



# Telecommunications Regulation and Broadband Development: Implications for the Andean region<sup>1</sup>

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# Introduction

Much has been written and even more has been said about the potential impact of the development of new information and communications technologies (ICTs) on people's daily lives, to the point that the lack of access to these technologies is considered a new form of exclusion. At the same time, new developments in ICTs are happening at a phenomenal pace, giving rise to an ever wider range of services and options.

Up until a few decades ago, public policies in the telecommunications field dealt primarily with the development of fixed-line telephony, and their main objectives were limited to the expansion of the fixed-line network and access to the network for the entire population.

In the early 21st century, fixed-line telephony was pushed into the background by the advent of mobile telephony, which is now being challenged by internet protocol (IP) communications, thus raising the need for policies for the development of broadband. At the same time, we are witnessing the convergence of the communications and media sectors, which has a significant impact in terms of access to information and content – something that is essential for the pluralistic and democratic functioning of our societies.

The need to establish public policies and the importance of telecommunications regulation have become widely recognised and were highlighted, for instance, in the Declaration of Principles of the World Summit on the Information Society (WSIS), which states in paragraphs 22 and 23:

A well-developed information and communication network infrastructure and applications, adapted to regional, national and local conditions, easily-accessible and affordable, and making greater use of broadband and other innovative technologies where possible, can accelerate the social and economic progress of countries, and the well-being of all individuals, communities and peoples.

Policies that create a favourable climate for stability, predictability and fair competition at all levels should be developed and implemented in a manner that not only attracts more private investment for ICT infrastructure development but also enables universal service obligations to be met in areas where traditional market conditions fail to work. In disadvantaged areas, the establishment of ICT public access points in places such as post offices, schools, libraries and archives, can provide effective means for ensuring universal access to the infrastructure and services of the Information Society.<sup>3</sup>

We can conclude from this that we are currently facing a key moment in the definition of new paradigms for media and telecommunications policies. Researchers Jan van Cuilenburg and Denis

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<sup>3</sup> Available at: [www.itu.int/wsis/docs/geneva/official/dop-es.html](http://www.itu.int/wsis/docs/geneva/official/dop-es.html)

McQuail maintain that public policies for the sector should be guided by the “public interest.”<sup>4</sup> The approach taken by these policies will be shaped by the interaction of three stakeholder groups: the government, industry and civil society. In their analysis of the historical evolution of telecommunications policies, Van Cuilenburg and McQuail stress that civil society has had little impact on their design up until now.

To confront the political and regulatory challenges posed by the information society, civil society must actively participate in international discussions and contribute a perspective aimed at guaranteeing that all sectors of society have access to the benefits of technological development. To do this, it is essential to have baseline studies and surveys of current conditions, as well as prospective analyses of future trends. The main objective of this project is to analyse the baseline conditions for the development of broadband in the Andean region as a fundamental sub-policy for the full democratic development of telecommunications. The five case studies address different issues that must be considered when establishing a specific policy for the broadband sector. The following chapters represent an analysis of different practices, policies and regulations for achieving telecommunications infrastructure that meets the needs of the Andean region, namely in the countries of Bolivia, Colombia, Ecuador, Peru and Venezuela. The Andean region is rather unique for the fact that three of these countries – Venezuela, Bolivia and Ecuador – have carried out nationalisation processes in the telecommunications sector in the last year, thus reverting the global trend of privatisation of the sector promoted during the 1980s and 1990s.

This introduction seeks to provide a summary of the tensions that have shaped general telecommunications policies in Latin America in recent years, which have basically been guided by commercial interests. We believe that both in order to propose alternatives from a civil society perspective and to address the question of broadband development, it is essential to have a clear picture of the current situation in this field.

We start from the premise that in order to promote the social and economic development of their populations, countries need a well-developed infrastructure that facilitates access to government services, educational resources and a range of different information resources. All countries, and especially developing countries, must recognise the importance of adequate telecommunications infrastructure as one of the most critical components for their growth.

Governments play a key role by enacting policies, regulations and practices aimed at creating more robust and equitable telecommunications infrastructure in a region marked by social and economic contrasts. The digital divide that currently exists both between and within countries creates the need for discussion of the best ways and means to achieve the necessary changes. We will begin with a historical overview of telecommunications development in Latin America, where

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<sup>4</sup> Cuilenburg, J. y McQuail, D. (2003). Cambios en el paradigma de política de medios. Hacia un nuevo paradigma de políticas de comunicación, in *European Journal of Communication*, Vol. 18. Num. 2, Sage, Londres, pp 181-207 (digitalized).

telecommunications companies passed from state ownership and control to a system of market competition through different privatisation processes.

## **Telecommunications sector transformations: 1990-2000**

Numerous studies tend to classify this period as part of the “neoliberal” wave. More precisely, we could say that market deregulation, the Washington Consensus and the privatisation trend were the three main milestones that significantly influenced telecommunications development in Latin America during the decade in question.

These political factors combined with major technological advances in the telecommunications industry, such as the laying of fibre-optic cable networks, the explosion of the World Wide Web and the revolution in computer processors, which made computers both cheaper and considerably more efficient.

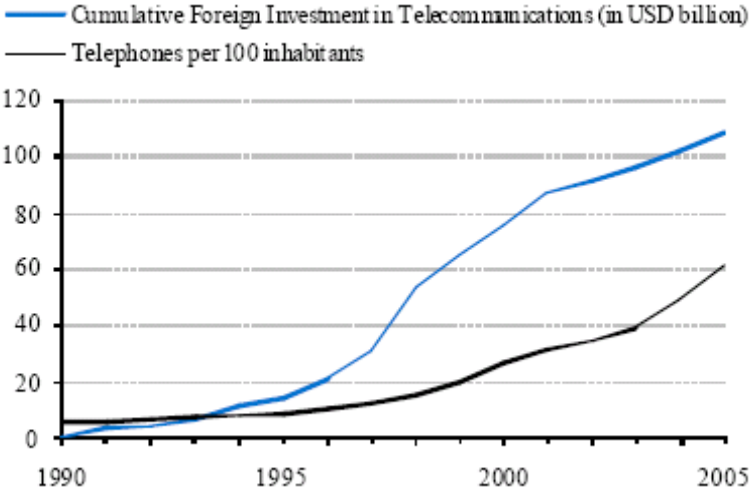
Beginning in the 1980s, this combination of neoliberal paradigms and technological developments created the conditions for a profound transformation of the telecommunications sector. After starting out under private ownership in a number of countries, from the 1950s onwards most of the countries of Latin America deemed telecommunications to be a strategic sector, and responsibility for its management was shifted to public monopoly operators. Growth in the sector under these state-owned enterprises was markedly unequal, with telephone lines highly concentrated in large urban centres and considerable delays in the adoption of new technologies. We could make the observation that telecommunications companies were not exempt from the contradictions inherent to Latin American politics in general, whereby public services did not merit the same respect from the dominant social classes as in developed societies.

The emergence of a neoliberal political context provided a forum for those who argued that the state did not have the economic capacity to assume the significant investments required for the development of the telecommunications sector, especially the adaptation of networks to the new digital environment. In most cases, there was not sufficient national private capital to take on this challenge either. As a result, telecommunications were stripped of their strategic status and were handed over to the control of large multinational corporations. Add to this the economic crisis and high levels of public debt, the promotion (through enormous pressure) of new policies in the sector by international institutions such as the World Bank, International Monetary Fund (IMF) and World Trade Organisation (WTO), new technological developments, and the enthusiastic backing of local dominant classes, and the result was a lethal combination for the continuation of telecommunications services under public ownership.

The new policies promoted by international institutions urged the state to cede ground for what was portrayed as a developmental leap forward through foreign direct investment in telecommunications companies. The Andean countries were no exception to this rule, although Ecuador ultimately did not complete all of the phases of the privatisation process (see the corresponding chapter).

Since the early 1990s, foreign direct investment has grown significantly around the world, and this includes Latin America. Figure 1, from a report published by the Organisation for Economic Co-operation and Development (OECD) Development Centre, shows the correlation between foreign direct investment in telecommunications and the growth in fixed telephone lines in Latin America as a whole.<sup>5</sup>

**Figure 1. Foreign direct investment and the increase in telephone density in Latin America**

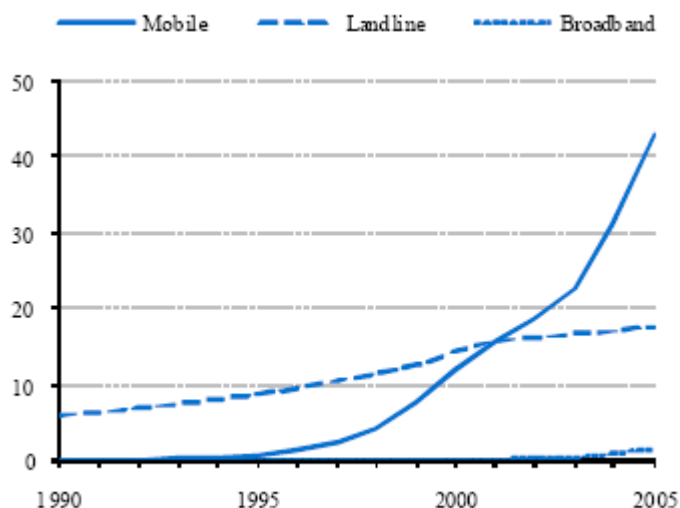


Source: OECD Development Centre Policy Insights No. 52 (October 2007)

Since the mid-1990s there has also been significant development of mobile telephony networks, which have almost without exception been private sector initiatives. After a slow start, with usage limited to the wealthier sectors of society, the introduction of prepaid service through the purchase of cards spurred massive and widespread adoption of mobile phones. The development of mobile telephony, which has now widely surpassed fixed-line telephony, is in some ways a double-edged sword. On the one hand, its massive penetration in all social sectors has given formerly marginalised sectors of the population access to a basic degree of connectivity. On the other hand, planning in the sector is entirely guided by commercial criteria, instead of meeting the need to reduce communications costs for lower-income sectors; there is a high degree of concentration of the mobile service market; and the regulatory capacity to deal with the mobile market is weak.

**Figure 2. Mobile, landline and broadband density in Latin America (lines per 100 inhabitants)**

<sup>5</sup> [www.oecd.org/dataoecd/61/51/39564103.pdf](http://www.oecd.org/dataoecd/61/51/39564103.pdf)



Source: OECD Development Centre Policy Insights No. 52 (October 2007)

According to this OECD report,<sup>6</sup> it is thanks to foreign investment that digital lines have become the norm in the region. In the mid-1990s, only one in ten Latin Americans had a phone line, but today the average rate is six in ten, which places the region above the world average of 54%. Mobile telephony has made the greatest contribution to connectivity, especially through prepaid systems.

Nevertheless, these figures merely reflect trends and averages; the region continues to be marked by inequality in access to telecommunications services between the richest and poorest segments of the population. Although mobile telephony makes it possible to serve customers with lower incomes, people in the highest income quintile are still three times more likely to have a phone than those in the lowest, and these differences are especially striking in the Central American and Andean countries.<sup>7</sup> In the meantime, the introduction of internet service, and especially broadband, has been much more gradual and has only had a significant impact in large urban centres.

Despite a variety of initiatives across Latin America involving digital solidarity funds, telecentres and digital literacy training, there are some institutions – primarily the International Telecommunication Union (ITU) and the WTO – who maintain that regulatory frameworks in the region have been unable to foster the fair competition that could benefit the poorest sectors of the population on the basis of market participation by numerous operators. On the contrary, there

<sup>6</sup> De la Iglesia, R. (October 2007). Telecommunications in Latin America. Can multinationals fill the gap? Disponible en: [www.oecd.org/dev/publications/leo](http://www.oecd.org/dev/publications/leo)

<sup>7</sup> [www.oecd.org/dataoecd/61/51/39564103.pdf](http://www.oecd.org/dataoecd/61/51/39564103.pdf)

have been a good many cases where regulatory agencies have either been directly captured by incumbent operators (those who took over control of former state enterprises) or have proven unable to promote the public interest through universal access policies and tariff reductions for end-users.

For its part, civil society has not achieved the degree of participation and impact needed to ensure an open, well-regulated and competitive environment that is not geared solely to the highest-income sectors, but also the medium- and lower-income sectors.

## Challenges for telecommunications policies

According to the ITU, in 2007 there were 123 countries that had privatised telecommunications services.<sup>8</sup> It is noteworthy that in less than a year and a half, this figure has been modified by the nationalisation of telecommunications services in Venezuela, Bolivia and Ecuador, all countries addressed in this research project. In addition, 75% of ITU member states had established a specific regulator for this sector.

As a result of profound technological changes in the sector, the concept of telecommunications as a natural monopoly has ceased to serve as justification for state ownership of telephone companies. According to researcher Gilberto García, "This technical reasoning, in line with the government strategies of the new economic paradigm, initiated the privatisation process in this sector, with the explicit intent to increase investment and thus expand infrastructure development, improve service and increase teledensity. However, the evidence gathered through this research demonstrates that the sale of telephone companies has not brought the benefits described by the rationale for privatisation."<sup>9</sup> (García, 2003: 7)

In the face of a telecommunications environment that appeared to advocate total deregulation, numerous researchers and international agencies have begun to reassess the importance of regulation as a fundamental means to guarantee mechanisms for equitable and robust development, on the part of both the industry and the state (regardless of whether or not the state participates in the market through a state-owned enterprise).

A recent study<sup>10</sup> on 20 developed and 24 developing countries found that the best strategy for promoting development was to increase investment in telecommunications infrastructure, and that

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<sup>8</sup> International Telecommunication Union (2007). Trends in telecommunication reform 2007. The road to next-generation networks (NGN) (summary) [online]. Available at: [www.itu.int/dms\\_pub/itu-d/opb/reg/D-REG-TTR.9-2007-SUM-PDF-E.pdf](http://www.itu.int/dms_pub/itu-d/opb/reg/D-REG-TTR.9-2007-SUM-PDF-E.pdf)

<sup>9</sup> Available at: [74.125.93.132/search?q=cache:uP8tnr7\\_MEEJ:www.gestionypoliticapublica.cide.edu/num\\_anteriores/Vol.XIII\\_No.II\\_2dosem/Gilberto\\_Garcia.pdf+el+impacto+de+la+privatizaci%C3%B3n+en+las+telecomunicaciones+gilberto+garcia&cd=4&hl=es&ct=clnk&gl=ar](http://74.125.93.132/search?q=cache:uP8tnr7_MEEJ:www.gestionypoliticapublica.cide.edu/num_anteriores/Vol.XIII_No.II_2dosem/Gilberto_Garcia.pdf+el+impacto+de+la+privatizaci%C3%B3n+en+las+telecomunicaciones+gilberto+garcia&cd=4&hl=es&ct=clnk&gl=ar)

<sup>10</sup> Shih, E., Kraemer, K.L. y Dedrick, J. (2008). IT diffusion in developing countries [online]. Available at: [pic.merage.uci.edu/papers/2008/ITDiffusion.pdf](http://pic.merage.uci.edu/papers/2008/ITDiffusion.pdf)

the best way to achieve this was through the promotion of competition in the sector. The availability of credit was highlighted as one of the best policies for encouraging investment in the field.

Market liberalisation in the developed countries spurred the modernisation of the telecommunications sector. But no one would deny that the development of these markets required national policies and regulations with sufficient powers to implement and enforce the rules. Some developing countries followed this European style of regulation more than others, as in the case of Brazil and India.

However, this is not an easy undertaking in countries where the role played by governments has demonstrated on numerous occasions that they are not up to the task of fostering the development of telecommunications. In Europe, the liberalisation of the sector that culminated in 1998 and was updated through the “second telecoms package” of 2002<sup>11</sup> was followed by spectacular rates of growth in internet use and steep reductions in tariffs.<sup>12</sup> In the meantime, most developing countries, and particularly those with the lowest per capita incomes, were much slower in adopting new technologies and extending service to rural and peri-urban areas. New wireless technologies and the possibilities they offer for internet and IP telephony service in remote areas, as in the case of Colombia, represent one of the most recent challenges for operators, regulators and technical personnel. At the same time, throughout the Latin American region there has been heavy concentration of ownership in the telecommunications sector that threatens the existence of even formal competition. The significant expansion in the region of Spanish telephony giant Telefónica and América Móvil, owned by Mexican magnate Carlos Slim (also the owner of Telmex), has raised serious concern over the possibility of a virtual duopoly in the regional telecommunications market.

The experience of the developed countries showed that competition led to lower prices, new products and services, and greater choice for consumers. The situation is different in the developing countries, where regulators, when they exist, tend to be weak. They frequently lack the necessary institutional/legal/political independence and technical capacity, and are often part of a system of cross influences between public and private sector operators, to mention just a few of the weaknesses and threats faced by regulatory agencies in the region.<sup>13</sup>

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<sup>11</sup> Since 2002 the EU has adopted five telecoms harmonisation directives: the Framework Directive, Access Directive, Authorisation Directive, Universal Service Directive, and Privacy and Electronic Communications Directive.

<sup>12</sup> In 2004 the cost of ADSL internet service ranged between EUR 40 and EUR 80 a month for download/upload speeds of 512/128 kbps, while in 2007 the cost of service was EUR 30 a month at a speed of 24 Mbps, and included voice over internet protocol (VoIP) telephony, basic telephony and digital TV service.

<sup>13</sup> Gómez, G., Eliades, A. and Aguerre, C. (2009). “Las mordazas invisibles: nuevas y viejas barreras a la radiodifusión”, AMARC-ALC, Buenos Aires (in printing).



One consequence of this situation is that bid specifications for service concessions have normally established greater benefits for the telecommunications corporations than for the end-users. As is illustrated by the following national case studies, end-users have continued to face high costs for services, which have also been targeted to large cities and the wealthiest sectors of the population.

Developing country markets are different from those of developed countries, which means it is not really possible to make straight comparisons between the two. In developing countries, markets are primarily rural, particularly in the Andean region. They are also high-risk markets, since investments in these areas will not necessarily lead to large profits. While state-owned monopoly telecommunications incumbents do not guarantee lower prices,<sup>14</sup> at least they have the obligation to provide basic services to the entire population.

The liberalisation of telecommunications implies the introduction of mechanisms for competition in a sector regulated by state-defined policies. Through the loss of telecommunications monopolies, developing country governments can lose a major source of revenues,<sup>15</sup> while it is usually the large multinational corporations that come out winning. However, the region has also begun to see the emergence of Latin American transnationals, or multilatinas, of which Telmex is a prime example in the telecommunications sector.

The challenges for regulation in these contexts are numerous. On the one hand, there is the issue of convergence, with the internet and IP-based networks offering a variety of applications and services that need to be addressed in regulatory frameworks. The fact that these networks allow different types of traffic to be exchanged over a common platform offers some operators the possibility of economies of scale through the vertical integration of these services. To prevent the abuse of this potential, regulators should impose obligations for network operators to provide fair and non-discriminatory access to the competition. Another challenge is posed by the use of common platforms for broadcasting and telephony. To address these new scenarios, regulatory frameworks tend towards convergence and technology-neutral policies. The accompanying case study from Peru provides a good example of the regulation for the non-discrimination of internet traffic content, more commonly known as net neutrality.

For many years the developing countries got by with telecommunications services operated by the state. Since the 1990s, the markets in these countries have been liberalised. Services have expanded and some costs have been reduced, but new challenges have emerged. Some of them are related to the implementation of telecommunications policies: how to facilitate market entry, how to provide access to low-income sectors, how to ensure interconnection among operators, how

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<sup>14</sup> Proenza, F. (2003). The Road to Broadband. Development in Developing Countries. Available at: [itidjournal.org/itid/article/view/222/92](http://itidjournal.org/itid/article/view/222/92)

<sup>15</sup> ANTEL, the Uruguayan state-owned telephone company with a monopoly on fixed-line service, contributed USD 41 million to the state coffers during the first five months of 2008. [www.elpais.com.uy/08/07/22/pecono\\_359202.asp](http://www.elpais.com.uy/08/07/22/pecono_359202.asp)

to regulate tariffs and how to protect consumers. The way in which these policies are implemented and maintained depends on the history of liberalisation and privatisation in each country's telecommunications market. As can be observed in the case studies from Bolivia and Ecuador, these market reforms have not been adopted homogeneously throughout the region, nor have they been free from resistance or setbacks. Beyond basic indicators of telecommunications infrastructure, there are also social and political factors that must be considered and assessed when defining telecommunications policies.

In the telecommunications sector, liberalisation and privatisation usually go hand in hand. Technically, privatisation is the conversion of a public state-owned company to a privately owned one, while liberalisation is the change in market conditions from monopoly control to open competition. In the liberalisation process, governments must adopt key decisions as to whether or not they will continue to maintain a state-owned operator or establish a regulatory agency. Both trends are illustrated by the following country case studies. But one of the clearest dangers observed in numerous cases in South America is that of privatising state enterprises and then proceeding with market liberalisation. This pattern of change tends to create private monopolies. Beginning with liberalisation allows for a clearer picture of the market and the regulatory risks. (Garrison, 2002,<sup>16</sup>) Obviously, the economic and political conditions in the region in the 1990s (high levels of debt and neoliberal governments) resulted in a liberalisation process that was highly advantageous for incumbent operators and left little leeway for policies to promote the public interest.

More recently, recommendations from agencies and experts associated with the World Bank (Scott Wallsten,<sup>17</sup> the Center for Democracy and Technology, infoDev) have begun to advocate competition before privatisation for developing countries. In their view, privatisation can sometimes hinder the development of competitive markets by resulting in large private monopolies with little incentive for improving service or lowering prices for end-users. Private investors tend to seek long periods of exclusivity in which they can operate without competition. For this reason, developing countries are advised to create adequate regulatory frameworks before undertaking privatisation.

Another recommendation for developing countries is the implementation of projects that are compatible with existing telecommunications infrastructure. In countries where teledensity (the number of fixed telephone lines per 100 inhabitants) is low, public access through telecentres, kiosks or libraries can be used for policies to promote greater access to services. These agencies also advocate the promotion of micro-enterprises that can become self-sustaining. The

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<sup>16</sup> Licensing in a Regulatory Framework, William B. Garrison, Workshop on Licensing and Regulatory Bodies, Hanoi, Vietnam November 2002

<sup>17</sup> Wallsten, S. (2002). Does sequencing matter? Regulation and privatization in telecommunications reforms [online]. Available from: [www.isnie.org/ISNIE02/Papers02/wallsten.pdf](http://www.isnie.org/ISNIE02/Papers02/wallsten.pdf)

accompanying Colombian case study is a concrete example of a national policy aimed at bringing telecommunications to indigenous and rural communities.

Significant emphasis is also being placed on wireless technologies as a more affordable and easier to implement technological solution than traditional wired broadband connections. Wireless standards such as Wi-Fi and WiMAX hold particularly high potential for last-mile connectivity. Both standards are governed by civil society organisations, although with industry backing, which shows that private/social, public/private and social/public partnerships are mechanisms that should be explored in greater depth to resolve the problems of access to technology in local communities.

## Final considerations

In view of the foregoing, there is no doubt that in order to approach the subject of broadband development in the Andean countries, it is important to begin by considering the regulatory capacity of these countries with regard to telecommunications and sketching a brief history of public policies while considering the implications of new trends pursued by current governments.

Debate over the most effective models for developing national telecommunications infrastructure and the pendulum swings between privatisation and nationalisation tend to overshadow the importance of other mediating and highly influential factors, such as the formulation of policies geared to development and to the historical and cultural particularities of each country. Given the new configuration of the telecommunications sector in the Andean region, it is important to consider the new challenges emerging from these new conditions, but without losing sight of the recent lessons learned.

One of the biggest challenges is to define strategies for bridging the current infrastructure gap (both between countries and within societies), especially with regard to broadband. This will require the implementation of integrated solutions with an eye to both the medium and long term. Telecommunications policies should be integrated with economic and social policies that also seek a better distribution of wealth. Telecommunications policies, legislation and regulation should be undertaken and understood from multidimensional perspectives, with a holistic vision and interventions at different levels to enhance access to ICTs for society as a whole.

In many cases it is essential to look beyond whether the gap can be filled through public investment or through exclusively market-centred approaches. We believe that the solution lies in the combination of both approaches, and in the creation of the conditions for the coexistence of commercial models and cooperative or community models, since purely market-based strategies have failed in the provision of universal access. At the same time, several of the countries in the region studied here have entered an era in which the area of ICT access, as well as other areas related to development, reflect greater demands on the state than on the market, or at least a balance between these two types of intervention. We believe it is necessary to restore confidence in state-driven action to ensure universal and open access to ICTs. Moreover, state participation is crucial to counteract the use of technology for economic and ideological purposes, which can lead

to economic dependency and cultural subordination.

We have attempted to provide a general context that will allow for better understanding of the case studies that follow. All of them present different issues that must be considered for the implementation of policies to stimulate access to broadband service for the entire population. Of course, even in a region where countries share similar histories and socio-demographic structures, the levels of development and options chosen are highly divergent. In Bolivia the state must address broadband policies in the framework of a major social restructuring process in which telecommunications can play a strategic role. Ecuador is analysing strategies for the development of new networks to facilitate access after the failure of the privatisation of the sector. The case study from Colombia describes the tensions confronted by the ambitious programme to establish Community Access Centres in a more politically stable and economically sound setting. Finally, the case studies from Peru (on net neutrality) and Venezuela (on the creation of a national access point or NAP) reflect fundamental considerations for the promotion of broadband development in the region in the framework of serving the public interest.

Developing a broadband network that ensures universal access and affordable prices for the entire population entails a new challenge for democratic telecommunications policies. In order for this to become a reality, the active, coordinated and committed participation of civil society is crucial. Finally, success will not be complete unless progress is also made in the conceptualisation of communication itself, in the sense of establishing the right to communication as a basic right for the exercise of full citizenship.