutions for delivering the all-important last-mile to homes and businesses.

The same process took place in Chile, Argentina, Peru and Mexico, although each country handled the privatization differently. It is worth noting that the countries that allowed the greatest amount of competition - like Chile - have the greatest amount of infrastructure at the lowest cost to the end user. Countries like Mexico that allowed one large company to dominate the marketplace (Telmex) have the least amount of competition and very high prices relative to their neighbours.

Even in markets with relatively low levels of competition, the telecom build-out has been noteworthy. New fibre and copper has been delivered to millions of new locations. Cable infrastructure now provides phone and TV service. WiMAX and other technologies have helped provide last mile loops where fibre is too difficult or costly to deploy. Satellite phones now dot small towns throughout the Amazon and other remote areas of Latin America. People in the region consider their cell phones among their most treasured possessions.

People throughout the region are communicating in ways they never would have dreamed of just a decade ago.



Content

Does content drive connectivity or does connectivity drive content? In Latin America, both trends are at work, but the explosion in new content would not be happening without the international fibre networks and the domestic build-out of infrastructure.

Latin Americans quickly adopt the latest technology and follow the worldwide trends. In 2009, the Latin American Internet audience grew 23 per cent and now represents eight per cent of total Internet traffic worldwide. Brazil alone grew 20 per cent, adding six million new Internet users in one year! Colombia grew 36 per cent; interestingly, one of the key reasons for this growth was the recent large increase in international cable systems to Colombia, which had been bypassed by most of the major undersea cables until then.

Google, Yahoo, Microsoft and Facebook were the most popular Internet sites in Latin America. But the region also has its own mixture of local popular sites. Terra, MercadoLibre, UOL and the Globo networks were also very popular. Like many countries, Latin Americans prefer content in their native language, and they love local content discussing local trends and popular culture.

Interestingly, Latin America has the highest number of people per capita using search engines to search for content. The average person makes 137 searches, almost twice as many as in the Asia-Pacific region.

Social networking is extremely important in Latin America, with Facebook - and Orkut, which is most popular in Brazil - dominating the marketplace. Users spend more than three and a half hours per month on Facebook, and six hours per month on Orkut!

The demand for content in the region is certain to continue to explode in the years ahead. Smartphones will eventually bring reliable video streaming to the handset. Soon, handheld video-conferencing will be the norm, especially for business travellers. Faster and faster networks - on the international and domestic level - will allow for faster delivery. That in turn will spur new applications and new innovations. Will the region undergo a new revolution in communications technology in the next ten years? It is impossible to know for sure, but history shows us it is very, very likely. ●



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Summit Trade Events

Prepaid roamers in a seamless home environment

by Amit Daniel, VP Marketing at Starhome

Latin America is the second largest prepaid market in the world. Although prepaid subscribers have basic roaming abilities, interoperability issues using diverse technologies do not allow seamless prepaid roaming and coverage is sporadic. The most common prepaid roaming solutions, CAMEL and USSD Call-Back, have complexities and drawbacks that limit their use. New solutions such as the Virtual Home Environment (VHE), gives prepaid subscribers just the same user interface, features, services and number dialling offered by their home service provider.



Amit Daniel is VP Marketing & Business Development at Starhome; she has also served as Starhome's Director of Product Management. Ms Daniel previously worked at Golden Lines, an international telecommunication provider, where she served as a Director for International Carrier Relations for America, Asia and Western Europe; she has 15 years of experience in the Communications and Telecom industry.

Amit Daniel holds a B.A. in Marketing and an MBA in International Marketing from Northumbria University in the UK.

What took so long?

Mobile operators in Latin America are managing the second largest prepaid market in the world according to Informa Telecoms & Media's latest Global Mobile Roaming Report 2008-2013.

However, despite Latin America's significant prepaid market share, prepaid services offered to subscribers are still limited due to the varying network technology across the region. Although prepaid subscribers have basic roaming abilities, interoperability issues with various technology does not allow seamless prepaid roaming and coverage is often sporadic.

Today, the development of prepaid technology means that operators do not

have to invest substantial sums of money to optimize prepaid subscribers' usage. New prepaid solutions that operate seamlessly alongside existing CAMEL (*Customized Applications for Mobile network Enhanced Logic*) and USSD Call-Back (a call-back dialling solution for mobile roamers that are not accepted by the local operator) are enabling operators to maximize the value of their prepaid roaming subscribers.

Homeless prepaid

Prepaid mobile services have been available since the mid-90s for the budget-conscious subscriber, but since its launch, prepaid has lacked the seamless services given to subscribers who choose to go with the postpaid option.

The case in point is that mobile operators who can provide their prepaid customers with easy access to simplified roaming, will not only add considerable value to their service offerings, but will help differentiate themselves from their competitors. The ability for prepaid seamless roaming will bring immediate monetary gain in an area that is currently restricted by many mobile operators.

Traditionally, operators have focused their attention on marketing data services and roaming capabilities to the postpaid customers, as it was this segment of the market that generated greater ARPU and more roaming income. Prepaid subscribers were unable to roam and hardly generated new operator revenue. However, times change and the lifestyles and buying patterns

of prepaid subscribers have evolved - fueled largely by the boom in tourism over recent years, along with roaming technology, which has made roaming capabilities a prerequisite for all mobile subscribers.

Currently, prepaid subscribers are still not free to use their mobile phones universally wherever they travel, as they require authorization before they make a call based on their credit. As a result, they often have to resort to other ways to make and receive calls, such as buying local prepaid SIM cards in the visited countries, using call-back solutions, or using calling cards, which can result in lost revenue for both the home and visited mobile network operators.

For these reasons, international roaming and interoperability are currently one of the hottest developing segments of the mobile prepaid market, a fact substantiated by a past GSMA BARG survey with operators worldwide that revealed prepaid roaming was the biggest roaming issue and the main focus for 37 per cent of operators.

The key to the VHE door

Two solutions currently available on the market are CAMEL and USSD callback. Both solutions, due to their complicated and fragmented technology, present key challenges for operators wishing to provide a cost-effective, user-friendly solution for their prepaid subscribers.

CAMEL is a set of standards that allows real-time billing and is based on Intelligent Network standards. However, CAMEL is expensive to deploy and requires support both in the home network as well as the visited network. Operators must also enter into a CAMEL agreement to facilitate CAMEL-enabled services. The number of operators who have implemented CAMEL globally is approximately 55-60 per cent. However, due to the complexities in arranging CAMEL roaming agreements, only a few operators have signed these roaming agreements.

Call-Back with USSD, the most popular solution for operators, sometimes deters customers due to its complexity. Users need to add a prefix string to all dialled numbers. This makes the process more complex - so the incidence of incomplete calls is higher and revenues are lost.

Given these options, what do operators need to maximize roaming revenues while ensuring a user-friendly experience for their customers? They require a solution that is usable and

not complex for end-users; less costly than CAMEL; and independent of CAMEL implementation in the visited network.

Thankfully for operators looking to maximize revenues today, there are now solutions available which replace the need for either CAMEL or USSD Call-Back. New prepaid solutions are able to deliver a completely seamless service and extend the operator's ability to offer IN services while roaming to all roamers in any network.

New prepaid roaming solutions provide the home operators with all the necessary information and tools to control and charge their outbound prepaid roamers. The home mobile operator not only receives all the information needed to activate the call, but can be confident that prepaid customers will be charged efficiently for calls, preventing customers whose accounts are overdrawn from being connected.

Furthermore, the progression of prepaid technology has, for the first time, seen solutions such as the Virtual Home Environment (VHE) become part of the prepaid subscribers' plan.

The Virtual Home Environment gives prepaid subscribers the same personal features, user interface and services offered by the home service provider, wherever the subscriber is roaming around the globe. Prepaid subscribers can dial numbers just as they would from home, since there is no change in user behaviour, meaning that a USSD string is not required. Call completion rates improve, which in turn, improves customer experience, and ultimately reflects favourably on the operator. Until recently, the Virtual Home Environment was only available to postpaid subscribers.

New and dynamic prepaid solutions provide the same revenue potential for prepaid that postpaid offers. Call correction solutions, also previously unavailable with prepaid use, analyze and correct dialling mistakes to facilitate seamless call completion. Call correction solutions are integrated into the Virtual Home Environment and do not require any coordination with roaming partner networks.

By extending these services to prepaid subscribers, operators increase revenue by improving the use of the VPMN (*Visited Public Mobile Network*) features and services. Operators are also able to generate additional revenues and visitor traffic while addressing roamers' basic needs.

So how does prepaid technology work?

Prepaid technology enables prepaid roaming in any network by providing the home operator with all the necessary information and tools to control and charge their outbound prepaid roamers. A key feature of prepaid technology is the ability to detect outbound roamers when they register in a visited network.

The combination of a Subscriber Identification Module (SIM)-based applet and intelligent platforms at the home operator, allows prepaid roaming. The service functions by using the SIM applet to control all calls made by the user. Once the call is controlled by the applet, the call is then routed to the home network, therefore allowing the intelligent platform at the home operator to interface with the prepaid Signal Control Point (SCP) system to charge the roamer's account. The call can be disconnected in real-time once the credit limit is reached.

The sky's the limit

Where cost may have once been the key factor in winning and retaining the loyalty of prepaid customers, in today's saturated mobile market it will be the additional services that will ultimately be decisive in ensuring brand loyalty and reducing churn.

Industry experts are predicting that prepaid usage will likely continue to skyrocket, as it is expected that roaming minutes (including all segments) will increase in Latin America. GSM figures quote that 80-90 per cent of roaming traffic in Latin America will be from business-related inbound subscribers.

Existing solutions are no longer adequate for prepaid users, especially not when prepaid constitutes such a huge, and burgeoning, market segment. One major cause of the current unsustainable situation is that mobile operators across the regions of Latin America each hold their own view about prepaid roaming and are cautious of the complications of implementing CAMEL agreements.

Users are seeking a simple and seamless solution that can be implemented and used anywhere, without the need for costly and complex CAMEL technology and agreements. Mobile operators who are ready for this conceptual change will immediately boost revenues by tapping into the under-served, yet lucrative, prepaid market. ●

Mobile TV in Brazil and Latin America

by Alon Ironi, Co-founder, CEO & President, Siano Mobile Silicon

Brazil and other Latin American countries have an enormous potential for successful mobile TV deployment. With a unified standard, and content-hungry populations, there is no limit for mobile TV in Brazil and in the greater Latin American region. Brazil's adoption of mobile digital TV cannot be overstated. It is the test bed and trial for the industry in Latin America. Success in Brazil, and the lessons learned there, will pave the way for a mobile TV revolution throughout the continent.



Alon Ironi is the Co-founder, CEO & President of Siano Mobile Silicon. He formerly served as CEO of Emblaze Semiconductor Ltd, Entrepreneur in Residence at Concord VC, General Manager of Zoran Israel and VP Engineering of Zoran Corporation, in charge of the overall engineering activity of Zoran worldwide. Mr Ironi has 15 years of experience in 'fabless' integrated circuit management, product roadmap definition and strategy, SoC architecture and design and more.

Alon Ironi holds a BSEE (Cum Laude) from the Technion and completed the MSEE programme in Santa Clara University (CA, USA).

Football crazy

You've seen the photos. During the World Cup this summer, millions of fans in Brazil and around the world were glued to their television sets at home, in the office, or at their local café or bar to follow their favourite stars. If there is one thing that major sports events such as this show us, it's the power of TV to attract and maintain viewer attention - and it goes beyond just sports. Whether we are tuning in to watch our favourite TV show, or the latest breaking news items, TV has a unique

power to serve as a window to the world and helps us see beyond ourselves.

In Brazil, and in Latin America as a whole, the way people will be able to view TV is undergoing a dramatic transformation. According to analysts, Mobile Digital TV - a family of technologies for delivering a live broadcast TV signal optimized for mobile handheld devices - has a high potential to be successful in Latin America. The ability of users to watch television on mobile devices, which include cellular phones, PDAs, portable media players,

laptops, netbooks, portable navigation systems, portable game consoles and portable DVD players, among others, will really revolutionize the way in which people watch TV on-the-go, on the street, at a shopping mall, restaurant, hairdresser or even at home.

Dr Windsor Holden, Principal Analyst at Juniper Research, commented recently on the potential of mobile TV in Brazil: "Sports broadcasting and the evolution of mobile TV go hand-in-hand. Given the football-mad Brazilians and the World

“Mobile TV is generally speaking a joint venture between broadcasters - and mobile operators. Typically, the infrastructure is laid by a broadcaster, and the service is then offered by the broadcasters themselves as a free-to-air, dedicated service and by the mobile operator - as part of the rich media bouquet offered on the carrier’s mobile phones.”

Cup in 2010, and with Brazil also hosting the 2016 Olympic Games, there’s fertile ground for mobile TV to really take-off. With the help of major sporting events in the coming years, Brazil could prove the first market in South America to make mobile TV a success.”

Mobile Digital TV (*MDTV*) services are already available in more than 40 cities in Brazil, covering a population of more than 70 million. These services are being offered for free, with concrete plans to introduce advanced data and interactive services in 2011, creating exciting new revenue generation possibilities for the various players involved.

Mobile TV is expected to be a boom for the telco and consumer electronics industries in Brazil. A BRIC country (Brazil, Russia, India and China) with a stable political infrastructure and a flourishing economy, the dynamic Brazilian market represents huge potential for Mobile Digital Television (*MDTV*). With the third highest television revenues in the world, a 189 million strong nation of sport lovers and phenomenal recent growth of the mobile communications industry, much fertile ground exists for the burgeoning *MDTV* market. Coupled with the favourable economic foundations, the Brazilian Government is mandating an analogue-switch-off and an extremely attractive business model of free-to-the-users services, aimed at delivering a new TV experience to the Brazilian people.

Key statistics and the big picture

It goes further. The numbers tell a clear story. Almost 93 per cent of Brazilians 14 years old or over watch television and nearly 43 per cent spend more than three hours a day in front of a TV. Almost 95 per cent of Brazilian homes have at least one TV set. Brazil has the third-highest television revenues in the world. The number of cell phones in Brazil is already very close to surpassing the rate of one phone per person, according to recent data.

These statistics show that the convergence between TV and mobile devices is bound to happen within a short period of time. The successful growth of mobile TV will completely change the way that television content is absorbed. In addition to widely expanding the option of when and where viewers can watch TV, it would also mean the rise of a new reality for advertising agencies and advertisers, who will be able to reach their audiences no matter where they are. It’s worth noting that Brazil is the world’s third fastest growing country in TV advertising, paving the way for mobile TV broadcasts to penetrate this market.

Furthermore, as the early bird and catalyst for adoption of new technologies in Latin America, Brazil will be the blueprint for the successful rollout of mobile digital TV services throughout the entire Latin American market. Having recently debuted *MDTV* services in Argentina and Chile, other countries are very likely to join, including Uruguay, Peru, Venezuela, Bolivia and Paraguay. These countries are expected to launch services within the next year. Overall, this has the potential to generate one of the largest unified Mobile DTV markets worldwide, totalling more than 300 million potential viewers.

How will it work?

Mobile TV is generally speaking a joint venture between broadcasters - and mobile operators. Typically, the infrastructure is laid by a broadcaster, and the service is then offered by the broadcasters themselves as a free-to-air, dedicated service and by the mobile operator - as part of the rich media bouquet offered on the carrier’s mobile phones. In most cases the content will be regular TV content such as sports, news, soap operas, talk shows and adult entertainment, with the exception of movie channels. In the case of mobile phones, obviously a phone maker manufactures the actual device, which is then marketed, by the mobile operator, and then the end user can experience the programming. To give an actual example, earlier this year Vivo began marketing a 3G data card designed by ZTE. The data card enables

viewing of 13 DTV channels comprised of Sports, News and Entertainment. The end user can insert the card into any standard notebook, netbook, or desktop PC to enjoy the mobile TV viewing experience.

On the consumer electronics part of the market, manufacturers that produce PND’s (*portable navigation devices*), PMP’s (*portable media players*) - and other such devices that are able to receive the broadcast signal freely - can simply design and market such devices directly to the consumer via retail stores.

To further increase the potential in broadcast TV, Brazil has also chosen a mobile TV business model that has proven successful in other regions around the world. The service in Brazil will be free of charge - at least for the first couple of years, as in Korea and Japan where mobile TV has been most successful.

Brazil has a very significant and fast-growing market for TV-ads, a huge and enthusiastic base of TV consumers, and a phenomenal growing market for mobile subscribers. With a flourishing economy and a rapidly growing number of mobile phone and portable computer users, Brazil is fertile ground for a rapidly expanding mobile TV market.

Beyond Brazil, other Latin American countries also have a quite high potential for successful mobile TV deployment. With a unified standard, and with content-hungry populations, the sky is the limit for mobile TV in Brazil and in the greater Latin American region. The country’s adoption of mobile digital TV cannot be overstated. It is the test bed and the crucible for the industry in Latin America. Success in Brazil, and the lessons learned there, will pave the way for the mobile TV revolution throughout the continent. ●

SMS and voice convergence in Latin America

by *Ronaldo Venci, Vice President, CALA Region Sales, Movius Interactive Corporation*

Voice, however saturated and commoditised, with SMS close behind are the keystones of Latin American operators' business models. New voice and SMS applications using existing infrastructure require little investment to drive new profits. Voice/voicemail-to-text via SMS solutions are ideal in this market where, often, people simply call briefly, or SMS, to ask people to call them back. Since a growing number of people in the region only have mobile phones, there is growing demand for handsets with multiple numbers.



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Ronaldo Venci earned an Executive MBA in General Management from the International Management Business School São Paulo, a MSc in Finance and Administration from Fundação Getulio Vargas and a BS in Mathematics and Computer Sciences.

New voice applications based upon the highly popular, omnipresent, SMS services in Latin America, could be a new source of quick profits. Requiring little investment, it is ideal for carriers looking for a return on their existing investment in networks as the region moves forward to 3G and 4G. Voice, however saturated and under pressure of commoditization, is still king in the region and SMS follows closely behind, but with a very different use profile with each carrier and country.

In a part of the world which now has more than 500 million mobile users, carriers

are looking at new ways to exploit the success of SMS with similar applications. One of the drivers for this trend is the rise of the iPhone, which has an embedded visual voicemail application. While some people are adverse to retrieving or leaving voicemail messages, visual voicemail has made voicemail a more user-friendly way to communicate.

Another application that has proved popular in much the same way as SMS is voice (and voicemail) to text solutions. Unlike past offerings, where human intervention was often needed to convert voice to text,

recent technologies are fully automated and therefore more cost-effective and faster. The beauty of the newer services is that one can receive a voicemail to text message in a SMS format and reply via an SMS. There is no need to actually place a call back, so the process is much quicker, less expensive and less intrusive - especially when the other party is unavailable or busy.

Features like this are very important in Latin America, because 90 per cent of the market is pre-pay and CPP (*calling party pays*) predominates. The ARPSs (*average revenue per subscriber*) are among the

“Latin America’s carriers are already using the latest networks and providing devices to take advantage of the facilities they provide. It will be interesting to see during the next few years how a combination of services like SMS and multiple line device capability will help carriers build revenue while helping users with the sort of communication that best suits their needs and budgets.”

lowest in the world, at around 10 to 15 US dollars, since users tend to use the cheapest possible ways to communicate; often they simply call briefly and ask people to call them back! This is why SMS is ideal.

The many ways you can leverage SMS in a voice - and the soon-to-be widespread 3G world, have made carriers think more deeply about ways to keep their subscribers by offering more convenient and user-friendly ways to communicate. Innovative call completion alternatives, such as those that build on the popularity of SMS, will be important priorities for carriers because they take advantage of the large, existing, investments carriers have made in recent years just to keep up with the growth in voice and data traffic.

Similarly, now that the wireless penetration in many markets is now over 100 per cent, wireless carriers can offer subscribers the possibility to use more than one phone number on a single handset, without having to resort to double SIM solutions.

People carry more than one handset for a variety of reasons:

Business users - Mobile’s early adopters were the business travellers who needed an easy way to communicate while on the go. The use of mobile by business has expanded due to today’s global, 24-hour business environment. The expanded workday makes separating business and personal life difficult, since individuals must be accessible all day, every day.

Entrepreneur - Many entrepreneurs and small business owners actually run multiple small businesses. An example would be the car salesperson who also owns a couple of rental properties. When their phone rings they cannot tell if it is someone seeking a new car or a renter calling to explain why this month’s rent will be late; they get interrupted regardless. They must respond to all calls with equal priority.

Multi-lifestyles - Most people have different priorities for each of their personal contacts - not all have the same importance - and would like the ability to

segment their personal lives. A father will give greater importance to a call from his children because they need a ride home than a friend who just calls to chat about last night’s game. Currently, however, all calls are likely to come into one number and the consumer’s only means to segment the calls is via screening the caller ID.

All these are examples of why having multiple phones seems so necessary. Since the number of landlines is falling drastically around the world, the number of people requiring multiple mobile lines seems likely to increase significantly. In 2009 for example, North America, Europe and Asia Pacific all saw a decrease in landline penetration per household. In the US, a recent study by the Yankee Group reported that 28 per cent of respondents did not even have a landline phone. This well-documented trend in individuals dropping their landline is a consequence of growing consumer reliance on their mobile device as their exclusive telephone.

While the mobile phone has made connecting to individuals much simpler because a mobile phone is almost always with its owner, it has created a new issue. The underlying problem, as outlined above, is that many types of mobile users do not necessarily want to be available to all callers at all times. Therefore the mobile phone often presents a dilemma; although in some respects mobile phones make life simpler they also introduce new complications. People have multiple roles and personas that they prefer to keep separated.

We do not need a detailed study to show that carrying multiple phones is inconvenient and expensive. It is much simpler and convenient to have multiple phone numbers on a single mobile device - and the market seems to agree. A recent US-based study by Frost & Sullivan shows that more than 60 per cent of individuals with multiple phones would like to be able to have multiple phone numbers on a single device. To be successful phones with multiple numbers would need:

- Multiple billing options;
- separate voicemail boxes;
- ability to control the service by turning individual lines off - and automatically forward to a separate voicemail - and back on as desired;
- ability to out-dial as well as receive calls from second numbers;
- and, ability to receive and send text messages associated with the second number.

A recently announced entry in this market is the Side-LineSM service that Telefonica plans to roll out in 12 Latin American countries. Side-Line allows multiple numbers on a single phone. With this service, calls placed to each number are uniquely identified so the subscriber knows for which phone the call was targeted. While calls to the second number can be directed to an existing mobile phone the subscriber can also change their settings so that these calls are forwarded instead to a personal, voice-messaging system. SMS notifications of new messages received are sent to the primary mobile phone so the subscriber is aware they have a message waiting even if they are only watching one of their numbers. These SMS messages include details on who called, when they called and the length of the message. The subscriber can click on the link in the message to listen to it. After listening to a message, subscribers can decide whether or not to call the person back.

So, whether we are talking about a basic user who wishes to keep their outgoing costs to a minimum - or the advanced user who merely wants to simplify their lives - SMS and voice applications are at the very heart of this vibrant and expanding market.

Latin America’s carriers are already using the latest networks and providing devices to take advantage of the facilities they provide. It will be interesting to see during the next few years how a combination of services like SMS and multiple line device capability will help carriers build revenue while helping users with the sort of communication that best suits their needs and budgets. ●

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Faster than a speeding bullet - broadband growth in Latin America

by David Berrios, Manager of Business Development for Latin America, NTT America, Inc.

Broadband of all sorts - but especially mobile - and converged broadband-based, services such as triple and quadruple play have been the force behind telecom growth in Latin America. The demand for next-generation high data-rate services is not only coming from customers, but from Government initiatives such as national broadband build-out projects and local versions of One Laptop per Child. The high cost of cable capacity, mostly due to lack of competition, still holds back truly affordable international broadband service.



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David Berrios holds a BA in International Business and Marketing from Washington State University and is a native of Barcelona, Spain. He is fluent in Spanish, French and Catalan.

It is no secret that the world of telecommunications in Latin America has seen staggering growth in the past few years. Five years ago carriers were dealing with STM-1 or STM-4 based networks, today they are trying to meet demand with 10GigE solutions. The pre-YouTube, pre-Twitter, pre-3G and even (gasp...) pre-iPhone days now seem like a walk in the park. Not even the global economic crisis has put a damper on this growth. In Mexico, for example, Cofotel, Mexico's telecom regulatory agency, reported that Mexico's telecom sector has been averaging a ten per cent quarterly growth despite the huge hit the country has taken during the financial crisis.

The case of Mexico is not unique in the region. According to Point Topic's Global Broadband Statistics report, Latin America's broadband subscription growth rate is second in the world behind only Eastern Europe. Since the average broadband penetration rate is just above five per cent, we can easily understand that growth and expansion will continue strongly in the foreseeable future.

Drivers of growth

On a recent trip to South America, I attended two very interesting industry events. Although both events had a different focus, a common thread was discernible throughout - broadband is king. Its growth in the region

is driven by mobile broadband, converged services over broadband (triple and quadruple play) and Government initiatives that encompass elements of both mobile and fixed broadband.

In Latin America, the demand for next-generation services that require high data-rate connections is not only coming from customers, but is also being pushed by Governments throughout the region with initiatives such as Un Computador por Niño (UCPN), the region's version of One Laptop Per Child. These Governments are opening new blocks of spectrum so operators can deploy 3G services, WiMAX and, down the road, technologies such as LTE/4G.

“Latin America is one of the most exciting marketplaces today. Technologies that didn’t quite catch on in other areas have taken flight in this region. Throughout the most recent global crisis, Latin America has shown its resiliency.”

Given the geographic characteristics of the region, mobile technology is an excellent way to expand coverage with minimal capital investment and provide users with affordable services. That is true for both urban and rural areas throughout Latin America. Companies like UNE in Colombia have been able to connect urban centres, leveraging WiMAX technology in a way that is both efficient and affordable to the user. Countries like Chile make use of WiMAX technology in vast stretches of remote territories, while Brazil sees mobile broadband as a key addition to its Government’s National Broadband Plan that aims to bring broadband to 75 per cent of Brazilian households by 2014.

Not all broadband growth in the region is mobile. Latin America is seeing some very interesting projects develop in different areas. Regional companies in Brazil, Chile and Mexico are diving directly into the world of Fibre-to-the-Home (FTTH) in a way only seen in countries like Japan. In Brazil, Curitiba-based GVT has built a fibre network in multiple cities and is growing by leaps and bounds adding new localities to its network every month. Through such infrastructure the company can deliver voice, Internet and television, which should help GVT deliver content produced by its new owner, the French media behemoth Vivendi. Chile has similar examples; companies like GTD and VTR are now offering triple play over FTTH.

Needless to say, the biggest players in the region, such as Telmex and Telefonica, offer their own flavours of mobile and fixed broadband. However, it is the smaller players in the region that showcase the true potential of these markets and the ability of non-traditional companies to bring new and creative solutions to the table to challenge the status quo. Innovation finds a perfect ally in these companies.

IP leads the way

Latin America is quickly developing its telecommunications sector, largely fuelled by aggressive broadband adoption rates and endless potential. Customers want their iPhones, YouTube access, and integrated communications, and this forces ISPs and carriers to stretch their network resources to accommodate these requirements.

In Latin America today, according to TeleGeography, domestic IP traffic accounts for about 35 per cent of total traffic, while international IP traffic accounts for the remaining 65 per cent. International traffic is either passed to an upstream provider or peer within the region, which then carries the traffic on its own network to the US or Europe, or it can be carried on the local operator’s own network to the US or Europe. Either solution is valid and effective. However, when dealing with the region’s high growth rates, scalability is the name of the game. Scalability is easier to achieve by connecting to upstream providers for part or all of a network’s traffic.

The first issue we find in dealing with this situation is the lack of choice in the cable systems connecting the US and Europe to Latin America. The small number of competitive offerings has kept cable capacity pricing, by basic law of supply and demand, significantly higher in Latin America than in other regions of the world. This limitation has had a deep impact on the quality and cost of services in the region and, therefore, upon the future of regional initiatives for broadband.

The high cost of cable capacity makes connecting to upstream providers in the US and Europe a losing proposition for local providers. It has also kept some international carriers and ISPs from establishing a regional presence in Latin America. The combination of these two factors reduces competition in the region, keeps IP transit prices high and potentially reduces the quality of the customer experience. Therefore, an important contributor to both regional development and the success of Government initiatives will be in the region. This will foster healthy competition and increase the choices available to local carriers, which, in turn, will encourage foreign investment. Overall, an increase in competitive cable offerings will benefit the region as a whole.

IPv6 now

Local markets can also benefit from the adoption of new technologies such as IPv6, the next generation Internet. IPv4, the protocol used on the Internet for over 20 years, can no longer meet the long-term requirements of industry or Government. The next version of the Internet Protocol,

IPv6, offers a variety of benefits including a vastly expanded address space, scalability, better security, lower capital and operational expense and a number of enhancements for multicast and quality of service support.

According to ARIN (the *American Registry for Internet Numbers*) and LACNIC (the *Latin American and Caribbean Internet Addresses Registry*), the supply of new IPv4 addresses will run out in less than 18 months. This raises a number of issues for network planners, the first and most important being: What will we do when there are no more new addresses? Some ISPs, carriers and content providers in the region are not waiting for the answer; they are tackling the issue head-on. Companies like Telconet in Ecuador, UOL in Brazil and Entel in Bolivia are either in the process of making their networks fully IPv6 compatible, or have already done so. Putting off the transition today will only cause issues in the near future.

Exciting future

Latin America is one of the most exciting marketplaces today. Technologies that didn’t quite catch on in other areas have taken flight in this region. Throughout the most recent global crisis, Latin America has shown its resiliency. The LA telecommunications sector has shown the sort of growth needed to encourage investors. In a relatively short time, Latin America’s telecommunications sector has taken off ‘faster than a speeding bullet’ and shows no signs of slowing down.

The continued healthy growth of Latin America depends upon understanding and learning from the mistakes made in other countries when implementing new technology and business concepts in the region. In addition, further opening up from a commercial and regulatory perspective will guarantee Latin America’s position as a true player in the world market. The more inviting the region becomes to foreign investment, the more the region will grow as a result. Beyond that, the sky is the limit. ●

Connectivity as commodity

by Rick Woods, VP Americas, Volubill

Broadband is a finite resource. Nevertheless, to encourage subscriber growth and build short-term revenues, broadband providers have acted as though technology had no limits. All-you-can-eat data and voice plans drove bandwidth consumption through the roof. Prices wars cut revenues and profits, caused service outages, and broadband became a commodity. Segmented pricing schemes are efficient; they avoid waste, prevent abuse, create value, ensure that adequate connectivity is available and treat customers fairly - they only pay for what they need.



Rick Woods is the VP Americas at Volubill; he is responsible for the business operations in North America, the Caribbean, and CALA. Mr Woods has 25 years of experience in telecommunications; he has worked with service providers in every global market. Prior to joining Volubill, Mr Woods was a Vice President in the Product organization at Intec Telecom Systems.

Rick Woods holds a Bachelor of Sciences degree in Computer Science from the Virginia Polytechnic Institute and State University.

Enabling universal connectedness in 21st-century society is a worthy, necessary, goal. Increasingly, being connected means having high-speed Internet access. This is why many Governments around the world have launched connectedness initiatives, calling them national broadband plans. These plans echo the growing sentiment that universal connectedness should be considered as important as food, shelter or healthcare. Connectedness, however, has a different characteristic than food, shelter, and healthcare; it isn't necessary to sustain life. Connectedness offers quality of life.

The importance of connectedness

Being connected has always been important to humans. The Incan civilization, for example, had a 2,500-mile highway stretching between modern-day northern Ecuador and southern Chile - the Chasquis. Literally meaning 'to exchange', it was an extremely rapid method of communication. So great was the need to stay connected that the runner messengers who traversed it trained since childhood to help bring information hundreds of miles in less than a day.

Since the Chasquis, the means to 'connect' have grown faster, more sophisticated, more diverse and more effective. Today, the Internet is the best means to stay connected, and it is helping to realize some of the most important social reasons for connectedness: education, awareness, democracy, and well-being.

The Pew Research Center's Internet and the American Life project surveyed US teenagers and their parents about the importance of the Internet in education: ninety-four per cent of the teens who have Internet access said they used

the Internet for school research. Eighty-seven per cent of the those teens' parents said the Internet helps students with their schoolwork, and 95 per cent said learning to use the Internet is essential or important for today's children.

In 2007, a survey of physicians in ten Latin American countries asking about use of the Internet found that 55 per cent used the Internet as their number one source of professional information. Considering that South America's Internet penetration has increased more than 900 per cent in the last decade, one can only imagine that the Internet has become even more important for healthcare professionals.

In June 2009, the US State Department took an unusual interest in the software update schedule of one of the hottest Internet start-ups: Twitter. The reason? So that Iranian citizens using Twitter could protest the country's allegedly corrupt June 12, 2009 presidential election and would not lack a medium to voice their dismay. At the peak of the election controversy, 221,744 Tweets including the term 'IranElection' were sent in one hour. More than 2.2 million blog posts on the subject were published in 24 hours. More than 3000 videos, many taken by Iranian citizens using their cell phones, were posted to YouTube in one day.

Statistics like Iran's, which occurred largely through the use of mobile phones, reveal the other important component about being connected today: How do we connect? How do we get access?

The Incan Chasquis provided connectivity and access. It was the connectivity technology of its day. Today, much of that same area is blanketed with high-speed 3G HSPA mobile broadband capable of transferring data thousands of miles in seconds. Thirty-five communities in the US sport even-faster 4G Wimax-based networks, and satellite network providers bring coverage to more remote regions. National broadband plans like Finland's - which made it a legal right for its citizens to have a domestic Internet connection - are proof that broadband connectivity has achieved 'necessity' status.

Broadband - a bottomless pit?

With today's connectivity technologies, it's easy to take being connected for granted. And many people have. The overwhelming success of the iPhone is proof. The popularity of high bandwidth applications has caused network congestion to a degree that normal service delivery is disrupted. This is a well-known issue. It would be easy to conclude that if only the networks could simply provide more bandwidth, things would be fine. In the short-term, yes, that would help. But there's a more fundamental challenge underneath.

Broadband is a finite resource just like anything else. There are physical limits to how much cable can be laid for fixed-line networks, and there are only so many radio frequencies available to transmit mobile communications.

Nevertheless, over the last several years, to encourage subscriber growth and support short-term revenue needs, providers and consumers of broadband acted as if the technology had no limits. All-you-can-eat data and voice plans drove bandwidth consumption through the roof and pushed provisioning costs higher for bandwidth-hungry services like Netflix and Pandora. Prices and revenues for these unlimited plans dropped lower and lower as providers engaged in a price war to gain subscribers. Profits fell, service outages became commonplace and neither providers nor subscribers were winning the fight.

Now we get to the nub of the reason for why broadband is approaching commodity status. Why was such a price war waged? Because consumers in these markets perceived broadband as a service with no differentiation, and providers didn't offer them anything in the way of unique value that proved otherwise. Subscribers got as much as they wanted, with no value added, for an ever-shrinking price - the definition of a commodity.

There are certainly parallels between broadband and other commodities. Take oil for example. Demand for broadband data will outpace supply for the foreseeable future, much like oil. Also like oil, broadband service lacks any real differentiation. Oil is oil - broadband is broadband.

But broadband as a commodity presents a problem. Most consumers don't use commodities with much respect. As broadband has become faster and cheaper people treat it with a similar disregard to how they treat oil, never thinking it could run out, but, at times, it has run out. Without better protection, universal connectedness becomes harder to achieve. There is a socio-economic need for more connectedness. Broadband must be a readily available resource, but neither the consumer nor the supplier are well served if broadband becomes a commodity.

A better way

It is a commonly held belief that economic models in developed regions like Europe and North America are more sophisticated, mature and sustainable than those in developing regions. The generally perceived goal, usually, for any country in a developing region is to emulate the economic practices of a European Union or North American country.

In the case of broadband connectivity, it may be the other way round. Operators in the emerging world, like Africa and the Middle East, many of which we currently work with, are in a much stronger position to avoid the trap of broadband commoditization. Unlimited plans are rare and these operators have been much more adept at offering subscribers a truly personalized experience. The result is a population that does not expect to get unlimited quantities of a finite resource.

New mobile broadband pricing plans that have ditched flat-rate models protect the communications service providers, but broadband providers need to go further. They must leverage the systems and tools at their disposal to add transparency, personalization, quality guarantees and price incentives to the customer experience.

Flat rate, 'all you can eat', pricing schemes are inefficient.

- They result in low bandwidth users subsidizing high bandwidth users. Why should a casual Internet consumer who uses email and web surfing pay the same as a gamer who consumes a tremendous amount of bandwidth?
- They prevent a segment of the global market from affording broadband access. Some people simply cannot afford to pay US\$40 per month for a broadband plan, but they could pay US\$10 for a plan that offered something less than premium service.
- They prevent highly demanding users from realizing a high-quality experience because they must share a common service with the general population.

On the other hand, segmented pricing schemes are efficient. They avoid waste, prevent abuse, create value and ensure that adequate connectivity is available.

Connectivity's finite nature means that providing universal access in modern society, while certainly worthwhile, is a tricky balancing act. Treat it as though it was limitless, and it becomes apparent it is anything but. If broadband providers utilize policy control and data management tools they can achieve the differentiation needed to avoid the negative spiral towards commoditization. They also get happier, more loyal customers who don't pay for services they don't need, get a better experience and feel like they have a broadband provider that cares about their specific needs. ●

Crack the short code - send a message to consumers

by Alfred de Cárdenas, Executive Vice President, Americas, Syniverse Technologies

Latin America's current mobile penetration is 88 per cent, far surpassing fixed penetration and SMS texting can reach nearly every mobile user. Better yet, since SMS is so inexpensive any mobile user, even low-income prepaid subscribers, can afford to respond to messages. It is also an inexpensive way for companies to exactly target consumers of interest and, by using the new Latin America common short code (CSC), let these consumers opt-in, respond and bond with brands that appeal to them.



Alfred de Cárdenas is the Executive Vice President, Americas at Syniverse Technologies; he is responsible for the North America, and Caribbean and Latin America regions. Before joining Syniverse, Mr de Cárdenas was with Nortel Networks, most recently as general manager of converged multimedia networks. He also held a number of other key leadership roles at Nortel, including vice president positions in carrier support and operations, sales, marketing, customer care, and network operations as well as assignments in Colombia and Brazil.

Alfred de Cárdenas earned his MBA from Nova Southeastern University and his bachelor's degree in industrial and systems engineering from Florida International University.

Connectedness is an essential component of any enterprise's relationship with consumers. These audiences value the brands with which they feel truly engaged, which means enterprises must go beyond simply capturing attention and find ways to further foster relationships.

Finding a way for organizations to build brand connections with consumers in Latin America can be particularly challenging because of the region's size and inherent diversity. Each country has its own unique demographic, cultural, Governmental and historic climates, all of which affect overall consumer preferences and behaviours.

To overcome these challenges and grow, each enterprise, whether based within or outside this dynamic region, must find a way to provide its Latin American consumers with useful, relevant information specifically tailored to individual needs and interests. And when it comes to connecting with these target

audiences, brand owners must ask one key question: "What's the most effective way to reach and build bonds with my customers?" The answer to that question is simple: mobile.

With the region's mobile penetration at 88 per cent - and more than 100 per cent in many major cities - it's clear that consumers in Latin America have truly embraced mobile as a way of life. The go-anywhere capabilities of mobile make it the preferred communication method in many areas, largely surpassing traditional fixed connectivity. For example, in Argentina, there are 115 mobile subscriptions for every 100 persons, compared to the 25 fixed-line telephones per 100 persons, according to the CIA World Factbook.

Connecting the dots 160 characters at a time

Considering the region's cultural and socioeconomic diversity, it's no surprise that the ways Latin American consumers use their mobile devices vary greatly as well. From

the small per centage that uses smartphones to access the mobile Internet, to the many consumers who purchase a SIM card to use in a basic device, and everything in between, the use cases are vastly different. There is, however, a single medium with the ability to reach nearly every mobile user in the area, regardless of the device in use or how a subscriber uses it: SMS texting.

From the most basic feature phone to a next-generation smart phone, almost any mobile device can send and receive SMS text messages and, with the penetration of smart phones currently in the single digits in the region, it's clear that there is a significant addressable market that can only be accessed via SMS.

Because of SMS's ubiquitous, affordable nature, it's easy to understand why subscribers in Latin America have adopted text messaging as their go-to form of communication. According to Portio

Research, consumers in the region sent roughly 250 billion SMS messages in 2009, and that number is likely to increase to more than 400 billion by the end of 2014. One factor driving these figures is the fact that many prepaid subscribers are opting for SMS plans over voice because of how effective and affordable it is to communicate via text.

Popularity aside, choosing SMS as a medium to connect with consumers also has the advantage of immediacy. For example, while a broadcast or print advertisement requires viewers to take action the next time they are in a store or at home on a computer, a mobile message allows brands to bond with consumers on the spot, so these users can respond anytime, anywhere.

SMS brings a number of additional benefits for enterprise brands beyond reach and immediacy, including low cost, as well as high visibility that has been shown to result in improved consumer responsiveness.

Achieving two-way connectedness

Optimal connectedness and engagement between an enterprise brand and its consumers can only be achieved by facilitating two-way communications. In other words, brands must not only send messages, but they also must allow consumers to reach out to them, effectively joining the conversation with their brands of choice.

Brands that allow mobile users to connect with them proactively are able to target their marketing resources directly to the consumers who are most interested in their messages. Moreover, communicating with users who have opted-in allows enterprises to tailor communications to individuals based on their interests and preferences.

When it comes to achieving a new level of connectedness, short codes - five- or six-digit numbers that serve to address SMS messages from consumers to enterprises - have emerged as ideal vehicles because of their simplicity. A mobile user can reach an enterprise or opted-in to a promotional campaign simply by composing an SMS and sending it to the easy-to-remember short code belonging to that organization.

Forging new connections through short code communications not only helps enterprises achieve marketing goals, but also gives consumers the on-demand services they desire. Already in Latin America, short codes provide a popular way for consumers to purchase mobile content, like ringtones

for their phones. The truth is, the possible uses of short codes to create new bonds between consumers and brands are limited only by an enterprise's imagination.

Some examples include using short codes to allow consumers to enter contests, respond to surveys, or cast their votes for contestants on television shows, as was done with *American Idol* in the United States. Furthermore, short codes can be valuable tools for product or service promotions, putting information, such as a coupon or special offer, directly in an interested consumer's hands on demand.

What's the catch?

It's clear that short codes are an excellent tool to connect enterprise brands with their target audiences, providing consumers with the engagement they desire. So what has prevented extensive rollouts of these types of campaigns across Latin America in the past?

Until recently, fragmentation has stood in the way of widely deployed short code marketing campaigns in this region. If a brand wanted to incorporate a short code into its marketing efforts to reach audiences across Latin America, it would need to endure the extremely tedious and impractical process of seeking out and leasing a short code from each individual mobile operator in every country in the region.

This situation traditionally has been a tremendous obstacle to the growth of mobile connectedness between brands and Latin American consumers. Fortunately, the different components of the short code ecosystem, including mobile operators, short code aggregators, content providers and application developers, have all lined up behind the recently announced Latin America common short code (CSC) initiative administered by the CTIA-The Wireless Association, which allows countries in this region to break down traditional messaging barriers.

This new initiative allows enterprises to simply visit the CSC administrator website (www.codigoscortos.com) to register a single code that will work for a unified campaign across all participating operators in more than two dozen countries instead of having to register and purchase an individual code for each market. This streamlined process means a significant reduction in the amount of time and money enterprises have to invest, leaving them with more available resources to focus on developing content to build relationships with their high-value customers.

Proven success

Ample proof of the effectiveness of common short codes as tools for fostering connectedness already exists. Since CTIA launched a similar CSC initiative in the United States in 2003, organizations such as professional consumer brands, sports teams, television networks, movie ticket vendors, restaurants, non-profits and even political candidates have enjoyed more fruitful relationships with many of their target audiences as a result of launching comprehensive short code campaigns. These enterprises have found that consumers are much more likely to respond to a short code campaign than an email campaign, indicating a clear preference for communication through this medium.

In 2010, CSCs helped connect US mobile subscribers to the citizens of a country in need. When the devastating earthquake struck Haiti, several charitable organizations turned to CSCs to help raise funds for the millions of people affected by the tragedy. The American Red Cross alone raised more the US\$30 million by encouraging Americans to text 'Haiti' to its short code - an unparalleled amount in the world of mobile donations. The organization credits the campaign's success to the short code's ability to reach a wide audience immediately via mobile communication, rather than requiring potential donors to send in a check or enter their credit card numbers into a website.

Stepping up to the plate

With the growing pervasiveness of SMS and the recently launched pan-regional Latin American CSC initiative, there has never been a better opportunity for enterprises to connect with Latin American consumers. CSCs have a proven track record of success in the United States, and CTIA predicts rapid adoption of CSCs in Latin America as a result of its initiative.

Looking forward, the growth of CSCs will help foster continued increases in engagement between consumers and brands across Latin America. SMS is only the beginning, as CSCs foster innovation to incorporate new alternative data sources and grow content streams. With this capability, brands can take connectedness with their consumers in Latin America to a whole new level. ●



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