Venezuela: NAP: An Opportunity to Improve
Universal Broadband Access?[1]

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Contenido

1. Summary

The Association for Progressive Communications (APC) has called on countries from the Andean region of South America to undertake the research component of the Communication for Influence in Latin America (CILAC) project, aimed at integrating advocacy, research, dissemination and network building around the issue of ICT for development in the region.

Presented here is the research report prepared in Venezuela, entitled "NAP: An Opportunity to Improve Universal Broadband Access?", undertaken between November 2008 and April 2009.

The central core of this report is a chronological and political overview of the factors involved in the management of internet traffic in Venezuela and more specifically, the process of negotiations for the creation of a network access point (NAP), including the mechanisms for participation by different stakeholders.

The report is organised into the following sections:

1. Introduction: Provides the reader with context to highlight the importance of the subject of this research report.

2. NAP: An internet traffic light for South America: Describes the characteristics of a NAP and its impact on internet access services, and provides a brief overview of NAP initiatives in Latin America and their role as a means of promoting cooperation among different actors to strengthen the telecommunications sector in the region.

3. The case of Venezuela: Provides a brief history of the legal, economic and structural framework of the telecommunications sector in Venezuela, as well as the actors and contexts that have impacted on negotiation processes for the creation of a NAP in Venezuela and the factors that may have impeded the implementation of this initiative. This section is based on bibliographic sources, media reports, interviews with key actors and other sources, and is organised in three parts:

    *   The actors and the context

    *   CANTV: The dominant operator

    *   NAP or no NAP: From an economic solution to a political problem

4. The report closes with a few brief conclusions from the perspective of the CILAC project's aim of influencing public policies.

2. Introduction

Based on the premise that there continues to be a fundamental shortage of universal and affordable access to telecommunications infrastructure in Latin America, a review of mechanisms aimed at remedying this situation through national public policy decisions could serve as an important contribution. A chronological overview of these processes could help in understanding the factors that have hindered the goal of universal access and in identifying possible solutions to achieve the desired outcome.

Despite the cultural similarities they share, every country in the region has responded differently to the promises of broadband connectivity, because the interrelations between stakeholders – in which the state plays a significant role – result in unique political contexts and negotiation processes influenced by unique historical and economic aspects.

In light of the positive impact that could result from internet use in various different areas, such as health care, education and citizenship, a number of international commitments have been adopted to prepare countries to adapt to the new demands of an interconnected society.[3] Commitments around connectivity have focused on developing infrastructure with the appropriate technology and planning to provide affordable, high-quality access to internet services and applications. In Latin America, the progress and pace of individual countries in responding to this challenge have varied.

As one century gave way to another, different agendas and processes were being pursued across the region to fulfil the commitments of universal access. Around the end of the 20th century, a technical problem related to internet traffic and the broadband market emerged and was recognised as hindering the quality of communications in the South American countries: the long distance that most internet traffic had to travel outside of the region and then back again, even in the case of local communications.

Unlike radio, television and telephony, the internet is based on a logic of distributed systems. This generates complex communication ramifications and the possibility of a robust system reinforced by built-in redundancy, which gives it the capacity to respond efficiently in the event of service failures by rerouting data along an alternate path. However, this logic requires connection centres that serve as a shared point from which information can be delivered and channelled to different levels and hierarchies. This means that internet architecture is a complex system involving national, regional and international internet service providers (ISPs), as described here:

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[3] For example, the two phases of the World Summit on the Information Society (Geneva 2003, Tunis 2005) resulted in the Geneva Declaration of Principles and Plan of Action and the Tunis Commitment and Agenda for the Information Society. The Rio Commitment and eLAC 2007 Plan of Action demonstrate the importance of this issue for Latin America and Caribbean, while the ICT component of the Andean Development Corporation's Andean Competitiveness Project promotes policies in this field.

The lowest level of the hierarchical structure of the internet is made up by local ISPs, which provide service to a highly specific city or region. These ISPs usually offer only web-hosting, electronic mail and internet access services to end-users. Next come the regional or national ISPs, which encompass a much larger geographical area and generally offer additional interconnection and traffic services to larger service providers. Finally, at the top of the pyramid, there are the IBPs (internet backbone providers), which are global providers of internet service and which, through economic agreements of different kinds, are interconnected with other IBPs that are considered its peers. The IBPs are actually the wholesalers of the internet service market. Each ISP is the client of one or several higher-level ISPs, buying or trading access to larger portions of the network. Dn Consultores, p. 15.

Internet backbones – the main "trunk" connections that link the different ramified networks of internet traffic in Latin America – and global internet service providers are primarily located in the United States.[4] This meant that initially, all local, national and international data circulating on the internet in the Latin American countries inevitably had to pass through these backbones before returning to their final destination in the region. This situation entailed longer delays in data recovery, the loss of data packets and, of course, higher costs for internet end-users, since the services of international service providers had to be purchased for all internet traffic. This posed a significant obstacle to the growth of the sector in Latin America.

The creation of network access points (NAPs) was identified as a means of remedying this problem. By facilitating the exchange of internet data traffic within a particular geographic area (a country or region), it would be possible to avoid channelling traffic through international routes when there was no need for it to leave the area.

It is generally assumed that the creation of national and regional NAPs will not only improve the quality of internet access in the countries of Latin America, in terms of connection speed and reliability, but will also contribute to lowering the costs of service by eliminating expenditures on international service providers. (Cavalli, Crom y Kijak)

A NAP creates a means of direct local access to the network. Since data traffic no longer needs to be routed internationally, local data can be exchanged at a higher speed and connection costs are lowered for internet service providers, since they only need to pay local rates and thus save on international connectivity costs. This would result in more efficient use of the telecommunications network thanks to the use of local or national channels for internet traffic that originates and terminates in the same country.

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[4] In the 1990s companies in the United States made significant investments in infrastructure to carry internet traffic, initially developing plans of action in Chicago, New Jersey, San Francisco, San Jose and Washington, DC. Through subsequent investments the country developed a major infrastructural platform with a capacity for international transmission of data packets over the internet that is unique in the hemisphere.

The architecture of the internet results in complex business models for internet service provision, which means that a proposal involving shared objectives requires negotiations among various actors who participate in different ways in service provision and data transmission. End-users usually only deal directly with their local ISPs, but behind these there is a complex network of service distribution involving large and small service providers.

Resolving the routing of national internet traffic in the countries of Latin America through interconnection points like NAPs has been one of the most obvious processes in market negotiations in the telecommunications sector. It generally entails agreements among different operators, service providers and participants in the complex network of internet service provision in each country; the diversity of actors involved makes it necessary to manage market differences to achieve shared goals. The development of NAPs in the region could be viewed as a reflection of the different degrees of maturity in the sector for the pursuit of common objectives in a context of free competition.

Venezuela is one of the few countries in the region that has not succeeded in implementing plans for the creation of a NAP. What are the factors that have impeded its development? What characteristics have intervened in the negotiating process, and under what conditions have the different actors involved formulated their demands and responses? These are the main questions addressed by this research report, which additionally considers the question of whether this situation will hinder potential access to internet services that increasingly require a fluid and reliable telecommunications structure.

3. NAP: An internet traffic light for South America

A NAP is a central point of convergence for internet traffic originating in a determined geographical area (country or region), which is established for the concentration of local internet data and access points within the area, bypassing the need for data to be routed through international networks.

The most important objective of a NAP is the concentration and routing of communications generated within a specific area between users connected to different internet service access networks.

Around the turn of the century the countries of South America sought to promote greater access to the internet, which was viewed as having the added value of creating the opportunity to promote such activities as electronic commerce and content development, as well as other activities requiring greater capacity for data, voice and image transmission.

At the First Permanent Forum on Networks in Latin America and the Caribbean, held in October 1991 in Rio de Janeiro, representatives of universities throughout the region discussed technical, political and academic issues related to a data network that was just beginning to emerge. "The first matter discussed was the creation of a Latin American backbone that would allow for

communication between the countries of the region without passing through a node located outside the region (specifically, in the United States). Various possibilities were analysed but at that point in time there was not a sufficient communication network infrastructure to allow for the development of collaborative projects. This issue was discussed for many years. Governments and the private sector were invited to study alternatives, but in the end, it was time and technology that provided the answers," explained Edmundo Vitale, a Venezuelan academic and founder of the Latin American Networking School.[5]

Almost ten years later, the matter still remained a pending issue on regional agendas. In 2000, the Association of Andean Community Telecommunications Enterprises (ASETA) launched the first stage of the Andean Internet System Project. The main objective of this initiative was "to create a technological platform to interconnect the different internet service providers (ISPs) in each of the countries of the Andean Community through network access points (NAPs) and to interconnect these through the Andean Digital Corridor."[6] After signing a memorandum of understanding, service providers in Venezuela, Colombia and Ecuador interconnected equipment to measure the internet traffic between these countries, in order to design a second stage.

According to ASETA, the results showed low levels of traffic between the Andean countries, which implied that the creation of a NAP would not be economically profitable. This led to the postponement of the proposal until the conditions were in place to undertake the project in a financially sustainable manner. A number of other strategies have since been proposed to integrate the Andean countries in a common structure that would optimise internet service operating costs.

In 2001, the issue was discussed once again at the First Regional Meeting of Internet Service Providers in Latin America, held in Cartagena de Indias. The main objective of this meeting was to study more economical and efficient alternatives for internet connectivity in the region.

In addition to regional proposals like these, whose motivations ranged from economic need to resurrecting dreams of integration, there was also a growing awareness within the countries of the region that in spite of the complexity of the negotiations involved, the creation of central interconnection points was essential to optimise national internet traffic.

Progress in these initiatives followed different paces in different countries. Negotiations tended to be slow, but generally succeeded in moving forward. A number of national NAPs were created, with the private sector as the main driver in most cases, and varying levels of participation by the state or national regulator. The main function of the latter has been to foster the conditions for the

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[5] Interview conducted in March 2009.

[6] For more information see: www.aseta.org

resolution of agreements, guided by public policies around universal broadband access and local content development.[7]

4. The case of Venezuela

4.1. The actors and the context

As the 21st century began, Venezuela shared with other countries of Latin America a growing trend towards public policies that viewed the science and technology sector in the framework of necessary inclusion in the global paradigm of the so-called knowledge society.

Without a doubt, the year 2000 got off to an auspicious start in this regard. Despite an adverse institutional context, characterised by the rigidity and limited capacity of the public structure to confront the great demands of the 21st century for the creation of national innovation systems, the political will in the sector was clearly expressed in the new constitution adopted in 1999, which recognised for the first time in history the strategic nature and importance to the public interest of science, technology, innovation and information services.[8]

As a result, the Ministry of Science, Technology and Innovation was created that same year. Its initial role was the restructuring of existing institutions, which were grouped around this new institution; the development of an appropriate legal framework; and the gathering together of different sectors of society to create the so-called National System of Science, Technology and Innovation. This was followed by the passage of the Organic Law on Science, Technology and Innovation.

With regard to information and communications technologies (ICTs), the most significant measure was the adoption in 2000 of the Organic Law on Telecommunications, which was particularly relevant in that it replaced the Telecommunications Regulations of 1940. After more than 60 years in force, these regulations – the only legal instrument governing the sector during the second half of the 20th century – had little pertinence to the new realities in the sector. Despite the political

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[7] For a more detailed analysis of the state's role in the development of NAPs in South America, see the study by Cavalli, Crom and Kijak (www.idrc.ca/uploads/user-S/11660380021NAPs-Sp.pdf), which describes the main structural characteristics of the NAPs in Argentina, Brazil, Colombia, Chile, Paraguay and Peru and the main actors involved in each process. The study concludes with a few general reflections on the development of NAPs in South America and recommends the effective development of the internet as part of a regional plan aimed at entering the information society.

[8] Article 110 of the Constitution of the Bolivarian Republic of Venezuela declares: "The State recognizes as being in the public interest science, technology, knowledge, innovation and the resulting applications, and the necessary information services, the same being fundamental instruments for the country's economic, social and political development, as well as for national sovereignty and security. To promote and develop these activities, the State shall allocate sufficient resources and shall create a national science and technology system in accordance with law. The private sector shall contribute with resources as well. The State shall guarantee the enforcement of the ethical and legal principles that are to govern research activities in science, humanism and technology. The manners and means of fulfilling this guarantee shall be determined by law." The full text of the constitution is available in English at: www.constitucion.ve/constitucion_view_en/view/ver_arbol.pag

adversities of the time, the new law emerged from discussions in which the main consensus was the need to update the legal framework regulating a sector undergoing exponential growth in telecommunications and a total transformation due to the advent of the internet.

The adoption of this law was followed by the emergence of other legal instruments that came to define the regulation of the new dynamics created by internet use and its impact on the productive, commercial, educational and health sectors. In the space of less than two years, the Venezuelan government declared internet access and use to be national priorities (Decree No. 825) and passed the Law on Data Messages and Electronic Signatures and the Special Law on Computer Crimes, which constitute an advanced legal framework for new transaction mechanisms based on electronic communications.

The Ministry of Science, Technology and Innovation formulated a National Plan on Information and Communications Technologies with the following strategic objectives: the development of a national ICT platform, the creation of an adequate human resources base, the modernisation of the state, and the promotion of ICTs in the productive sector. Specific programmes were implemented to democratise internet access (through the creation of public access centres known as infocentros); to strengthen public institutions through the use of ICTs (through electronic government initiatives); and to foster content development (for instance through the creation of thematic portals). The progress made in each of these areas has depended on the changes in authorities and reorganisation of the public structure for the coordination of the ICT sector.[9]

On 8 January 2007 the Ministry of People's Power for Telecommunications and Information Technology was created under Decree No. 5,103 on the Organisation and Functioning of the National Public Administration. This new institution established a new national plan – the National Plan on Telecommunications, Information Technology and Postal Services 2007-2013 – whose five focus areas are universal access to ICTs; technological sovereignty and independence; the transformation of the state; the use and application of ICTs as instruments to promote development; and the creation of an inclusive communications model.[10]

In September 2008 it was suddenly and unexpectedly discovered that there was a draft version of a new Organic Law on Telecommunications, Information Technology and Postal Services, identified as Decree No. 6,244.[11] The content of the bill had already been approved by the Council of Ministers and endorsed by the Supreme Court of Justice. With the bill just one step away from

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[9] For more information on the advances made during the first years following the creation of the Ministry of Science and Technology in Venezuela, see Carlos Genatios and Marianela Lafuente Ciencia y tecnología para el desarrollo (Caracas: Ediciones CITECI, 2007).

[10] The full national plan is available on the ministry's website: www.mppti.gob.ve

[11] Available at: www.tsj.gov.ve/decisiones/scon/julio/1257-310708-08-0975.htm

being submitted to the National Assembly, different sectors of society raised their voices in concern over a new law whose content had not been subject to public discussion.[12]

The draft version began to circulate without having been formally acknowledged by official representatives. However, the minister of People's Power for Telecommunications and Information Technology at the time, Socorro Hernández, declared in an interview on the state-run television channel that the proposed law for the sector had been submitted for approval through the *Ley Habilitante* (which gives the president authority to issue laws by decree) "and now we are taking it to the National Assembly. This is a draft bill that is going to be submitted for public consultation and I do not think there is any reason for all this concern. The versions that have been circulating are drafts, they are not the final version which we are going to present to the entire population and above all to the telecommunications sector so that they can voice their opinions."

There are substantial differences between the proposed law and the law currently in force, which was adopted in 2000. The current Telecommunications Law states that its purpose is "to establish a legal framework of general regulation of telecommunications, in order to guarantee people's human right to communication and to carrying out economic activities in telecommunications" in a context of free competition. The available draft version of the new law states that its purpose is "to regulate telecommunications, information technology and postal services in order to establish the democratisation of access to these services, ensure the security of electronic transactions, and reinforce technological sovereignty and independence and the security and defence of the Nation" in the framework of an inclusive, productive, socialist and humanist social economy.[13] These changes were undoubtedly introduced in response to new issues and problems that have emerged around electronic communications, and also reflect the current government's proposed transition towards a new socio-productive model based on a "new socialism".[14]

There was considerable public debate around the draft law promoted by different sectors of society. However, in the face of upcoming regional elections for mayors and governors, this discussion was overshadowed or moved off course by the emotional differences provoked by campaigns seeking to capture votes for the ruling and opposition parties. Until now, the matter has not been submitted for discussion by any official government representative and the Telecommunications Law adopted in 2000 remains in force.

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[12] For a general overview of the actors involved in this discussion, as well as the issues and background, see Venezuelan ICT journalist and researcher Raisa Urribarrí's blog at: uraisa.wordpress.com

[13] The current Telecommunications Law is available at: www.tsj.gov.ve/legislacion/LT_ley.htm; the draft version of the proposed new law that is the subject of the discussions referred to here is available at: www.cptm.ula.ve/ciudadinnovacion/pdfs/proyecto_reducido.pdf

[14] Now more commonly known as 21st Century Socialism, a concept developed by Hienz Dieterich Steffan and adopted by Venezuelan President Hugo Chávez. For more information see: en.wikipedia.org/wiki/Socialism_of_the_21st_century

4.2 CANTV: The dominant operator

Throughout the 20th century, the Venezuelan telephone company Compañía Anónima Nacional de Teléfonos de Venezuela (CANTV) held a monopoly over telecommunications services, which consisted primarily of telephone services. After a long history as a public state-owned enterprise, CANTV was privatised during the second administration of Carlos Andrés Pérez in the early 1990s, in the framework of a series of neoliberal policies aimed at restructuring the public apparatus with greater participation by the private sector in productive sectors.

At the time of privatisation, a transition period for fixed-line telephone service was established, in which the new privately owned CANTV would be able to operate for ten years with limited competition, allowing it time to invest in the modernisation of infrastructure.[15] While competition was limited for the operation of basic services, however, other new services were opened up to free competition. The National Telecommunications Commission (Conatel) was created to perform the state's regulatory functions for the telecommunications sector.

The concession contract for the operation of the basic telecommunications network was granted to the private consortium VenWorld Telecom, formed by the US-based companies GTE (58% of shares) and AT&T (5%), the Spanish telephony giant Telefónica de España (16%), and the national business groups Banco Mercantil (5%) and Electricidad de Caracas (16%). The aim was to expand and modernise services through a gradual and progressive process until the market for basic services was opened up to free competition in 2000. Initially, the other shares in ownership were controlled by the state, CANTV workers and private investors, but the state's participation was progressively reduced.

Figures from the decade show positive performance in terms of investment: "In the period from 1992 to 2000, CANTV made a total of USD five billion in investments, at an average rate of USD 550 million a year, compared with the USD 100 million invested every year before privatisation." (Rodríguez and Cáceres) This investment allowed for the creation of considerable infrastructure for telephone service and the expansion of a network for electronic communications.

In 2000, CANTV had initiated the process of connecting to the Americas II submarine cable, which had the capacity to carry 240,000 communications simultaneously at a speed of 2.5 gigabits per second and stretched 8,150 kilometres between the countries of North America, South America, the Caribbean and the rest of the world. The new cable project, undertaken by Tyco-Alcatel with more than USD 20 million invested by CANTV, vastly surpassed the capacity of the Americas I submarine cable, completed in 1994, which could handle 15,000 simultaneous communications at a speed of 560 megabits per second.

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[15] For more information see the section on Venezuela in Numa Mendoza Historia de las Telecomunicaciones (Madrid: AHCIET, 2007) www.ahciet.net/historia/pais.aspx?id=10151&ids=10708

With these conditions in place, it appeared that when the period of limited competition came to an end, CANTV would be prepared to compete with any telecommunications company that entered the field. Gustavo Roosen, the president of the company at the time, commented at the end of the 1990s: "CANTV now has major telecommunications infrastructure in the country, with access to fibre-optic, satellite and microwave technologies. In terms of data transmission, the company has the ATM/Frame Relay platform which offers large clients a high-speed, high-quality transmission system."

The Organic Law on Telecommunications adopted in 2000 officially opened up the telecommunications sector to new services and free competition, which provided a considerable boost to the sector in Venezuela. This law "established free competition in the provision of telecommunications services, bringing an end to the monopoly that had been maintained in this sector until that time." (Genatios and Lafuente, 2007) Nevertheless, CANTV had built up a solid infrastructure that would allow it to remain a leader in the sector. The Organic Law on Telecommunications defined the rules for market opening.

After the opening of the sector, with CANTV still controlling a significant share of the market, investments in telecommunications continued to rise in Venezuela. This growth was accompanied by the first steps towards the integration of services and growing demand for broadband internet and mobile telephony services.[16]

In January 2007, President Hugo Chávez Frías revoked the 1991 privatisation of CANTV and ordered that it be restored to public ownership.[17] On 22 May, after a process of buying out shares in the company, the Venezuelan government officially completed the "renationalisation" of the country's largest telecommunications operator.

As a result, the conditions of competition on the telecommunications market changed once again, with the participation of a state-owned operator/competitor. These changes sparked criticisms regarding the rules of play in the market. An article by journalist González Porras summed up the situation by describing two different visions of the future of telecommunications in Venezuela:

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[16] During the 1990s, the telecommunications sector was one of the few sectors that maintained their rates of growth and investment despite the recession in Venezuela at the time. In 1998 the sector registered growth of 7% and was the second largest contributor to the country's GDP, surpassed only by the oil industry. Three operators accounted for 90% of revenues in the sector: CANTV, its mobile telephony subsidiary Movilnet, and Telcel, a privately owned wireless mobile operator. After the phase of limited competition ended, investment in the telecommunications sector increased and remained above USD one billion a year for four years in a row.

[17] On 8 January 2007 Chávez announced that the state would buy back all shares in CANTV and the electrical power company, given that these are "strategic sectors" for the economy. A short time later, on his television programme "Aló Presidente", he ordered the "immediate" nationalisation of CANTV. He angrily accused CANTV of intercepting the private phone calls of government representatives, and repeated these allegations at a MERCOSUR summit, where he declared that the privately owned Venezuelan phone company was intercepting his calls. These accusations, denied by CANTV, formed part of the president's war of words on the participation of private companies in the sector, particularly those partly owned by the United States.

"The first vision foresees a situation of unavoidable conflict and vulnerability of economic laws and economic rights and liberties. These events are seen as posing a major threat to social wellbeing, firstly because the resource under state guardianship is a social resource, and secondly because CANTV-Movilnet's position as the dominant operator could make any display of unfair (to not say anti-competitive) practices a matter of public interest.

The second vision recognises the opportunity that the state now has to discipline markets that are naturally concentrated and oligopolistic. Once CANTV-Movilnet is in the state's hands and a significant reduction in tariffs has been announced, the transfer of efficiencies and profits from the operators to end-users could be much speedier and more substantial.

The current scenario in the telecommunications sector in Venezuela poses major challenges and risks to existing operators, especially after the announcements made by the president. However, business opportunities could be opened up for value-added service operators, on the understanding that the government shortly intends to present figures on the expansion of telecommunications and to grant prerogatives such as facilitated access and access tariff reductions to new value-added service operators." (2007)

Following the nationalisation of CANTV, Telecommunications Minister Jesse Chacón announced that the government's acquisition of the company did not mean it intended to implement anti-competitive policies. On the contrary, he said, the government intended to increase service penetration and lower tariffs in order to provide better and more widespread service for all Venezuelans.18

In meetings with the private sector, Chacón said that CANTV would be a "major ally" for the telecommunications industry. He announced plans to expand fibre-optic networks and pledged that the state would reinvest 60% of the newly nationalised CANTV's profits to fulfil the country's telecommunications needs.

Chacón also stated that the existing legal framework would be respected in relation to this issue. However, the Telecommunications Law seemed inadequate to contend with the socioeconomic policies proposed by the Chávez government. The promotion of new actors (such as community-based organisations) and their possible participation in the socio-productive sphere, and the conception of the telecommunications sector as strategic for national security, were new components that some felt could not be addressed with a legal framework adopted on the terms of free competition.

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18 "Ministro Jesse Chacón se reunió con representantes de Casetel" Venezolana de Televisión 21 July 2007 vtv.gov.ve/noticias-nacionales/6333

For Carlos Genatios, the first minister of science and technology in Venezuela and the person responsible for developing a policy and regulation model that is still largely applied in the sector, the role of the state is not to formulate policies in order to vertically impose them, but rather to foster the participation of all social stakeholders. "The key word is negotiation," he said, stressing the need "to develop trust so that large and small projects can be implemented. No sector should have predominance over another, neither the private sector, nor the state." This is a principle that has ceased to be applied in the seven years since Genatios left public office. "In recent years the country has gone through major political and institutional changes and has also suffered a profound crisis that is reflected in the high degree of political polarisation in the Venezuelan population. Underlying the existing balance there are deep social fissures that pose a potentially explosive threat and endanger the social pact and the country's development efforts."[19]

For his part, Jorge Berrizbeitia, the president of the National Centre for Technological Innovation (CENIT) at the time, said that "just as there has been a paradigm shift in technology, there has to be a paradigm shift in the regulator. We are building a knowledge society, but we only want to build one side of it, the side the interests us, and we tend not to see it as an integrated whole. There has to be a change in the regulator… in the operator… in the state… in the community. The knowledge society is based on participation. Without participation, there can be no knowledge society, what there will be is a technological market society."[20]

While there are varying political views regarding the role of the state vis-à-vis the telecommunications sector, CANTV has maintained its status as the dominant operator in the market. The company entered the field of internet service provision in 1996, together with seven other small service providers. In 1998, there were 32 specialised internet service providers registered with Conatel, but all of them were very small operations when compared with CANTV's market penetration. Although Telcel.Net significantly increased its market share at the beginning of this decade, it can still only be considered a medium-sized enterprise. At the end of 2008, there were 25 internet service providers operating in Venezuela, most of them small enterprises in terms of their percentage share of the market. CANTV holds the lead with an estimated 60% of total internet traffic and over 7,000 kilometres of fibre networks. Telcel.Net comes in a distant second with a 15% share of traffic, while all of the rest account for only very small percentages of the market.

A recent report, Venezuela – Convergence, Broadband & Internet Market – Overview, Statistics & Forecasts, lists the country's main broadband internet service providers as follows: CANTV is the main internet service provider and ADSL service provider; Inter offers broadband through cable modem; NetUno offers broadband through cable modem; SuperCable offers broadband through

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[19] Interview conducted in March 2009. For more details see Genatios and Lafuente Ciencia y tecnología para el desarrollo.

[20] Interview conducted in March 2009, when he was still the president of CENIT. In April 2009 he became the president of Venezolana de Industria Tecnológica (VIT).

cable modem; Telcel.Net provides WLL (wireless local loop) broadband; Génesis Telecom, owned by América Móvil, offers wireless broadband; and MovilMax-WiMAX offers wireless broadband.

4.3. NAP or no NAP: From an economic solution to a political problem

Near the end of the 20th century, in Venezuela as in the rest of the countries of South America, concerns began to emerge over the inefficiency of having to route local internet traffic through a connection in the United Status.

The first voices to be raised over the need to create an interconnection point to remedy this situation came from the academic sector at the end of the 1990s. Universities were the first institutions to use the internet as a means of communication among peers, following in the footsteps that the academic community in the United States had begun to take in this direction.[21]

In 1998 the board of directors of the Academic Network of National Research Centres and Universities (REACCIUN - Red Académica de Centros de Investigación y Universidades Nacionales),[22] comprising the Universidad de Los Andes, Universidad Central de Venezuela and Universidad del Zulia, formulated the first proposal for the creation of a NAP in Venezuela and entered into talks with the Chamber of Telecommunications Service Companies (Casetel), which groups together most of the country's service providers.

"The proposal was aimed at the creation of a main node administered by the Academic Network, in which the internet service providers would also participate by paying for an internal connection within the country between the primary node of each service provider and the node selected as the NAP node," explained Edmundo Vitale, a former member of the REACCIUN board of directors representing the Universidad de Los Andes.

The proposal was discussed in a series of meetings between representatives of Casetel and REACCIUN, but this first initiative was eventually shelved by the business sector. Perhaps it was too early for the business community to understand the impact that the creation of a NAP would make. The academic sector was already highly aware of the enormous possibilities offered by the internet for peer-to-peer communication, the management of huge volumes of data and scientific calculations. But commercial use of the internet was still in its earliest stages. As a result, the

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[21] It should be recalled that although the internet was developed for military purposes in the United States, its growth and earliest innovations were spurred by the National Science Foundation through a "network of networks" that initially linked supercomputer centres in that country, which means it has always been closely linked to academic activity.

[22] In the early 1990s the Venezuelan government established the Academic Network of National Research Centres and Universities (REACCIUN) in response to the efforts of numerous Venezuelan universities for managing scientific information in digital format and creating the conditions for the exchange of this information through electronic networks.

private sector "did not clearly understand the impact that the proposal put forward could have from an economic point of view," noted Vitale.

The incipient nature of the commercial internet market meant that the conditions were still not in place for reaching agreements of a cooperative nature. According to Casetel president Carlos Sanoja, "On the part of the companies the culture of working to create a structure for common or shared use did not exist and this did not help matters. Also, the company that controlled the most internet traffic at the time was CANTV, which gave it a lot of negotiating power with international operators. The other operators were left with very little, because of the costs involved."[23]

At the time, explained Sanoja, Telcel had just entered the market and was beginning to capture a timid but growing share of customers. This led to the signing of market agreements between the two operators, and eventually CANTV began to enter into similar agreements with each of the smaller operators. In this way, individual negotiations took the place of collective negotiations, swayed by CANTV's large market share. These bilateral agreements came to encompass almost all local internet traffic.

Vitale believes there were other, less explicit factors that also played a role in the failure to reach a collective agreement for the creation of a NAP. "It is quite likely that they did not have enough confidence in the academic sector and its ability to guarantee quality of service and direct the technological changes demanded by the times." These reservations were natural in a country like Venezuela, where the relationship between universities and society as a whole has not been particularly solid in terms of the application of knowledge.[24] Perhaps it was too early to recognise this. In any event, no agreement was reached for the creation of a NAP at that time.

Three years later, in 2001, Casetel and Conatel (the regulatory agency), with the backing of the Venezuelan Chamber of Electronic Commerce (Cavecom-e), drafted another proposal for the creation of a NAP. The proposal was submitted to the Telecommunications Research and Development Fund (Fidetel),[25] which approved financing for the project in November 2001, according to a Casetel press release. This signified state support for small operators, which would not have been able to make the direct contributions necessary for the creation of a NAP.

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[23] Interview conducted in March 2009.

[24] In time it was demonstrated that this particular case was an exception. The Universidad de Los Andes, a leading force in the development of telecommunications in Venezuela, became a pioneer in training in this field through the Latin American Networking School initiative, in addition to developing applications that became a major point of reference in the development of communications networks. For more information, see: www.cptm.ula.ve/ciudadinnovacion/especiales2.php.

[25] Fidetel was created on 12 June 2000 as an agency of the Ministry of Science and Technology for the purpose of financing research and development in the telecommunications sector with funds obtained primarily through contributions from service providers. The Telecommunications Law requires all operators in the sector to contribute half a percent (0.5%) of their gross revenues to the fund, with the exception of radio and free-to-air television stations.

As an added bonus, the establishment of a national interconnection point would mean shifting the exchange of traffic away from the use of a high percentage of international bandwidth towards a greater volume of local traffic, which would contribute to the Ministry of Science and Technology's goal of promoting national content creation. Casetel also stressed that interconnectivity would promote the development of web-hosting services in Venezuela; at the time, only 20% of national websites were hosted in Venezuela, while 78% were hosted in the United States. In addition, a NAP would increase the number of internet domain names using the country code ".ve" and would serve as a platform for a wide range of information technology services that would benefit all telecommunications-related sectors.[26]

Casetel defined the main objectives of a NAP as follows: to make efficient use of national telecommunications networks for internet traffic originating and terminating in Venezuela; to prevent the congestion, high latency (time delays) and loss of data packets caused by routing local traffic through international links and routing centres; to avoid the excessive use of international links to access local content; to develop a local market and permit the growth of small internet service providers by reducing the costs of access to this market.

The terms of the agreement reached with Fidetel (which were modified on a number of occasions in accordance with recommendations from Conatel) reflected clear political will on the part of state and the willingness of the state and private sector to work together for the creation of a NAP in Venezuela. Participation in the project was to be voluntary and open to all service providers authorised to operate by Conatel, whether they were members of Casetel or not. The agreement established equal treatment, rights and obligations for all parties. The service providers were to assume the operating costs after the first year of operations, and each was responsible for defining and installing, at its own discretion and risk, the most suitable means of connection to the NAP. Finally, an administration committee was to be established, made up of all the participants in the project, although the operation of the NAP would be expressly delegated to Casetel.

Reaching this degree of consensus constituted a major step forward, but unfortunately, before a final version of the contract was drafted and the legal terms were established, the project to build a NAP in Venezuela came to a halt.

"We operators were in agreement with the equality of conditions requested by Conatel. These conditions were ensured, but then the economic issues emerged. An investment of close to USD 80,000 was required at the time. Meetings were held with other stakeholders, but in the end, everything depended on the support of the two big generators of traffic (CANTV and Telcel), since they accounted for the large majority of end-users. And when the big companies reassessed the

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[26] For more details on the Casetel NAP proposal see:
www.napla2003.com.ar/presentaciones/NAPLA2003_Venezuela_Casetel.ppt

situation, they preferred to continue acting unilaterally, which is understandable from a business point of view. And that brought an end to the incentive for building a NAP," explained Sanoja.

Large service providers normally have redundancy built into their operating systems to guarantee continuity of service: they distribute their traffic through a number of broadband carriers or vendors in the United States and Europe. As such, it is understandable that the creation of a NAP would not be particularly attractive for companies that handle a large percentage of internet traffic and are able to ensure the transmission of their data packets through various international servers. The investment required for the creation of a NAP would fall mainly on the largest operators, who failed to see how a project with a shared goal like this one would serve their interests, given the economic factors involved. In cases like these, it is up to the state to promote the necessary conditions to protect the interests of the smaller operators, which is indeed what was intended with this particular proposal. But once again, the project did not get off the ground.

"There are no incentives from an economic perspective, unless the small operators bear the costs, which they cannot do. The issue is economically structural. The operators who were going to have to bear the largest burden were never able to see the economy viability of the project," commented Sanoja.

In 2008, the NAP issue was resurrected. The draft version that was made public of the proposed new Organic Law on Telecommunications, Information Technology and Postal Services announced the creation of a NAP by the state in Provision 18 of the Final Provisions:

The National Executive will create an interconnection point or network access point for internet service providers, for the purpose of handling traffic originating and terminating within the geographical area of the Republic, in order to make more efficient use of the country's networks given the strategic nature of the sector.

This means that the creation of a NAP is now being proposed by the state, which considers the sector to be strategic and related to national security. The National Plan on Telecommunications, Information Technology and Postal Services 2007-2013 is divided into five general areas, each with specific strategies and policies. One of these focus areas is technological sovereignty and independence, in which one of the strategies established is to reduce dependency and more specifically to "maximise local and regional traffic (voice, data and video) within the national territory (NAP)," thereby minimising "the threat to sovereignty and independence, as well as the costs incurred by the current need to route national and regional voice, data and video traffic to the network (WWW) and through nodes that are dependent on or regulated by countries allied with the current hegemonic power."[27]

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[27] The National Plan on Telecommunications, Information Technology and Postal Services 2007-2013 is available at: www.mppti.gob.ve/upload/docs/pntiysp_completo.pdf

In the context of a country like Venezuela that is divided into supporters and opponents of the proposed transition to a socialist state, rife with tensions and vocal intolerance between one side and the other, any discussion of the creation of a NAP now promoted by the state will be couched in a climate of difficult negotiations.

Perhaps the paragraph that has stirred the most controversy is the one from the same provision which states: "The governing body will determine the state enterprise that will be responsible for the installation, operation and maintenance of the interconnection point or network access point for internet service providers." Many of those who oppose this measure have questioned whether a NAP proposed in accordance with the policies defined by the state would end up being a point of control over internet traffic.

Various articles of the draft bill give the state power to dictate policies or regulations deemed necessary by the governing body (the ministry) and to order ISPs to modify their own traffic management practices in the pursuit of social benefit. While the majority of Venezuelans could be in favour of this social benefit in theory, there is a certain ambiguity created by the possibility that it is aimed at serving the interests of the current government's political agenda, with which half of the voting population expressed its disagreement in the last round of elections.

In response to the opinions voiced by various sectors of society, who view the proposal as dangerously vulnerable to attempts at control by the current administration, President Chávez addressed the issue on his television programme "Aló Presidente" in August 2008. He specifically responded to the accusations and concerns regarding the potential risk of information circulating on the internet being controlled if the state takes responsibility for the creation of a NAP.

For the first time, the issue of a NAP is being discussed in Venezuela from the perspective of control of information. The debate over the possibility of the state's regulation, monitoring, censorship and control of access to the internet and the content circulating on it has come to overshadow the technical and economic benefits highlighted in previous proposals for the creation of a NAP promoted by the academic and business sectors.

On 2 October 2008 the Universidad de Los Andes organised a national videoconference to analyse the draft bill for the new Law on Telecommunications, Information Technology and Postal Services, which was soon to be debated by the National Assembly.

The conference, entitled "The New Telecommunications Law: A matter of public interest", was aimed at mobilising public opinion around an issue that the organisers considered highly sensitive and of concern to all. The guest presenters included representatives of the academic and business sectors and a member of the National Centre for Technological Innovation (CENIT), whose

spokesperson specifically focused on the technical aspects of the new law, in view of the government's secrecy around this matter at the time.[28]

After several months of ongoing debate, newspapers and websites began to devote increasingly less space to the issue and the bill has still not been tabled for discussion in the National Assembly.

Thus Venezuela continues to be one of the few countries in Latin America that does not have a NAP. Although internet usage statistics reflect sustained growth, they remain below the average rates in the region as a whole. According to figures from Conatel, 23% of Venezuelans use the internet, as compared to the 27% average in Latin America observed in a study by Tendencias Digitales in 2008.

Given that Venezuela is the country with the highest GDP per capita in the region, one might expect this buying power to be reflected in higher internet subscription rates, but this is not the case reflected by statistics. Of the slightly more than six million internet users in Venezuela, according to the latest figures from Conatel, just over one million are subscribers to broadband or dial-up internet service at home. The vast majority of internet users either access the internet at *infocentros* – state-run centres set up across the country where the public can access the internet for either a very low hourly rate or free of charge – or at privately operated cybercafés. The tendency to use the internet in public facilities is likely a reflection of the relative affordability of residential broadband internet service, which is more expensive in Venezuela than the Latin American average.[29]

However, although CANTV continues to dominate the broadband market with its ADSL service, new technologies and the strengthening of the global market could result in favourable trends in terms of international broadband prices and solutions to speed up internet traffic. It is quite likely that studies more closely focused on the current realities would lead to the conclusion that investing in the creation of a NAP is not the only solution, as was believed in the early 1990s.

There are numerous encouraging possibilities for enhancing the diversity of options for competition in broadband service provision, despite CANTV's current market dominance. New technologies such as WiMAX and BPL (broadband over power lines) are proving successful in Venezuela, which means that broadband access may become less dependent on ADSL and the fixed-line infrastructure. (Paul

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[28] A summary of the main points contributed by the participants in the conference is available at: www.saber.ula.ve/eventos/foromedios2

[29] The 2009 report Venezuela – Convergence, Broadband & Internet Market – Overview, Statistics & Forecasts provides the following comparison: the CANTV residential ADSL plan with the highest connection speed offers a download speed of 2 megabits per second (Mbps) and costs USD 200 a month, while Telecom Argentina offers a 20 mbps download speed at around USD 176 a month.

Budde Communication, 2009) The volume of internet traffic will become a lesser concern as new technological options increase connection speed and reduce prices for end-users.

Once these matters are resolved, the main issue will be stimulating demand. Today, 23 out of every 100 Venezuelans are internet users, but it is quite likely that many of them are still not fully aware of the potential benefits of internet use in their daily lives. And because of this, they are unlikely to demand the bandwidth required to take advantage of the possibilities offered by so-called Web 2.0 tools. This is a question of learning and is a subject best left for another occasion. In the meantime, Venezuela will continue to pursue its entry into the information society in a national context largely dependent on the state's vision of the telecommunications sector, marked in recent decades by shifts and turns that make it a special case in Latin America.

5. Conclusions

The growth of internet service providers in Venezuela has not been balanced. The changing character of CANTV over the past few decades – from public to private and back to public ownership – reflects shifts and turns in the role of the state as supervisor and main operator in the market. CANTV's dominant presence is a factor with considerable weight when evaluating the context in which proposals have emerged for the creation of a NAP.

The academic, private and state sectors have all promoted the creation of shared points of internet connection, at different times and in different contexts, for reasons that have varied over time: from scientific necessity to economic benefit to technological independence and sovereignty. And all have proven unsuccessful.

Initially, the main obstacle appeared to be the limited economic profitability that a NAP would entail for CANTV, as the dominant operator, especially given the large investment that it would have to make in a project that would ultimately benefit the smaller operators much more. Even when CANTV was under state ownership, it still proved impossible to reach an agreement on the matter.

In any case, CANTV's infrastructure has allowed it to achieve more advantageous conditions in bilateral agreements than in cooperative agreements. It is quite likely, however, that this has had a detrimental effect with regard to prices for end-users and broadband access, judging from the statistics that place Venezuela below the Latin American average for internet usage.

In the last two decades, the state has played the role of regulator, operator, competitor and arbiter of productive dynamics in the telecommunications sector. These changes in the rules of the game have entailed constant readjustments, without sufficient time for the terms of negotiation to mature.

More recently, the new initiative for the creation of a NAP promoted by the state is tainted by the politically polarised climate currently gripping Venezuela. Mistrust, conflicting priorities, power relations and fear of excessive control by the state have thrown up new obstacles to negotiations

for the creation of a NAP. In a country where political agreements are a major challenge, it is difficult to say what the possibilities of success will be for this latest proposal from the state.

At the same time, however, the unsuccessful efforts to create a NAP in Venezuela over the course of an entire decade raise the question of whether new technological developments might not offer solutions for the initial goals to be fulfilled through a NAP: greater efficiency and lower prices for end-users. Thanks to the emergence of new technologies, the convergence of services and decreases in international connectivity prices, it is quite likely that at this point in time the creation of a NAP is losing the relevance it had in earlier years.

The resurgence of the idea of a NAP in Venezuela, promoted by the state and based on a strategic conception of the sector, has complicated negotiations by lending the initiative new connotations. A new relationship between the state and the telecommunications sector is developing, one that is not only economic but also political. Over the last decade, the internet has become a powerful tool and its capacity to influence diverse sectors of society has made it a major force in this new century. Along the way, both the state and society, in their complex interrelationship, are putting their cards on the table, making offers, exerting pressure, in accordance with the difficult expectations developed in this 21st century. New contexts, new forms of negotiation.

Experts interviewed

Carlos Genatios, first minister of Science, Technology and Innovation, creator of the first structures and regulations in the sector (not currently involved in the government).

Jorge Berrizbeitia, government spokesperson, former president of the National Centre for Technological Innovation (CENIT), current president of Venezolana de Industria Tecnológica (VIT).

Carlos Sanoja, president of the Chamber of Telecommunications Service Companies (Casetel), member of the commission formed for the creation of a NAP in 2001.

Edmundo Vitale, former professor at the Universidad de Los Andes (retired), founding member of the Latin American Networking School Foundation, former member of the board of directors of the Academic Network of National Research Centres and Universities (REACCIUN).

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