

6.2 Why Regulate?

To understand the role of regulation in enabling the growth and development of the information and communications technology (ICT) sector and the requirement of a strong legal and regulatory framework for effective regulation, first it is necessary to discuss the need for regulation. This Chapter provides an overview of the reasons for regulation given the structural changes in the telecommunications sector from monopoly to competition, and the importance of regulation in transitioning to an effective competitive environment and fostering the long-term development of the ICT market.

Reference Documents

- [Creating the “Right” Enabling Environment for ICT](#)
- [European Competitive Telecommunications Association Regulatory Scorecard 2005](#)
- [Feedback to Regulators from the Private Sector](#)
- [Introducing Telecommunications Competition through a Wireless License](#)
- [Morocco: Effective Regulation Case Study](#)
- [Organisation for Economic Co-operation and Development - Regulatory Reform as a Tool for Bridging the Digital Divide](#)
- [Regulation and Investment - Sri Lanka Case Study](#)
- [Subscribing to Monopoly, The Monopolist's Lexicon-Revised](#)

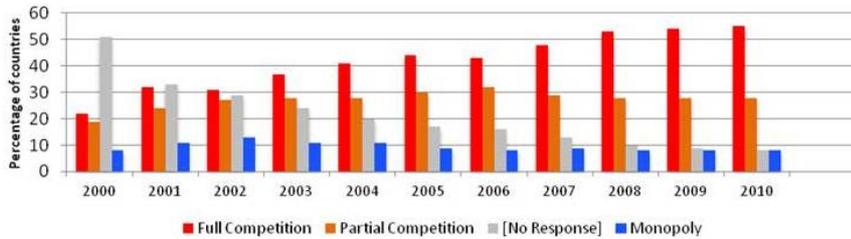
6.2.1 EVOLUTION OF REGULATORY REFORMS

Prior to the telecommunications sector reforms undertaken in many countries during the last two decades, telecommunications services were largely provided under monopoly conditions, either by state entities or, to a lesser extent, by private companies. Often the operator and regulator for telecommunications services was the government; therefore, no regulatory independence existed. This classic model of supply generally concentrated policy-making, regulatory, frequency management and network operating responsibilities in a single entity.

This model worked well for many years in the more developed economies, where long-distance and international tariffs, which stayed high despite significant decreases in costs due to technological change, basically subsidized local services and led to relatively high levels of universal service. However, the model did not work as well in developing countries where networks were generally restricted to urban areas and more accessible to middle/high income consumers. Cross-subsidization kept local prices low for the wealthy, but did not generate sufficient income for infrastructure investment, and low-income consumers were subject to long waiting lists and poor quality of service.*

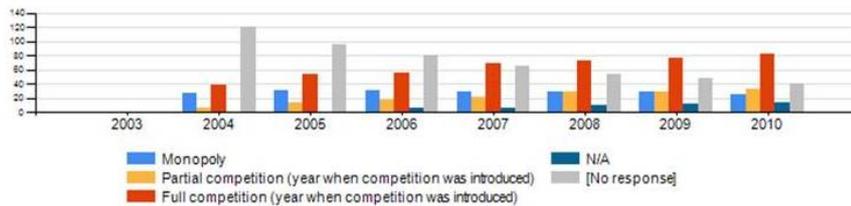
In the 1980s, countries began to recognize the increasingly important role of the telecommunications sector for economic growth. As a result, in primarily developed nations, policies evolved to introduce competition – albeit, often limited in scope, in an effort to inject dynamism into the sector, spur innovation, increase choice, enhance availability, and lower tariffs. In the 1990s, partly as a result of national, regional and multilateral efforts (further discussed in Chapter 3), many countries introduced the first wave of reform by privatizing their national operators. In the second wave of liberalization, which sometimes occurred simultaneous with the privatization or followed soon thereafter, governments began allowing the introduction of new services (e.g., mobile services and value-added services) into the market. These new services generally did not compete directly with the privatized basic telecommunications operator, which often had been granted an exclusivity period, or the non-privatized government-owned incumbent operator. The third wave of liberalization occurred once the incumbent operator's exclusivity period was over and full competition could be introduced.

As shown in the figures below, there has been a global trend towards greater liberalization and the introduction of competition across ICT sectors.* In both the mobile services and international gateway markets, for example, full competition is the norm worldwide and has been steadily increasing over the last several years. At the same time, monopolies have declined in favor of the introduction of at least partially competitive markets.



◀ Figure 2-A: Status of Completion in the Mobile Services Market Worldwide (2000-2010)

Source: ITU, World Telecommunication Regulatory Database (2011).

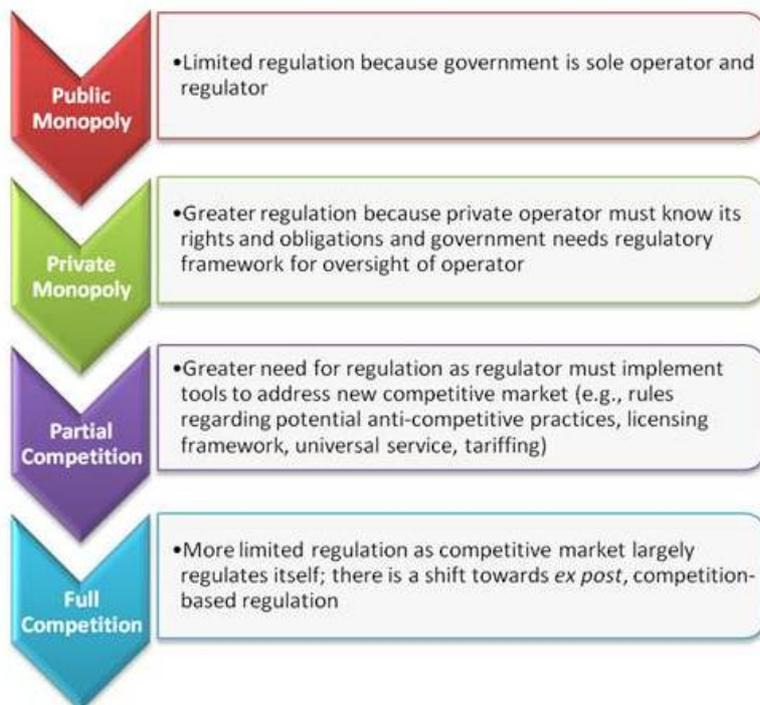


◀ Figure 2-B: Status of Competition In International Gateways Worldwide (2003-2010)

Source: ITU, World Telecommunication Regulatory Database (2011).

6.2.2 REGULATION IN TRANSITION TO COMPETITIVE MARKET

The introduction of competition in the marketplace does not mean regulation is unnecessary. Quite the contrary, the role of the regulator actually increases once governments authorize competition (See Figure 2-C), particularly during the early stages of transition from the former model of monopoly provision to one of effective competition. In order to transition to an effective competitive environment, regulators must establish a regulatory framework that can resolve disputes, address anticompetitive abuses, protect consumers, and attain national goals such as universal access, industrial competitiveness or economic productivity and growth.*



◀ Figure 2-C: Need for Regulation during Transition from Public Monopoly to Fully Competitive Environment

Source: Telecommunications Management Group, Inc.

As noted in Figure 2-D below, regulation is not an end in itself. Rather it is the vehicle to attain, and subsequently sustain, widespread access, effective competition and consumer protection. The liberalization and introduction of competition in the market requires strategic policies and regulations that establish an effective regulator (as discussed in Chapter 5), remove explicit barriers to entry (e.g., the inability to interconnect with the incumbent operator), and dismantle implicit barriers (such as the potential influence of the incumbent telecommunications operator over the regulator). As such, regulatory reform must include measures aimed at:

- creating independent entities to oversee the introduction of competition in the market and establish regulatory mechanisms for issues such as interconnection, licensing, and tariff rebalancing,

- preparing the incumbent operator to face competition, including timetables setting deadlines for the termination of market exclusivities,
- allocating and managing scarce resources such as numbers and spectrum resources in a non-discriminatory way within the liberalized market,
- expanding and enhancing access to telecommunications and ICT networks and services, and
- promoting and protecting consumer interests, including universal service and privacy.



◀ Figure 2-D: Goals of Regulation

Source: Telecommunications Management Group, Inc.

As effective competition in ICT markets develops around the world, regulators are finding that an overarching *ex ante* approach to regulation, which seeks to prevent market failures through the implementation of sector-specific, forward-looking rules, can be less effective than *ex post*, competition-based frameworks at fostering more innovative markets. Rather than apply blanket prohibitions or obligations on certain activities as found under an *ex ante* framework, *ex post* regulation uses competition law to remedy specific instances of anti-competitive conduct.* Currently, about 100 countries have adopted competition laws, of 25 percent are developing countries.*

In transitioning from an *ex ante* to *ex post* regulatory framework, it is necessary to ensure that an effective framework is in place capable of identifying, reviewing and enforcing alleged anti-competitive behaviors. As the ICT markets in a country mature and regulators begin phasing out certain *ex ante* regulations, it is important to consider, on a case-by-case basis, sunset provisions or transition periods so that stakeholders, including service providers and consumers, are able to adapt to the new *ex post* regulatory environment.

Countries that have traditionally relied on strong state intervention, especially where ICT providers have been largely owned or supported by the government, may face particular challenges in the development and implementation of an *ex post*, competition-based framework due to lack of legal precedent and experience in this area. For countries without a general competition law regime, it is possible for the ICT regulatory authority to establish an *ex post* framework for the ICT sector.*

However, even where competition in ICT markets is robust, policy makers may find that targeted *ex ante* rules are needed to direct certain market activities, such as wholesale access or unbundling obligations on the physical network layer (see Box 2-1). When adopted, *ex ante* regulation should be narrowly tailored to address the specific instances of expected market failure and should follow three broad guidelines: 1) *ex ante* rules should reflect the country's stated policies and objectives in the activities to be regulated; 2) *ex ante* rules should first seek to resolve potential market failure at the wholesale level; and 3) *ex ante* rules should be reviewed on a regular basis and withdrawn once effective competition in the relevant market exists or the rules are no longer warranted. In other words, *ex ante* regulation should be considered a temporary measure meant to facilitate a competitive market.

◀ Box Imposing targeted *ex ante* regulation on the physical layer.

Source: Telecommunications Management Group, Inc. (TMG)

- **Regulation should reflect national conditions and goals**

Countries have different socio-economic, geographic, and political circumstances. In addition, their level of infrastructure development can vary widely. As a result, solutions to reach national goals that were effective in one country may not translate to another and must be tailored. Therefore, imposing *ex ante* regulation will require a fact-based assessment of a country's the market conditions and entails the collection, review and analysis of detailed information in order to attempt to accurately predict future behaviour and outcomes. *Ex ante* regulation should be targeted to address the specific problem(s) detected. A clear and accurate demarcation of the circumstances where market forces will not deliver desirable outcomes will be key to implementing targeted *ex ante* regulation in the coming decade.

- **Regulation should first attempt to resolve market failure at the wholesale level**

In liberalized ICT markets, any *ex ante* regulation should be primarily focused on wholesale services and facilities. Where a regulator identifies competitive concerns at the retail level, narrowly-tailored regulation of wholesale inputs identified as bottlenecks is generally preferred, allowing other links in the value chain of end-to-end services to be more responsive to the competitive process. This approach ensures that competitive concerns at the retail level are adequately addressed while also limiting *ex ante* regulation to those areas where the benefits to consumers cannot be achieved using *ex post* regulation.

- **Regulation should be periodically reviewed and phased-out when warranted**

The dynamic nature of ICTs requires regulators to monitor and periodically reassess competitive conditions in the marketplace. Technological changes can quickly impact the ICT market, displacing the rationale for *ex ante* regulation or shifting its focus towards other links in the ICT value chain. Periodic monitoring requires regulators to devote significant time and resources to reviewing and revising targeted *ex ante* regulation since static regulation may stifle innovation and investment. Given their resources, when adopting *ex ante* regulation, regulators should strike the right balance between safeguarding the interests of consumers and promoting long-term development of the sector. Although *ex ante* regulation may be necessary in the short term, the goal is to reduce *ex ante* rules as competition develops and, ultimately, for ICT services to be disciplined primarily by competition law.

6.2.3 REGULATION IN A FULLY COMPETITIVE ENVIRONMENT

In a fully competitive environment, there is a more limited need for regulation. However, regulatory authorities still have a critical role to play, particularly given the dynamic role of the sector and the unsettled issues that new technologies may introduce into the regulatory environment. Moreover, in certain areas, regulators need to maintain a prominent role because market forces often fall short of creating the conditions necessary to satisfy public interest objectives such as universal access and service.

Universal access/service policies are generally directed at achieving objectives such as the promotion of economic productivity and growth; the promotion of political and social cohesion through the integration of isolated communities into mainstream society; the improvement of delivery of government services; and the elimination of economic and social disparities between the "information rich" and the "information poor."¹ In certain areas of a country, however, significant upfront investments, high operating costs, and uncertain demand make it difficult to reach these objectives on commercial grounds. Thus, government initiatives directed at providing telecommunications access and services to rural, remote, and unserved areas may need to be adopted. In such cases, regulators should narrowly define and identify the areas and services that will benefit from government subsidies or incentive programs so as to avoid closing the door to private investments in areas where market forces alone do not provide an incentive to offer services in such areas.²

Similarly, despite the increased reliance on market forces in the telecommunication sector, regulatory agencies must ensure that spectrum use is properly managed and allocated. This role cannot be left solely to market forces, since the introduction of new technologies may be limited by interference, inefficient spectrum use, or lack of access to spectrum (e.g., introduction of digital television).

Despite the benefits of new technologies, regulators also must be attentive and responsive to the regulatory issues that arise from the implementation of these new technologies and their related services. For example, in today's environment, regulators are grappling with how to address issues such as spam and consumer concerns regarding privacy, which were not issues of concern to regulators ten years ago. In addition, while new technologies often offer consumers greater choices at lower prices, regulators have a responsibility to ensure that consumers are aware of the potential limitations that may exist with these lower-price offerings (e.g., emergency services may not available through such services; services offered may be

of a lower quality of service). Moreover, as these new services gain prominence regulators also will need to consider whether they should be subject to obligations imposed on other providers (e.g., universal service).

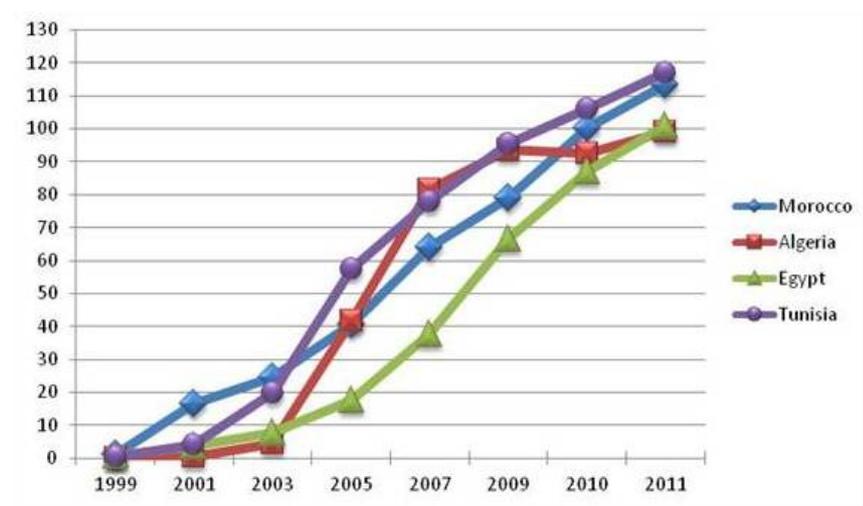
6.2.4 BENEFITS OF REGULATION

Effective regulation has proven to result in greater economic growth, increased investment, lower prices, better quality of service, higher penetration, and more rapid technological innovation in the sector.

Increased Investment

Liberalization in the telecommunications sector has been greatly encouraged by World Trade Organization (WTO) commitments and obligations, particularly the WTO Reference Paper on regulatory principles.^{*} Early evidence of the impact of liberalization under the WTO's Basic Telecommunication Agreement (BTA) in low income Sub-Saharan African countries shows that growth in telecommunications revenues as a percentage of GDP is higher in countries that have made GATS commitments in telecommunications.^{*} Thus, investors are likely to be more willing to commit capital and technology in countries with WTO telecommunications commitments, as they are likely to be rewarded with higher revenues. Uganda, for example, reformed its telecommunications sector and enjoyed healthy revenue growth, while Ethiopia, which had not reformed, experienced much lower revenue growth.^{*}

Morocco understood how important effective regulation was to attract foreign investment to developing economies as it began laying the groundwork for privatization and liberalization of its telecommunication market in the late 1990s. It passed the Post Office and Telecommunication Act (Loi sur la poste et les télécommunications) in August 1997 and created the National Agency of Telecommunications Regulation (Agence Nationale de Réglementation des Télécommunications, ANRT) in February 1998. By designing its vision for a liberalized market in a clear and transparent way, the Moroccan framework inspired investor confidence, which was reflected in the country's auction of a second mobile digital cellular licence in 1999. The winner, Medi Telecom (a joint venture of Spain's Telefonica and Portugal Telecom along with local investors) paid USD 1.1 billion for a 15 year license. This was the largest investment ever in Morocco and one of the highest prices ever paid for a mobile licence (in relation to the population).^{*} From being the country with the second lowest telephone penetration in the North Africa region, Morocco became the country with the one of the highest (Figure 2-E). The number of mobile subscribers grew from 375,000 in 1999 to over 9 million by year-end 2004. By 2009, there were over 25 million mobile subscribers in Morocco.^{*} While just over 1 percent of the population had a mobile phone in 1999, this had risen to almost one-third by 2004 and exceeded 100 per cent mobile penetration by 2010. In December 2000, the incumbent operator, Maroc Télécom, was partially privatized through the sale of 35 per cent of its equity to Vivendi Universal, a French conglomerate. The privatization was regarded as one of the most successful ever in a developing country, generating MAD 23 billion (USD 2.3 billion).^{*} Morocco's success clearly illustrates how effective regulation of the sector can trigger dramatic increases in ICT development.



◀ Figure 2-E: Mobile Telephone Penetration in Selected North African Countries

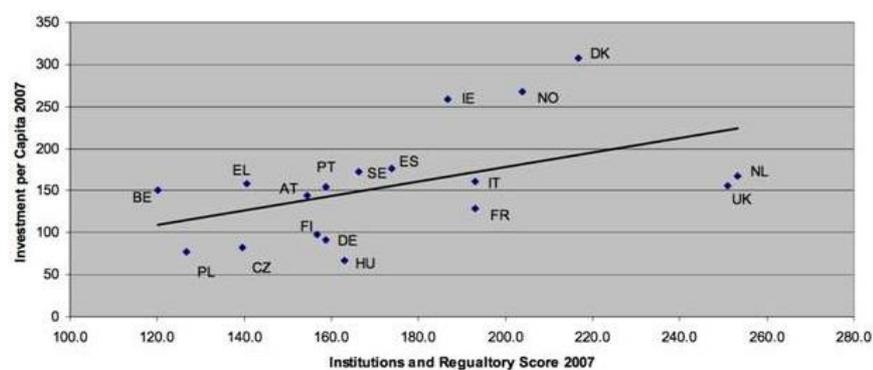
Source: ITU ICT EYE, ICT Statistics: Mobile Cellular Subscriptions (1999-2011)

As shown in Figure 2-E, mobile penetration rates in other North African countries have also soared since 2003, particularly Algeria and Tunisia, which surpassed Morocco around 2005. Notably, both Algeria and Tunisia initiated comprehensive liberalization reforms prior to achieving higher mobile penetration rates. In 2000, the Algerian government issued a draft telecommunications policy providing a roadmap toward liberalization and market reforms and a draft Telecommunications Law creating a separate, independent ICT regulator and providing for a multi-operator market.^{*} At the time, the telecommunications sector, including fixed line and mobile telephony, operated under full monopoly market structures and

investment in the telecommunications sector as a whole was less than USD 150 million per year.* Algeria requested assistance from the World Bank to design and implement market reforms. By 2002, the new telecommunications law and all key secondary legislation were adopted and privatization was achieved by 2004. In addition, two new mobile licences were awarded to private operators in 2004 through a transparent and competitive bidding process, which led to tremendous growth in the mobile services sector. As shown in Figure 2-E, Algeria's mobile penetration rate increased from fewer than five in 1999 to nearly 42 subscriptions per 100 inhabitants by 2005, soaring to 100 percent penetration by 2011. The World Bank concluded that one of the main lessons of Algeria's reforms is that "competition, brought about by liberalization in the telecommunications sector, is the most effective driver for sector performance."* Investors consider the regulatory environment to be a critical factor in their analysis of whether or not to invest in a country. They often have a set of regulatory conditions that must be present for them to consider an investment in a particular country. A report 4 presented at the ITU's 2002 Global Symposium for Regulators summarizes several key findings from the private sector on this issue:

- Regulatory issues are a key factor in market entry and expansion decisions;
- Interactions between regulators and operators are most challenging during times of transition;
- Companies look at the overall regulatory environment – not just specific regulations. Transparency and responsiveness are important factors in the willingness of companies to enter and stay in markets;
- Companies employ a variety of ways to ensure that regulatory information is factored into business planning and decision-making.

Further, as noted by the European Competitive Telecommunications Association (ECTA), a link exists between good regulation and the amount of investment attracted into a country. ECTA has designed a "scorecard" to assess regulation in the European Union. It compared the results of the scorecard to investment in the ICT sector and found that "...effective regulation continues to have a strong and positive impact on the level of investment in telecommunications networks and services."* Countries that rank high in the scorecard tend to have higher levels of telecommunications investment in relation to total investment in the economy (Figure 2-F). ECTA reiterated the relationship between liberalization and investment in its 2009 Scorecard, stating that "[o]nce again, therefore we find that pro-competition regulation is strongly associated with higher levels of investment in the electronic communications market."*

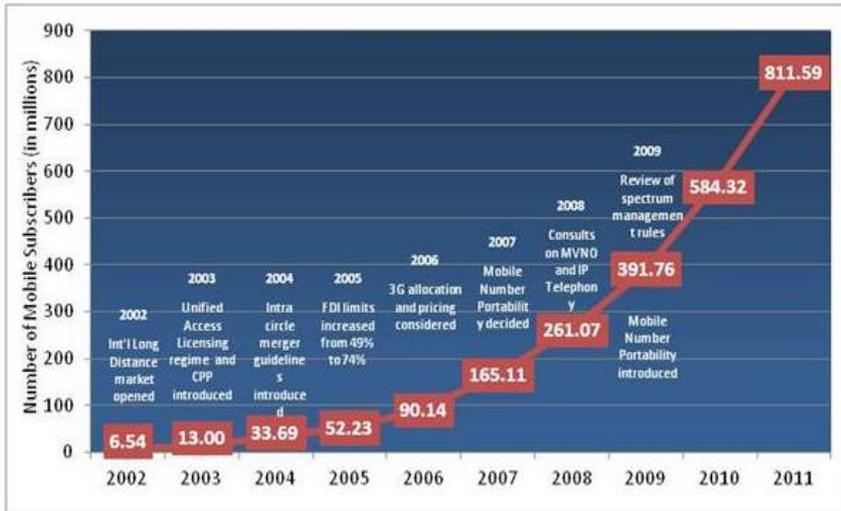


◀ F: Relationship between ECTA Scorecard and Investment

Source: ECTA, "Regulatory Scorecard".

Economic Growth and Consumer Benefits

Developing economies in Asia have made significant strides towards pro-competitive regulation and in return have achieved considerable progress in bridging the digital divide. One such country is India, where the Telecom Regulatory Authority of India (TRAI) has made a comprehensive reform of the regulatory framework to promote technological neutrality and take advantage of inter-modal competition.* Competition was enhanced by issuing additional mobile licenses in 2001 and 2002 and awarding wireless local loop (WLL) licenses in 2002. Another relevant measure taken by TRAI was to move from a receiving-party-pays (RPP) to a calling-party-pays (CPP) structure in an effort to spur mobile take-up. The results of these policies have brought economic growth to the sector and produced a marked increase in mobile subscribers and a fall in mobile tariffs (see Figure 5-F). By contrast, the failure to adopt such measures, along with other factors such as delay in the introduction of a sufficiently pro-competitive interconnection regime between fixed and mobile services, has been identified as one of the causes that slowed investment and customer growth in the mobile market in Sri Lanka.*

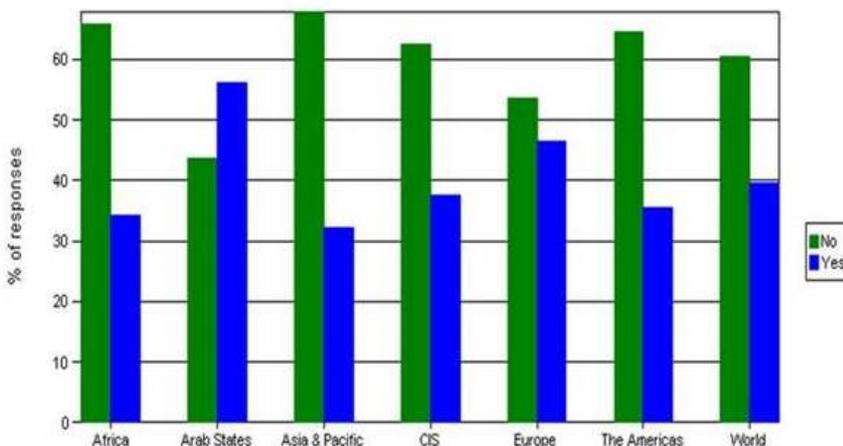


◀ Figure 2-G: India's Regulatory Reforms for Mobile Services and Increase in Mobile Subscriptions 2002-2011)* TRAI, Annual Report 2005-2006 and Annual Report 2009-2010. <http://www.trai.gov.in/traiannualreport.asp>

Source: TRAI, Annual Report 2005-06, Annual Report 2009-10 and Annual Report 2010-11.

Growth of New Services

In order to promote the growth of new products and services, a flexible regulatory framework capable of adapting to the rapid pace of technological developments is needed. As such, the implementation of a unified licensing or general authorization regime helps to stimulate the growth of new and innovative services by allowing licensed operators to offer a broad range of services under a single authorization. In some instances, however, it may be unclear how current regulations and licensing rules apply to new services, particularly those involving converged technologies. In these cases, it is important that ICT regulators act as quickly as possible to offer guidance on the regulatory treatment of these technologies and services, keeping in mind that liberalization provides the greatest opportunity for investment and growth. Voice over Internet Protocol (VoIP), also called IP telephony or Internet telephony, has been one of the most successful converged technologies over the last decade, despite the fact that the rules regarding the general provision and use of VoIP is unclear or explicitly banned in many countries. Nonetheless, over 60 per cent of countries worldwide have reported to the ITU that specific VoIP policies are in place (see Figure 2-H).



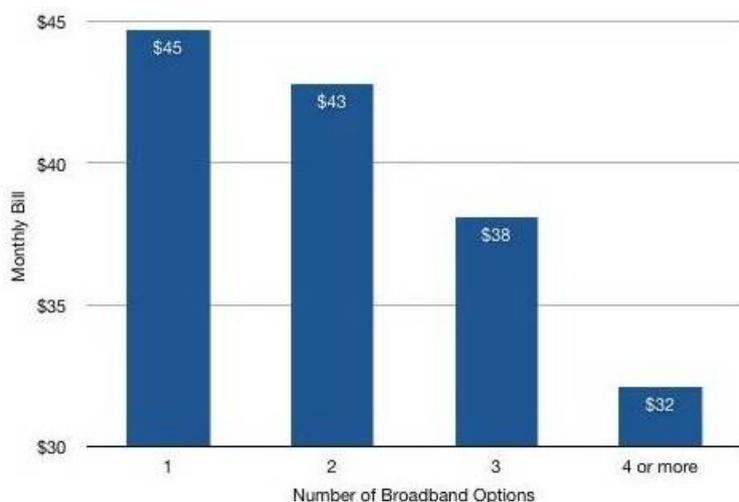
◀ Figure 2-H: VoIP Policies, 2011 or latest data available

Source: ITU, Telecommunication Regulatory Database, 2011.

Converged technologies, including VoIP, promote facilities-based competition by allowing DSL, cable modem, fiber network and wireless service providers to compete directly with one another. VoIP boosts service-based competition by enabling new service providers, such as Skype, to compete with incumbent operators without owning their own network infrastructure, which is likely to result in new and better services, as well as improve incentives for domestic and foreign investment.* VoIP also offers substantial cost advantages to facilities-based operators since the “[t]ransmission over IP-based networks can cost as little as a quarter of equivalent PSTN transmission.”* In addition, VoIP can reduce maintenance costs for network operators by 50 to 60 per cent since an IP call typically requires only 10 per cent of the bandwidth required for a PSTN call. Ultimately, “[i]f policy frameworks restrict competition, or stop convergence from playing out in a market, they lead to suboptimal outcomes that reduce the development impact of ICT. Consequently, developing countries can increase access to advanced technologies and innovative, high-quality services by opening markets, promoting competition, and removing regulatory barriers to new technologies and business models.”*

Lower Prices for Consumers

In a competitive market, operators typically pass on cost-savings to consumers through lower retail tariffs, such as by replacing circuit-switched telephony with VoIP.^{*} Even if some operators choose not to reduce retail tariffs, consumers can take advantage of lower prices in a liberalized environment by switching to other service providers and/or technologies. For example, it has been shown that lower prices for international telephone calls are highly correlated with the level of competition. In Africa, one of the regions of the world where competition in long-distance telephony is lowest, prices for both international telephone calls and broadband services are much higher than in other regions of the world.^{*} A 2009 survey conducted in the United States by the Pew Research Center found that retail prices for broadband services are closely correlated to the number of broadband providers available—the average monthly bill was USD 32 in areas with four or more providers as compared to USD 45 in areas with only one provider (see Figure 2-I).^{*} Regulators must often intervene to remedy shortcomings in competition that may include imposing some form of regulation, such as setting interconnection rates, to force incumbent operators to charge competitive operators wholesale cost-oriented rates. It may also be necessary to eliminate restrictions on resale to allow entry of multiple operators and stimulate competition.



◀ **Figure 2-I: Competition in the Broadband Market Results in Lower Consumer Prices**

Source: Jordan Golson, "Competition Breeds Lower Broadband Prices," GigaOm, June 17, 2009, <http://gigaom.com/2009/06/17/competition-breeds-lower-broadband-prices/>

Liberalized markets in the same region and at similar income levels typically have penetration rates higher than those with non-liberalized markets. For example, the Latin American countries of Belize and Brazil have similar income levels but fixed-line penetration rates varied considerably, as of 2011. In Belize, where the incumbent operator maintains a monopoly on fixed-line provision, the fixed-line telephony penetration rate is 9.07 lines per 100 inhabitants while the fixed-line broadband penetration rate only 3.05 lines per 100 inhabitants.²² In contrast, Brazil's fixed-line markets are considered fully competitive—the country's fixed-line penetration rates are more than double that of Belize, at 21.88 lines per 100 inhabitants for fixed-line telephony and 8.56 lines per 100 inhabitants for fixed-line broadband.

As demonstrated in Chapter 3, regulation is impacted by a variety of factors, including legal traditions, multilateral and regional commitments, other legislation and the nature of the marketplace. Thus, while the design of the regulatory framework may vary, certain critical elements should be included in an effective regulatory framework. These features, discussed in Chapters 5, 6, and 7, relate to elements for effective regulation, aspects to consider when designing the regulatory framework, functional aspects of the regulatory authority, and decision-making, accountability, consumer protection, dispute resolution and enforcement powers. Consideration and proper implementation of these features are the formula for success and will facilitate the benefits to consumers, the market, and the economy that have been achieved in many countries that have undergone regulatory reform.

Next: 6.3 Legal Context of Regulatory Reform →

