

- **Sharing of passive and active infrastructure**

- **Active**

Since the emergence of mobile telephony on the telecommunication market in Bolivia, it has grown constantly and exponentially, and today there are over 3 million terminals in operation. A bottleneck has resulted in terms of infrastructure development for the mobile service, this being due to several factors, in particular differing legal frameworks in different parts of the State in relation to the telecom regulator, and citizens' perceptions as to the possible effects of electromagnetic waves emitted by mobile telephone, radio and television systems.

One strategy adopted by the *Superintendencia de Telecomunicaciones* with a view to promoting affordable access for everyone consists in approaching municipal governments, the Vice-Ministry of Telecommunications and the Vice-Ministry for the Environment with a view to coordinating and implementing activities for sustained infrastructure development, and in promoting direct contact with social organizations representing the population in order to develop education for citizens through seminars, workshops and other social awareness activities in the interests of explaining technical and environmental concepts relating to the implications of use of the electromagnetic spectrum for telecommunication system transmissions.

On the first aspect, steps have been taken for the drafting, approval and promulgation of clear and practical regulations governing the siting of infrastructure (towers and antennas), both within the domain of land-use planning and within the telecommunication sector itself. This resulted, after much work, in the availability of clear rules as from July 2007 within the municipal legislations of the towns of La Paz and El Alto, facilitating the development of infrastructure.

Recently, following several media reports on the potential health implications of electromagnetic waves, this subject has been reviewed in Santa Cruz, Cochabamba and other towns and smaller localities, where standards are in the process of being updated. SITTEL has conducted seminars with the help of experts in both the above towns, and it is anticipated that new regulations will be coming out this year.

In connection with these activities, the fact that differing regulatory frameworks are found in the telecommunication sector, in municipal governments and in the Vice-Ministry for the Environment leads to another problem, namely each one's competence in regard to telecommunication infrastructure. Who, in the last instance, is to give ultimate approval for the siting of infrastructure? SITTEL has held a series of meetings with these stakeholders, as a result of which a more closely knit regulatory group is emerging. Recently, the environment sector introduced in its legislative framework the obligation to conduct a "public consultation"; however, without a clear methodology for managing this from a regulatory standpoint, this process is throwing up particular obstacles of its own on account of the subjective issues involved that make analysis more difficult.

With respect to the second aspect, SITTEL, in conjunction with several operators, especially mobile telephone companies, authorities from other sectors and the general public, has organized educational activities, broadcasts and publications on issues of public interest, use of public assets and social policy.

As a result of all these efforts, in 2007 the operators have been able to take steps to expand coverage and improve the quality, responsiveness and efficiency of the service provided.

Finally, more thought is being given to co-locating various operators' sites in response to the local authorities' drive to launch a process of readjustment of stations that were installed before the new regulatory provisions came into being.

– **Passive**

Bolivia's network comprises a backbone and other smaller-scale components. The optical ring is over 3 500 km long and provides significant urban and rural coverage. Although this infrastructure is over 20 years old, sufficient conditions exist to establish new fibre optic rings using new transmission hierarchies and/or next-generation networks (NGN).

On account of the phenomenon of convergence, the operators will ultimately have to migrate to converging networks and services and rely on a single IP node.

The regulator must accompany this process, monitoring and upholding the principle of efficiency in the calculation of interconnection and access charges which end up being reflected in the prices that are ultimately passed on to the citizen as the end consumer.

Projects for expansion of the transport network, including through overhead lines, may help to promote access for more regions of the country. Optical networks offer highly competitive prices, and installation processes have gradually improved from the technical standpoint.

• **Free access to international capacity**

International outlets are fully in the hands of private operators, and there are routes to Chile, Peru and Argentina. Thus, most of our access is over submarine cables in the Pacific.

The construction of new road routes potentially opens the way for joint and coordinated work between road and telecommunication enterprises in order to combine the construction of new roads with works to establish new conduits for optical networks.

• **Regional and harmonized legal and regulatory methodologies on sharing**

Bolivia has general regulations governing rights of way, but there are regulatory vacuums. The technical, economic and legal regulations for each case have to be considered separately. This applies to rights of way for cables in respect of electricity pylons, etc.

ESSENTIAL REGULATORY PRINCIPLES FOR INNOVATIVE SHARING STRATEGIES TO PROMOTE AFFORDABLE ACCESS FOR ALL

- Clear and sustainable public policies
- Participation of social organizations
- Availability of standard technical specifications and standards at national level
- Civic education on consumer rights and obligations
- National consumer rights and protection policy
- Up-to-date statistical data for the planning of networks in rural areas
- New regulatory framework for convergence