



Striving for Mobile Leadership in Latin America

An interview with Juan Manuel Wilches Duran, Deputy Director of Spectrum Management and Planning at Colombia's National Spectrum Agency (ANE)

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Countries around the world are at various stages of converting their television broadcasting from an analogue to a digital signal, a technical shift that results in a far more efficient use of the airwaves, or radio frequency spectrum. This releases a 'Digital Dividend' of spectrum that can be allocated to other wireless services, such as mobile broadband.



Colombia was the first country in Latin America to announce that it would license the 700MHz Digital Dividend band for mobile telecommunications and, in May 2012, the first to announce it would adopt the Asia Pacific Telecommunity (APT) band plan.

At the heart of these changes is Colombia's National Spectrum Agency (ANE), which is an advisory body in service to the Ministry of Information and Communication Technology (ICT). Juan Manuel Wilches Duran, Deputy Director of Spectrum Management and Planning at ANE, has worked for the agency since it was formed in 2010. During the previous six years, he held various advisory roles at the Communications Regulatory Commission (CRC), the telecoms regulator in Colombia.

How prominent is mobile telecommunications in Colombia's national broadband plan?

Wilches Duran: Colombia's national broadband plan, Vive Digital, is focused on promoting internet use nationwide to reduce unemployment and poverty and to increase the country's competitiveness.

The World Bank, in its 2010 report 'Building Broadband: Strategies and Policies for the Developing World' recommends using spectrum as a way to rapidly achieve broadband connectivity, providing 'last mile' access for as many subscribers as possible. So mobile telecommunications plays an important role in the national broadband plan

as one of the main drivers to reach the plan's objectives.

Consequently, it was determined that a total of 300MHz of spectrum would be auctioned for mobile in the 1.9GHz, AWS (Advanced Wireless Services, 1.7/2.1GHz), 2.6GHz and 700MHz bands between 2010 and 2014.

Why does it make sense for Colombia to align with the APT band plan?

Wilches Duran: To take the decision regarding the band plan for the Digital Dividend, ANE considered technical and market criteria in analysing the band plan options proposed by the International Telecommunication Union (ITU) for 700MHz. The APT band plan provides the greatest social and economic benefits for Colombia and Latin America. The main conclusions of ANE's analysis are that the APT band plan:

- offers 50% more spectrum for international mobile telecommunications (IMT) than the United States' band plan,
- uses spectrum more efficiently,
- protects against interference from other services, such as television broadcasting,
- potentially comprises 10 times more users worldwide than the US band plan, meaning larger economies of scale for device manufacturers and the possibility of lower prices for customers, and
- offers interoperability among operators using the same frequency band.

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In addition, devices supporting the APT standard will be ready soon, and the network equipment is ready for commercial use at this moment. Taking this into account, Colombia will deploy its first ‘fourth-generation’ LTE trial using the APT band plan at the end of 2012.

The 700MHz band has not been used heavily by broadcasters in Colombia. What have you done to clear the band, and what is the current situation? Wilches Duran: To prepare the 700MHz band to be used for the deployment of IMT, the government took the decision in 2009 to allocate this band to mobile terrestrial services and also to allocate 470–512MHz to digital terrestrial television. In recent months, ANE has been implementing a spectrum planning strategy for the 470–698MHz band, which will continue to be used by broadcasting networks, as well as the 698–806MHz band. Many of the incumbent networks have already been moved to other frequencies, and only a handful of services still occupy the band in larger cities. We have developed the plan for television broadcasting operators in the 700MHz band to relocate to lower bands, while allowing the simulcast of analogue and digital TV stations operating on DVB-T1 and DVB-T2 standards. By January 2013, the 700MHz band will be clear for mobile broadband services covering 60% of Colombia’s population, and 100% by the end of August 2015. The 700MHz band auction is currently scheduled for the third quarter of 2013.

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The government has set caps that could exclude the country’s two largest mobile operators from acquiring any spectrum licences in the Digital Dividend band. What are the pros and cons of this policy?

Wilches Duran: Colombia’s terrain consists of large plains in the south and east and a large mountainous region. Our population is also highly concentrated in the largest cities. To deploy a full set of mobile services across the country, an operator would need a frequency portfolio that effectively supports different services in different geographic areas. This means that upper and lower frequency bands should be used according to the characteristics of each geographic area.

Many studies have concluded that lower bands are appropriate to deploy networks for wide coverage and the upper frequency bands should be used to offer higher network capacity in densely populated areas. Therefore, the IMT spectrum assignment plans for Colombia are looking to provide the appropriate combination of lower and upper bands.

Spectrum caps have been established to avoid spectrum concentration, and have not been defined in terms of which operators may or may not participate in an auction, but in terms of the availability of spectrum. No doubt the issue of the participation of the two largest operators in the Digital Dividend auction will come up during the discussion process that leads to it, and many arguments will be on the table. The administration will have to consider all positions and decide, based on the guidelines that have been in place since 2011, with the goal of generating as much benefit as possible for consumers.

How has the Colombian government engaged with its neighbours — principally Venezuela and Ecuador — in addressing potential interference issues?

Wilches Duran: Colombia’s administration is working with its neighbors to avoid potential interference through the international harmonisation of the 700MHz frequency band and the development of border agreements. Very recently, Ecuador announced its decision to adopt the APT band plan, which will be beneficial for regional harmonisation and facilitate border agreements. In the meantime, we are currently discussing the best approach for the development of these agreements with Venezuela and Ecuador, which we expect to be discussed and adopted in 2013.

What are the most significant benefits that mobile broadband access will create for Colombian people?

Wilches Duran: According to several reports from UNCTAD and the World Bank, internet development reduces poverty, creates direct and indirect employment and increases productivity and competitiveness in any country. In addition, as more people are able to access new and improved broadband services, their quality of life is improved. Based on this, the Colombian government through the Ministry of ICT developed Vive Digital. Its main objectives are:

- to connect 50% of households and small and medium-sized enterprises to the internet,
- to quadruple the number of internet connections, reaching 8.8 million by 2014, and
- to triple the number of municipalities connected to the information highway through nationwide fiber-optic networks.

The Ministry of ICT conducted a study that revealed a very small proportion of people with lower incomes pay for internet access at home — not because they can't afford it, but because they do not see value in it. What is the government doing to educate people and give them basic internet skills?

Wilches Duran: Vive Digital is built over the structure of a digital ecosystem which has four dimensions: infrastructure, services (focused on improving the supply of ICTs in the country), users and applications (with an emphasis on enhancing and generating demand). A large number of projects and initiatives have been designed to promote ICT adoption and use by the Colombian population, focusing on the last two dimensions — users and applications. Some of these include:

- creating a new operating model for community access centers, to provide connectivity, training, entertainment and service to the people from lower income levels,
- increasing the number of Puntos Vive Digital (community internet access points) to 800 nationwide,
- certifying at least 45% of public officials in ICT use, and
- achieving greater efficiency, transparency and citizen participation by ensuring 100% of national governmental organisations and 50% of local administrations provide online government services.

You represented Colombia at WRC-12, the World Radiocommunication Conference. What was the highlight of that experience?

Wilches Duran: The WRC-12 was the first time for some of the engineers from Colombia to participate in such a large and important event for the industry. If you consider the conference statistics — over 150 countries and approximately 3,500 delegates — you begin to grasp the dimension of it. It was also the first time for ANE to be part of a WRC since its creation in 2010. We experienced, firsthand, the complexities of the discussions that take place during the four weeks, and we came back to Colombia with insights about how to prepare, propose and discuss issues within the WRC. We expect to have a strong group for WRC-15 and are prepared to take the lead on some of the issues that will have an impact on Colombia's ICT industry.

You have some major work ahead of you, particularly with the Digital Dividend auction. What do you think will be the greatest challenge?

Wilches Duran: I believe the greatest challenge for this auction is to find out the best way to assign all the spectrum available and being able to use it as soon as possible, so that all participants have what is necessary to achieve rapid network deployment and to build an offer that suits the needs of Colombian people who still do not have broadband access. We are confident that all the work being done as part of Vive Digital will provide the basis for quick adoption of these new technologies nationwide.

What are you optimistic about?

Wilches Duran: I'm optimistic about achieving the goals set out in 2010. At the beginning they seemed very difficult, almost impossible to reach. However, during these two years we've seen that a National Broadband Plan like Vive Digital is the right way to go about developing internet and getting the public and private sectors in line with one specific goal.

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Securing the Digital Dividend for a Mobile Future

This is one of a series of interviews conducted by the GSM Association that aims to capture the experiences, insights and advice of industry regulators, government officials and others who have spearheaded the transition from analogue to digital television broadcasting, and released part of the surplus spectrum, known as the Digital Dividend, for mobile broadband.

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