

Venezuela Mini-Case Study 2003

Short Message Service "Convergence"
Interconnection in Venezuela

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I. Introduction

Located in the Northeastern region of South America, Venezuela's population in 2002 was about 25.2 million with a GDP of approximately USD 126.2 billion. Revenues produced by the oil industry give Venezuela one of the highest per capita incomes in Latin America. Nevertheless, the year 2002 marked a difficult economic, social and political situation in Venezuela. Despite these difficulties, the telecommunications sector registered growth, comprising 3.56% of the nation's consolidated GDP.

Telecommunications is the second major industry in Venezuela, after the oil industry. By the end of 2002, Venezuela had 2,841,800 fixed telephony subscribers, for a fixed line penetration rate of 11.27. Public telephones reached 105,039 terminals, including those located in public Access Centers, for a public telephone penetration rate of 0.42 per 100 inhabitants. The country numbers about 6,463,600 mobile cellular subscribers, an approximate mobile cellular penetration rate of 25.64 per 100 inhabitants, one of the highest in Latin America. Indeed, Venezuela was among the first countries in the world in which the total number of mobile cellular subscribers exceeded the number of fixed line customers¹.

Venezuela's telecommunications regulatory agency, CONATEL, was first established in 1991. Since its creation, CONATEL has played an important role in the telecommunications sector and has promoted the sector's growth.

Sector reform in Venezuela began a decade ago with the privatization of CANTV, the government local and long distance telephony provider. Sector reform expanded, more recently, by allowing free competition throughout the sector.

On 24 November 2000, the "Reglamento de Apertura" or Opening Regulations were issued, establishing the principles and rules for the promotion of competition, based on transparency, equal access among operators (including, when necessary, asymmetric regulations placing heavier burdens on those with market power) multiple operators, freedom of choice by customers, and service quality.

Venezuela has licensed a number of different service providers² which offer a wide range of services, including local, national and international fixed telephony, trunking, Internet and mobile cellular telephony operators, which provide Short Message Service (SMS). Enhanced message services (EMS) and more recently multimedia messaging services (MMS) are also available to consumers in Venezuela.³

The Venezuelan Telecommunications Law is based upon the fundamental principle of competition. Since interconnection enables the effective entrance into the market of new operators and services, the Venezuelan Telecommunications Law treats interconnection as a key measure necessary for the market's development and an essential tool for the maintenance of a competitive environment. In fact, under the Venezuelan Telecommunications Law, interconnection between telecommunication operators is mandatory.

The terms and conditions of interconnection agreements are initially left to the parties to agree. CONATEL is not authorized to intervene unless and until the parties have failed to reach an agreement within sixty days, counted from the date on which one party requests interconnection from another party.

¹ See ITU World Telecommunication Indicators Database (see <http://www.itu.int/itu-d/ict/statistics>) and CONATEL Indicators from <http://www.conatel.gov.ve/ns/index.htm>

² A complete list of the Telecommunications operators in Venezuela may be consulted at: www.conatel.gov.ve, under the heading "operadores".

³ See Annex B for description of EMS and MMS services. Also, for specific EMS and MMS services provided by Venezuelan operators see: www.telcel.net.ve, www.movilnet.com.ve and www.digitel.com.ve.

The Venezuelan Telecommunications Law limits the role of the government to verify: a) that the interconnection requested is provided and b) to establish, where necessary, the general, technical and economic interconnection terms and conditions which will apply in the absence of an agreement between operators.

When requested to intervene, CONATEL sets interconnection terms and conditions within 30 days following a hearing in which both parties participate. The deadline for CONATEL's decision may be extended by another 30 days.

To promote competition, the Venezuelan Telecommunications Law mandates that interconnection negotiations between operators must be carried out based on the following principles: neutrality, good faith, non discrimination, equality of access, adequate quality of service and cost-oriented interconnection charges that include a reasonable rate of return for operators. CONATEL has issued a series of interconnection rulings based on these principles. (See Annex A to this report)

II. Short Message Service

Short Message Service (SMS) enables mobile cellular subscribers to send and receive alphanumeric messages from their handsets. SMS messages may be no longer than 160 alphanumeric characters. SMS messages may also originate from other devices or networks such as personal computers (PCs), personal digital assistants (PDAs) or websites. Like electronic mail, this service enables users of mobile devices to exchange short text messages with other users, including those of different operators, whether locally, nationally and internationally.

SMS or "text messages" (described more fully in Annex B) have revolutionized the telecommunications market. Today, mobile cellular users around the world consider text messages to be an essential communications mechanism. The service responds to consumers' combined need for access to information and mobility.

Mobile subscribers in Venezuela are no exception to such global trends. Since mobile terminal equipment normally includes voice and data capacity, SMS services in Venezuela are considered an essential tool for communication among users and a necessary component of mobile cellular service. In addition, this technological evolution has opened the way for third generation mobile services (3G) that enable the convergence of voice, data and video. In fact, the three biggest mobile operators in Venezuela, Movilnet, Telcel and Digitel, have already built their respective 3G mobile services networks and are presently rendering 3G services. Digitel, which had earlier begun using GPRS⁴, offers multimedia message service (MMS), as well as mobile Internet access and e-mail, among other 3G services. Although these services are not yet widely used, it is expected that with the eventual lowering of handset prices, 3G applications such as MMS will become as common as SMS are today.

⁴ GPRS: "Short for General Packet Radio Service, a 2.5-G standard frequently adopted by GSM operators as a migration step towards 3-G (WCDMA) for wireless communications which runs at speeds up to 115 kilobits per second, compared with current GSM (Global System for Mobile Communications) systems' 9.6 kilobits. GPRS, which supports a wide range of bandwidths, is an efficient use of limited bandwidth and is particularly suited for sending and receiving small bursts of data, such as e-mail and Web browsing, as well as large volumes of data." See www.webopedia.com and also ITU Internet Reports, Internet for a Mobile Generation, 2002.

III. The Movilnet and Digitel Case

On 15 February 2002, CONATEL ordered Telecomunicaciones MOVILNET, C.A. (“Movilnet”) and Corporación DIGITEL, C.A. (“Digitel”) to interconnect their SMS platforms.

The following summarizes their general, technical and economical conditions:

- Movilnet C.A, which obtained a license to operate a cellular network in 1992, transported over 120 million SMS per month in 2002, charging users USD 0.025 per message.
- Digitel C.A., which obtained a Rural Telecommunication Services license in 1998, transported over 100 million SMS per month in 2002, charging users USD 0.05 per message.
- On 24 May 2001 Movilnet and Digitel entered into an agreement by which both parties would establish the terms and conditions for the connection of their SMS platforms within 180 days, if technically feasible. Due to their failure to reach a complete agreement (they were able only to agree to use the Short Message Peer to Peer⁵ protocol), CONATEL initiated administrative proceedings to develop the terms and conditions for the interconnection of their respective SMS platforms.
- Each party presented its respective arguments to CONATEL. Digitel alleged that technical limitations in its network prevented the immediate interconnection with Movilnet’s network. More specifically, Digitel’s invoicing platform was not capable of applying different tariffs to the same service. Thus it was not possible to establish one tariff for SMS traffic terminating on the Digitel network and a different tariff for SMS traffic terminating on the Movilnet network. Transport of Call Detail Registers between the switches and Digitel’s billing platform was another area of concern as was the limited bandwidth capacity and the impact on the air interfaces.
- Similarly, Digitel argued it was temporarily unable to generate Mobile Terminated (MT) Call Detail Registers (CDRs) necessary to maintain the records to settle invoices between the two platforms.⁶ Likewise, Digitel argued that SMS was not covered by the Venezuela interconnection rules and thus CONATEL had no authority to intervene.
- After a thorough study of the facts CONATEL decided that because SMS is an essential telecommunications service it falls under the Venezuela interconnection rules applicable to all telecommunication services. CONATEL therefore ordered the parties to effectively interconnect their respective SMS platforms.
- The interconnection terms were established taking into consideration the technical work that had to be carried out by the parties enabling them to transmit short message services under optimum quality conditions. The alleged technical obstacles were resolved by installing the necessary interconnection facilities.
- The parties had also been unable to reach agreement on economic terms. Moreover, the parties failed to provide CONATEL any information with respect to their respective cost structures. While CONATEL considered conducting a benchmarking study as it has done in the case of fixed-mobile interconnection,⁷ it was unable to collect sufficient benchmarking data to determine access and use costs for the parties.

⁵ SMPP, or Short Message Peer to Peer, is a messaging protocol for the integration of applications with wireless mobile network messaging systems. With SMPP an application developer can send data to mobile devices or to other applications over the SMSC (Short Message Service Centre).

⁶ It would appear that Digitel lacked the financial means necessary to make the investments required to interconnect the two SMS platforms. Source: EL UNIVERSAL, January 11,2002, as cited by the specialized magazine “Venezuela Innovadora” www.venezuelainnovadora.gov.ve.

⁷ Benchmarking is mandatory under the Venezuelan interconnection rules for fixed to mobile interconnection. It is not mandatory in the case of SMS interconnection.

- CONATEL, did find, however, that the “bill and keep” system was applied to SMS traffic in some European countries.⁸ The “bill and keep” system would eliminate any requirement for Movilnet and Digitel to pay each other for terminating messages on each other’s network. Pursuant to CONATEL’S decision, the parties were required, within three months of implementing the interconnection of their two platforms, to notify CONATEL in writing if they would continue to use bill and keep or if they agreed to adopt a different structure.
- Under this temporary measure, the parties were subsequently required to determine the volume of traffic between the two platforms, and to estimate the volume of messages managed by each platform, and the respective cost of the volume of messages generated.
- In compliance with the CONATEL decision, Digitel and Movilnet interconnected their respective SMS platforms applying the “bill and keep” system, until November 30, 2002 when Movilnet and Digitel entered into an interconnection agreement that replaced CONATEL’s interconnection order. Under the new contract the parties agreed to charge each other USD 0.01 per message. As of the time this report was published, CONATEL had not been notified of any changes to this new arrangement.⁹

SMS Interconnection in Latin America

Short Message Service interconnection is a novel regulatory issue. CONATEL is the first Latin American regulatory body to order the interconnection of SMS platforms. More recently, Mexico’s *Comisión Federal de Telecomunicaciones (COFETEL)* has also ordered the interconnection of SMS platforms between Telcel (with 22 million subscribers) and Iusacel (with 1.5 million subscribers.) Rather than imposing a “bill and keep” system, COFETEL established an interconnection charge of Mexican Peso 0.12 per message, approximately USD 0.01. In Peru, SMS operators were able to reach agreement without regulatory intervention; in Chile the regulator acted as a facilitator. The need for regulatory intervention may simply be a question of the volume of SMS traffic flowing between operators. Where the volume of traffic is relevantly balanced, operators have sufficient incentive to cooperate.

A Message “Explosion”

CONATEL’s SMS interconnection decision has resulted in a significant upsurge in the volume of SMS traffic in Venezuela, benefiting users of all mobile networks. By May 2003, only a few months after CONATEL ordered the two mobile operators to interconnect their SMS platforms, Movilnet’s SMS volume had jumped from 120 million to 500 million outgoing messages per month. Although the increase was also due to better price arrangements, the interconnection with Digitel undoubtedly played a determining role in this message “explosion.” Likewise, Digitel’s SMS traffic increased from 100 million messages per month in October 2002 to 115 million in May 2003. In turn Telcel, the third mobile operator saw its SMS traffic double after it agreed to interconnect its SMS platform with the other operators.¹⁰

⁸ The “bill and keep” approach entails levying no charges on interconnecting carriers at all. Each carrier “bills” its own customers for outgoing traffic that it “sends” to the other network, and “keeps” all the revenue that results. The bill and keep model assumes that if there were interconnection payments, they would roughly cancel each other out, resulting in no real net gain or loss for either carrier. Further, by forgoing payments, carriers avoid the administrative burden of billing one another for exchanged traffic. The model works best if the traffic flows from one network to another are roughly in balance. Otherwise, one carrier will be under-compensated for the costs of traffic that it receives from the other. To ensure that there is such a balance requires measuring and recording traffic and costs on an on-going basis.

⁹ This new agreement may be consulted at CONATEL’s webpage: www.conatel.gov.ve/adenda/informativa/2002.

¹⁰ Source: The specialized magazine, La Red, article “Portada June 2003” By Veronica Diaz Hung. Obtained from: www.lared.com.ve

IV. Lessons for Regulators

The interconnection orders issued by CONATEL related to public telecommunications networks established general, technical and economical conditions to be applied to resolve disagreements among operators. CONATEL's SMS interconnection decision built on these earlier decisions to ensure that mobile cellular subscribers in Venezuela can exchange text messages among themselves.

There are several lessons to learn from this case. First, provided that the applicable interconnection rules are drafted in such a manner that they enunciate general interconnection principles rather than specific case details, such rules can serve as a useful tool to address issues raised by new technologies. In this case, CONATEL applied the general principles laid out in its interconnection rules to require a reluctant operator to interconnect its SMS platform.

Second, "bill and keep" is an option that can be used, at least in the short term, to expedite interconnection arrangements to ensure that consumers' ability to send SMS messages to subscribers of competitive network operators is not delayed even in the absence of cost calculations, traffic measurements or benchmarking exercises. Requiring SMS platforms to interconnect under a "bill and keep" system may also give reluctant operators the incentive to reach cost-based agreements on a more timely basis.

Third, although there are presently no interconnection issues regarding third generation mobile services in Venezuela, these are very likely to develop given that the service has been recently introduced. Venezuela may again decide to refer to decisions taken by regulators with experience implementing 3G interconnection when these issues arise, just as it did in the case of SMS interconnection. It is for this reason that it is important for regulators to share their experiences. The ITU has an important role to play in fostering an exchange of regulatory experiences among the world's regulators, including through the publication of case studies such as this one, the Global Symposium for Regulators and the Global Regulators Exchange (G-REX), the password protected website for regulators.¹¹

¹¹ G-REX houses the Regulators' Hotline where regulators and policy makers can pose questions on their pressing regulatory concerns and receive answers from their colleagues around the world. G-REX welcome contributions in English, French and Spanish. Any regulator or policy maker interested in registering for GREX is invited to do so at <http://www.itu.int/ITU-D/grex/register/asp>.

ANNEX 1

CONATEL's interconnection orders may be downloaded from its website at: <http://www.CONATEL.gov.ve/ns/interconexion.htm>. The first interconnection case was brought to CONATEL after basic telephony services opened to competition in 2001.

The following is a selected list of the interconnection disputes CONATEL has resolved:

1. TELCEL C.A. is a mobile cellular operator that was the first operator qualified to provide basic telephony services in Venezuela. When TELCEL and CANTV were unable to reach an interconnection agreement within the legally required timeframe, CONATEL proceeded to issue an interconnection order.
2. Interconnection orders were issued with respect to TELCEL, C.A. and other mobile cellular operators, including Telecommunications Movilnet, C.A. and Infonet, Redes de Información, C.A..
3. At the end of 2001, mobile cellular operator Cooperación Digitel, C.A. and Veninfotel Comunicaciones (Vitcom), C.A. failed to reach agreement on a variety of interconnection issues. CONATEL subsequently issued an order for the interconnection of their networks.

ANNEX 2

SMS, EMS and MMS Explained

Short Message Service (SMS) is a two-way simple text service for sending short (160 characters) alphanumeric messages to mobile phones. SMS can be used for both “point-to-point” as well as cell-broadcast modes. The service is not unlike e-mail as it involves the asynchronous delivery of text messages, with the difference that messages are delivered directly to a mobile handset and can thus be received by the user anywhere and at anytime. Once a message is sent, it is stored at the SMS message center until it is successfully delivered or “forwarded.” This is known as a “store and forward” process.

Once a message is sent, it is received by a Short Message Service Center (SMSC), which must then send it to the appropriate mobile device. The SMSC sends an SMS Request to the home location register (HLR) to find the roaming customer. Once the HLR receives the request, it responds to the SMSC with the subscriber's status, reporting whether it is inactive or active and where the subscriber is roaming. If the response is "inactive", the SMSC will hold the message for a period of time. When the subscriber accesses his device, the HLR sends an SMS Notification to the SMSC, and the SMSC attempts delivery. The SMSC transfers the message in a Short Message Delivery Point-to-Point format to the serving system. The system pages the device, and, if it responds, the message will be delivered. The SMSC receives verification that the message was received by the end user, categorizes the message as "sent" and does not attempt to send it again.

As it is charged for according to the number of characters, however, SMS is not suitable for lengthy communications—a 640 character message costing four times as much as a 160-character one. SMS can originate either on a mobile phone or through a Web-based SMS service. Already, a number of instant messaging (IM) providers have introduced services whereby Internet users can send and receive SMS.

The phenomenal growth of SMS was predominantly user-driven, rather than the result of any targeted marketing efforts. In fact, operators hardly expected this simple technology to become a popular service and a significant revenue booster. Once the potential of SMS became clear, however, companies began exploiting the broadcast mode and offering a wide array of billable information services. These services include local and international news, stock updates, weather forecasts, banking information and travel information.

As the phenomenal success of SMS seems to indicate, person-to-person messaging will most likely continue to drive mobile data revenues for some time. Correspondingly, the adoption of EMS (enhanced messaging service) and MMS (multimedia messaging service), in combination with the increased use of prepaid services, are likely to become crucial drivers of the mobile Internet.

EMS is similar to SMS in terms of the store-and-forward process, but also includes additional features, such as the transmission of a combination of simple melodies, pictures, sounds, animations, and modified text as an integrated message. The combination of several short messages together will be a key technical feature of EMS.

MMS, based on a new global standard, will provide more sophisticated messaging than EMS and SMS, allowing users to send and receive messages with formatted text, graphics, audio and video clips. MMS will require new network infrastructure as well as MMS-enabled handsets. Unlike SMS and most EMS, MMS are not limited to 160-characters per message.

Source: ITU Internet Reports, Internet for a Mobile Generation, September 2002 and http://isp.webopedia.com/TERM/S/short_message_service.html