

Columbia Final Report

Provision of PCS services

Transparencia por Colombia

Provision of PCS Services In Colombia

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Background

The Government of the Republic of Colombia has decided to increase the level of competition in the Telecommunications market by introducing at least one other mobile telephone operator, and maybe up to three operators, utilizing an advanced technology similar to, or the same, called in some markets, Personal Communications System (PCS). This will be done by issuing a 10 years license to provide this new service for each one of the three geographical areas in which the country has been divided for this purpose.

To limit the possibility of corruption entering into the process of appointing a PCS Operator, the Government has made special arrangements for Transparencia Por Colombia, (T-COL) the Colombian Chapter of Transparency International, (TI) to oversight the process of offering and awarding the license and provide comments and advice on transparency matters relating to this process.

In order to accomplish these objectives T-COL has promoted the government's invitation to the bidders to sign in good faith an Integrity Pact, and will issue public statements regarding its opinion on the transparency of the bidding process.

History of Mobile telecommunications

First Generation (1G)

Mobile telecommunications is an evolving service. It started in the 1940's as a very primitive radio telephone system with big radio sets and very inefficient use of the radio spectrum. It usually worked out of only one base station and could only handle a few customers at a time. It was big, bulky, expensive and subject to interference. By 1970 there were less than one million subscribers worldwide.

Then, in the 1970's, came cellular mobile using analogue technology. This has been called the First Generation cellular mobile system (1G). Semiconductors and microprocessors made a big impact. Spectrum efficiency was increased by re-using frequencies in non-adjacent cells. When the micro circuitry reduced both the size and cost of terminals, annual growth rates of between 30% to 50% (and 100% in Australia) were experienced. By 1990, there were 20 million subscribers.

Second Generation (2G)

In the 1980's digital systems were developed on different continents, based on a number of incompatible systems worldwide. These were called the Second Generation cellular mobile systems (2G). This technology improved transmission quality, system capacity and coverage. Colombia since 1992 has such a system utilising a technology called Time Division Multiple Access (TDMA). This is based on the North American system design. There are many other 2G systems, with probably the most successful design being the European GSM family of systems. These European systems are incompatible with the North American systems and in most cases, with other systems. GSM supports over 250 million of the world's 450 million cellular mobile subscribers.

Third Generation (3G)

The world has realised the high price paid due to the incompatibility of these systems. At last, the ITU (International Telecommunications Union) has facilitated an agreement to establish a Third Generation System (3G) that will be a world standard. It is to be called IMT-2000, but has yet to see the light of day. It will offer 2 Mhz video, video conferencing, very fast data access and Internet working, etc.

Current comments on this market suggest that the Governments of those countries that auctioned off the spectrum for this technology before the dot.com market collapsed earlier this year, have made a financial killing that has killed the prospect of this market ever being viable. The extra revenue likely from such a service will be far less than the exorbitant license fees paid. For example in the UK, the bidders paid up to US\$550.00 per head of population for the privilege of being in this market. In Germany, they paid about the same. In Australia, where the spectrum was offered after the dot.com collapse, the licensees paid the equivalent of US\$30.00 per head of population. Hence 3G has a better chance of getting off the ground in Australia than in the UK or Germany. Nevertheless, except for countries like Japan and some European countries that have severe congestion in their 2G networks, it looks like 3G networks may not be all that profitable, as the extra costs will not be recovered from the demand for the new and advanced services offered. Time will tell.

The Interim Offerings

What is being offered at present in a number of countries is a 2.5G system. This is an advanced 2G system that offers features less than in 3G. In the USA, PCS (as defined by the Telecommunications Industry Association specification IS-136) is such a system. It has a number of additional facilities or features such as those mentioned

later in this report. The features offered are claimed to surpass those provided by 1G and 2G systems but are less than anticipated in 3G.

In the USA the PCS technology is designed to fit neatly with the upgrading of TDMA that uses the 800 Mhz band. The handsets supplied in USA for PCS access both the 800Mhz and 1900Mhz bands. PCS is being advertised in USA media as an advanced cellular mobile system. Most 2G operators in the USA are upgrading to this system.

In Colombian, the Ministry has decided on the following:

1. Introduce some more competition to the market by issuing 1, 2, or 3 new licenses for mobile telecommunication services to cover three different geographical areas.
2. Allow the new entrant(s) to the market to exploit the 2.5G technologies that use the 1900Mhz band.
3. Allow both the USA IS-136 PCS system, the European GSM system and any other systems to be offered. (While still calling it a PCS system). However, the successful bidder for the Eastern Area is called to determine the technology to be used in the remaining Western and Atlantic Coast areas, should there be more than one license issued.
4. Limit access to the new licenses to bidders who have no presence in the Colombian Market.
5. Allow more open competition after February 2003.

Note that such an arrangement would give the new entrant(s) exclusive rights to offer this new service offering with its additional features, until February 2003. This does restrict delivery for these new services to the new licensee(s). The Law 555 of 2000 forbids the current cellular operators from competing in this new band before February 2003 but requires a fair competition environment and an *economical equilibrium to be granted through the selection process of the new PCS entrants vis a vis the existing 2G mobile phone operators, taking into account market conditions*

In other words, the voice traffic carries by 2.5G systems will compete with existing TDMA systems. Both of these markets will still comprise a lot of voice traffic, but in the 2.5G market there will be significantly more data, messaging and connection to corporate offices than in the 2G market.

Documents Studied

T-COL's involvement has been with discussion with the Ministry and with examining a number of documents associated with this process. These documents include various versions of

Law no 555 of 2000

Draft of statutory Decree

Draft of Bidding Conditions, Supply of Telecommunications Services

– PCS, Public Tender, No 002 –2001

To assist them in assessing these documents for suitability to establish a tender process based on a public auction in a manner that minimises the opportunity for corruption, T-COL has sought the assistance of an experienced international consultant, independent of any likely bidder, operator, manufacturer, or other party likely to have a beneficial financial interest in the outcome of this project. The International Secretariat of TI was approached to identify a suitable consultant meeting the above criteria. This Consultant (the author of this report) was selected to provide this assistance on a pro bono basis, while T-COL arranged for travel expenses, accommodation and suitable per diem allowances to be paid.

The Consultant was contacted in his home country, Australia, and informed of developments via the Internet. The consultant left Australia to visit Colombia on October 19 for face to face consultation and worked with T-COL staff in Bogotá, Colombia until 27 October.

Several weeks prior to departure for Colombia, the Consultant was provided, in Australia, with the above documents in Spanish as they had been developed, and several translated into English. Those that were not translated by T-COL were translated utilizing a free Internet facility via www.freetranslation.com. Whilst this facility delivers a translation that is far from accurate, it provided adequate assistance in enabling the reader to gain an impression of the contents, providing that some effort and perseverance was used. The Consultant studied this document and those professionally translated in Australia

Australian Communications Authority

Prior to departing for Colombia, this Consultant had discussions in Melbourne Australia with Dr. R Horton, Deputy Chairman, Australian Communications Authority. This organization has recently held, on behalf of the Commonwealth of Australia, a public auction for licenses to utilize the radio frequency spectrum to supply Third Generation Mobile Telecommunications System services. Dr. Horton arranged for a briefing session with his staff and this Consultant to provide a briefing on developments in Australia and known developments in Regulatory circles of progress of Third-Generation (3G) Mobile Services in other countries

Purpose of the Consultancy

The purpose of the involvement of T-COL in this case is to provide advice to ensure that the essential infrastructure of an advanced mobile telecommunications service (PCS) is created in the most economic and transparent manner, making efforts to keep it free from the corrosive effects of corruption, to benefit the people of Colombia as a whole.

It is recognized that all countries now exist in a global market and therefore must compete with each other. To compete effectively, suitable human capital, adequately educated and trained, in a framework of adequate infrastructure must be in place. The success of such competition should be increased standards of living, an opportunity to benefit from gainful employment, increased human development and self-actualisation, and general benefit for all peoples in Colombia.

Low cost telecommunications are essential for a modern, competitive economy. Inexpensive and reliable telecommunications is seen as an important element in deciding on foreign investment for many corporations. Hence it is important that the prices to be charged for the proposed PCS system be as low as is commercially prudent in order to offer the service to as wide a customer base as possible.

Corruption increases the cost and risk of doing business, and where endemic, discourages investment. This limits employment opportunities. The aim of eliminating corruption is to benefit all of society through creating opportunities for eliminating poverty and generating a fair distribution of wealth throughout society.

Objectives

The work undertaken by the consultant has focused on the following:

- Studying the contents of documents, to the extent possible within the timeframe available and within the abilities and limitations of the consultant, to ascertain if the contents of the above documents contain adequate information to:
 - Enable a bidder to make an informed decision on whether to bid or not
 - Enable the bidder to ascertain the constraints imposed on the bidder prior to and during the bidding for the license to provide such services, and during the execution of the project
 - Define a suitable and fair auction process
 - Exclude as much as possible the opportunity for corrupt practices to limit competition prior to and during the auction and during the execution of the project
 - Enable the selected PCS system to evolve to the internationally proposed Third Generation Mobile Telecommunications system (IMT-2000), which will be a world standard with the following characteristics:
 - Used worldwide
 - Used for all mobile applications
 - Supports both packet switched and circuit switched data transmission
 - Offer high data rates up to 2 Mbps
 - Offers high spectrum efficiency
 - Result in the delivery of services that are appropriate and affordable to the people of the Republic of Colombia
- Discussing with T-COL staff these documents and the matters raised above
- Discussing with Officials and consultants of the Ministry of Communications general comments, the above referred documents and other matters

Overall Impressions

The process and documents involved in this process are very different from those that are familiar to the Consultant. There seems to be a lack of commitment to define matters specifically and to specify as clearly as possible critical concepts and technical matters. There also seems to be a lack of understanding of the importance of specifying in detail and/or annexing the relevant sources of legal constraints, regulations, specifications, standards etc,. There may be good reasons for this, but these were not explained convincingly in adequate detail to the Consultant.

Since provision have been made for the successful bidder for the Eastern Area to determine the technology to be used in the remaining Western and Atlantic Coast areas, should there be more than one license issued, this may have grave consequences for these latter license bidders.

Nevertheless, notwithstanding the above reservation, the overall structure of the process, and the details of this process seem sound, subject to the comments and suggestions contained in this report.

COMMENTS ON DOCUMENTS

Law 555 of 2000

General

The comments herein are offered with no intention of criticizing standard practice within Colombia. They are offered from the perspective of a non-Colombian, with the intention of providing a clearer meaning of the intention of this project for bidders for the offered licenses who may reside outside of Colombia.

It is understood that the Law 555 of 2000 has been promulgated. Hence it is unlikely that any modifications can be made to this law. It may be possible to clarify parts of the material included in this law through the Statutory Decree and Tender Documents that still have to be finalised.

From discussions with the staff of Colombian Ministry of Communications, it was learnt that there is an acceptance that the definition in Law 555 is adequate to define the service under consideration. From the perspective of someone living outside of Colombia, this is inadequate, especially when used to the more precise system definitions and complete references to all relevant legislative Acts, Regulations, and Standards.

Article 2

From the perspective of this Consultant, the term PCS, an abbreviation of Personal Communications Services, is usually associated with the definition provided by the Telecommunications Industry Association based in the USA and defined by that organisation as specification IS-136.

Should the Ministry wish to make the Tender process open to similar advanced mobile systems it should explicitly state that it would consider tenders for other systems offering like facilities, but defined by other Industry standards Authorities, such as ETSI (European Telecommunications Standards Institute), American National Standards Institute (ANSI), Association of Radio Industries and Business/Telecommunications Technology Committee (ARIB/TTC) and perhaps

other regional bodies such as Third-Generation Partnership Project (3GPP) where appropriate to the needs of Colombia.

Stating the facilities expected to be delivered by the new service (PCS) would provide a guide for those likely bidders that would prefer to offer a non-American solution. These facilities may include:-

Sleep mode

Short message service (SMS)

Voice & data privacy

Superior voice quality

Hierarchical environment (macro/micro cell operation)

Intelligent rescan

Private & residential system ID's

Seamless roaming

Circuit switched data support

Authentication

Calling Line Identification (CLI)

Message waiting indicator

Text dispatch service

Chat

Textural & Visual Information

Still images

Moving images

Web browsing

Document sharing/collaborative working

Corporate email

Internet email

Vehicle positioning

Remote LAN access

Home automation

Some reference should be made of the expectation that PCS is expected to evolve over an unspecified period of time to a full 3G service, now known by the ITU term IMT-2000. This system will offer even more advanced facilities and services.

In discussions with this Consultant, the Ministry of Communications emphasized that no technological constraints were to be imposed on the bidders providing the service system referred to as PCS. However, such an objective does not negate the need for a precise definition of what is expected as far as services are concerned, and how this system will be expected to evolve towards an internationally accepted 3G system and how this system will interconnect with other existing telecommunications systems.

Greater precision is likely to be of considerable value to foreign bidders who may be used to more specific definitions.

Article 3

A precise definition of the meaning of “supplementary networks”, within the context of a PCS system would be desirable. Such a definition should specify for what purpose these networks could be established.

Article 10

In this Article, mention is made that the service should be provided such that “most Colombian” may have access to this public network. A more precise definition of what “most Colombians” means is required. Perhaps reference could be made to the size of cities and towns that must be served together with reference to main highways and areas with a density of population greater than a particular level requiring service.

Article 14

Interconnection agreements in many countries have a history of considerable disputation. Care should be taken to ensure that interconnection is made in the most

efficient and economic manner. Interconnections costs should be based on costs for services delivered, using marginal costs as the basis for determining the level of charges. In most cases this will require a measurement of traffic carried in each direction or circuits or bit rate capacity used.

Interconnect agreements should be subject to CRT approval and registration.

Article 17

Users should also have the right to all facilities normally provided by PCS systems, unless forbidden by the Government of Colombia. A PCS operator should not be permitted to withhold provision of specific facilities in order to maximize his profit, if such facilities are consistent with normal good service.

Comments on the Draft Decree, Version 7 from August 13, 2001

Articles 1, 2 & 4

The comments above for Law 555 of 2000 are similarly applicable to this Decree. While Article 2 does go part way to spell out in some detail the services that are expected to be supplied, a more comprehensive list would be of assistance in clarifying what is required. Care should be taken to ensure that the list of features to be supplied are not limited to a specific technology or system, thereby defeating the purpose of the intention to open this tender to a wide range of possible suppliers and technologies.

Article 9

Roaming should be more precisely defined, especially as the IS-136 definition of Roaming differs from the concept of Roaming between licensee areas or international roaming. Certainly, provision should be made, in the case of multiple licenses being issued, for customers to be able to travel throughout Colombia, making use of the networks provided by different licensees.

Article 10

The wording of this Article seems to favour the TIA IS-136 technology. If the Decree supports a technological neutral approach, this Article should be considered very carefully. If the selected system is GSM based, then it would be incompatible with the existing Cellular Mobile Telephone System in operation.

Articles 11, 12, 13 & 14

Mention should be made in these Articles of the requirement to abide by ITU and Colombian regulations relating to interference due to excessive transmission levels and spurious emissions. This may be an important issue along the boundaries of adjacent licensees. The laws and regulations requiring compliance should be stated to avoid dispute. Special reference should be made to those regulations concerning the use of the spectrum.

Article 17

Interconnection Agreements have proven to be contentious issues in some countries. It may be desirable for all Interconnection Agreements to be registered with the Regulator who may have the power to insist on modifications where proposed agreements do not serve the public interest in a fair manner.

Comments relating to Article 14 above also refer to Interconnection.

Article 25

Notwithstanding Article 61, it may be appropriate to consider under this Article the establishment of a Telecommunications Ombudsman with appropriate powers and answerable to Congress or some other suitable authority, to provide a low cost means of dealing with disputes between users and operators of Telecommunications services, including PCS services.

Article 32

In this Title, mention should be made of whether it will be possible for the License to be on-sold in whole or in part to another operator, and if so, under what conditions. If such a provision is to be made, such a transfer of ownership should be subject to approval by an appropriate entity.

Articles 35 & 36

Again, the laws and regulations requiring compliance should be stated to avoid dispute.

Article 50

While the Government may wish to gain a high price for the licenses issued, it should be borne in mind that the license fee will ultimately have to be paid for by the users of the system. A high License fee will increase the price charged by the operators and this will ultimately have the effect of limiting the availability of the service to those that can afford to pay the license premiums included in the service price. Hence this will limit the economic and social utility of the service.

It should be noted that the successful bidders for Colombia's first mobile telecommunications licenses paid a very high price of about US\$1,200 million 7 years ago. This, assuming the population to be about 35 million in 1995, is the equivalent of US\$34.00 per head of population. Considering the relatively low GDP per capita for Colombia, and the large disparity of income within the community, this rather high cost, and presumably the current prices for this service, may explain the reason for Colombia's low penetration and growth rate for mobile services compared with other countries in the region. The low penetration has resulted in low economic and social utility of this valuable product.

Article 59

The source of regulations pertaining to the use of the radio frequency spectrum should be stated.

Article 60

This Article should state in a clear manner the conditions that will apply in establishing and approving the tariff system to enable the bidders to clearly anticipate the level of returns they can expect from their investment.

BIDDING DOCUMENT Version 3 Oct 16, 2001

Items 1.6, 1.7, 1.8

In some countries service areas are defined in precise geographic terms, giving latitude and longitude coordinates. It may not be necessary in the case of Colombia. However, it may be necessary to state a precise definition of the boundaries, referring to the legally accepted boundaries of the Colombian Departments. This may be important should ever the issue of spectrum interference arise between two or more operators.

Item 1.48

Again the definition of PCS needs to be resolved in accord with the expectations of the Ministry of Communications.

Item 2.2

Should the North American PCS system (IS-136) be intended, then this system would also need access to the 800 Mhz band. However, if other technologies are intended to be used, then this requirement is unnecessary.

Item 2.15

See comments on PCS and technology above.

This item also raises a very serious issue regarding the imposed choice of technology should there be more than one licensee. It is likely that each bidder will have a preferred supplier of technology and may have established a relationship with that supplier resulting in price advantages for equipment and production scheduling. Should such a bidder for, say, the Western Area or the Atlantic Coast have a preferred technology different from that of the Eastern Area preferred bidder, then according to this Item, that bidder must supply the technology nominated by the Eastern Area preferred bidder. However, the Western Area or Atlantic Coast preferred bidder may

not be able to secure the nominated technology at suitable prices comparable to the prices relevant to the initial proposed technology. Delivery schedules may also be difficult to arrange to meet the conditions of the License. This Item may cause serious legal dispute and cost increases to the end users.

Item 2.16

This item is confusing to the reader. It is not understood what is meant by “through at least telephone lines”. What may be meant is for “PCS” users to be able to roam from one license area to another, even when different licensed operators may operate the license areas. This will require shared billing and other operating details.

Item 4.7.1

This Item should include a process for keeping all the deposited Envelopes No. 1 & 2 in a secure locality where no unauthorised access to these envelopes can be possible. Such a secure locality may be a bank vault or such other similar facility.

Item 4.7.2

Only the Evaluation Committee should have access to Envelopes No 1 during the Verification Process. A process to guarantee this should be established. Access to Envelopes No 2 should not be possible during the Verification Process

Item 4.7.5

During the process of determining the Minimum Value of bids, Envelopes No 2 should be kept in a secure location. To deposit the Minimum Value with other Envelopes No 2 should require the safe transportation of these envelopes to the site of the Bidding Audience.

Item 5.10.4

To ensure the transfer of technology associated with the “PCS” Service it may be more appropriate for the successful Licensee to provide a number of Post Graduate

Scholarships at a suitable university in Colombia together with suitable material support, to advance knowledge in the area of mobile telecommunications. The number of scholarships, selection of the university, and provision of material support should be based on the objective to form a critical mass of expertise that can be self-sustaining.

This may be more effective than delivering public seminars to a general public, as proposed.

CONCLUSIONS

There is ambiguity in the terminology of what the Government seeks to achieve in issuing new licenses for an advanced mobile telecommunications system. This ambiguity stems from the use of the term Personal Communications System. Much greater clarity must be applied to defining what is required.

The concept of enabling the successful bidder of the Eastern Area to determine the technology for the Western and Atlantic Coast Areas, should there be more than one license issued, may compromise the bids and the bidders for areas that are based on non-compatible technology.

The whole bidding system could be improved by quoting in more detail the titles of Laws, Regulations, By-Laws and Standards that apply to this market sector. Identifying in more detail those agencies involved with the regulation and monitoring this sector would also eliminate potential dispute at some time in the future.

Designing a process that safeguards the secrecy of bids in Envelope 2 until they are opened may increase bidder's and the public's confidence in the process.

Disclaimer

The views, opinions and recommendations in the Report are those of the author and not necessarily those of Transparencia por Colombia.