

The role of regulation in telecommunications industry

Lawrence Dinga

Faculty of Law, Open University of Tanzania, Dar es Salaam, Tanzania

Abstract

Beginning 1980s countries began to recognize the increasingly important role of the telecommunications sector in the economic and social development. This saw developed nations starting to craft policies that could spur competition and inject some dynamism into the sector, spur innovation and enhance availability of services. Prior to liberalization and reforms in telecommunications sector in the 1990, many countries had their telecommunication services provided under monopoly conditions mainly with the government acting as both the operator and the regulator. In the 1990s many countries embarked on the first wave of liberalization by privatizing their national operators. This was followed by the second wave which saw the introduction of new services such as mobile telephony and value added services into the market. The third wave of liberalization introduced full competition by removing exclusivity that had been granted to many incumbent operators. With the full competition in the telecommunications sector, there came the need for regulation in order to protect consumers, supervise industry operators and prevent anti-competitive behaviors, stimulate innovation and investments and create a level playing ground for fair competition.

This paper discusses the role of regulation in telecommunications industry.

Keywords: telecommunications industry, social development, liberalization

Introduction

Effective regulation of telecommunications is aimed at ensuring that sanity prevails and that the sector is working in an expected way by protecting the interests of all stakeholders in fairly and balanced manner, providing confidence to new market entrants and ensuring that existing compliance and enforcement regulations are strengthened and adhered to by all the players.

The liberalization of telecommunications sector in the 1990s encouraged many governments to authorize competition by discarding the former monopolistic model. Telecommunications is the only sector where companies can reach end users through the networks of their competitors and therefore competitors need to compete and cooperate at the same time. The introduction of effective competitive environment called for enactment of strategic policies and the establishment of regulatory framework to address new issues arising out of this new environment such as dispute resolution among players, consumer protection, anticompetitive abuses, universal access goals and other economic growth and productivity.

The Role of Regulation

The primary goal of regulation is to create a level playing ground for all operators amongst other functions. In order to discharge its roles effectively, the regulator should have bona fide authority and the requisite ability with its responsibility clearly enshrined in the law and its independence guaranteed. The regulator's procedures and processes should be transparent and promote public participation to ensure accountability and public confidence.

a. Tariff Regulation

Tariff regulation is an important role for a regulator and creating a successful and transparent tariff regime can

effectively lead to an orderly competition in the sector. At the time market competition is maturing up, there is need for the regulator to apply different tariff regulations on non-dominant operators against dominant operator by ensuring that the non-dominant operators are subjected to less oppressive regulations in order to enable development of fair competition. For example, dominant operator may be subjected to tariff approval by the regulator while non-dominant operators may only be expected to only to publish their tariffs.

In essence the objective of tariff regulation is to curb the dominance abuse in both monopolistic and competitive markets. In a monopolistic environment where the dominant operator faces no effective competition, the regulator is mainly concerned with setting pricing that are substantially above the cost to enable the dominant operator earn a monopoly level of profit so as to get the maximum return on capital invested. In other instances, the regulator may impose a price cap regime without considering the rate of return so as to provide some level of stimulation for operators to function productively and minimize costs. In competitive markets, especially during the early period of liberalization, the regulator is more concerned with anti-competitive pricing approaches which are more geared towards discouraging new market entrants. Such are cases where the dominant operator sets retail prices of some services below cost. The regulator must have the explicit prohibitions regarding such anti-competitive pricing especially predatory pricing.

It is expected that the regulator establish rules that demand dominant providers to offer telecommunication services on terms and conditions that are just, reasonable and non-discriminatory and in compliance to filed tariffs. No dominant operator should be allowed to abuse its market position by setting prices that are below the recommended

threshold to stifle competition. It is the role of the regulator to adopt consistent principles and procedures to ensure that prices are just and reasonable.

b. Spectrum Management

With the advancement of communications technology, the available spectrum that makes these technologies accessible to the population is becoming a more scarce resource. The explosion of radio stations, mobile operators, broadcasting networks, air traffic control towers require different frequencies to operate efficiently. As more and more technologies and services grow in demand, the need for spectrum management becomes an essential part of telecommunications regulation. Spectrum is a fundamental and valuable national resource in any country and the state regulator should formulate a proper framework for spectrum management where policies, allocation assignments, services and enforcement rules and licensing obligations are determined. Spectrum management at the national level can be the responsibility of the state regulator or state ministry or may be a shared responsibility between the regulator and the ministry depending on each country's particular circumstances. Whatever the entity is responsible for its management, it is important that the process of assigning and allocating the national spectrum remains transparent, non-discriminatory and accountable to ensure that the resource is fairly distributed and used effectively for the optimum economic development of the country. As countries continue to rely more and more on communications to spur national growth and development, efficient use of spectrum and its effective management can contribute immensely to any country's prosperity while its scarcity whether artificially created or not can adversely affect any country's economic development.

As spectrum scarcity is experienced due to increased demand especially in the densely populated urban areas, regulators could use various approaches to minimize shortages and improve efficiency through administrative methods such as in-band sharing, spectrum leasing, and use of unlicensed spectrum in combination with technologies such as ultra-wide band and multi-modal radios. The use of more advanced telecommunication equipment and technologies such as shifting from analogue to digital television can also minimize the scarcity of this invaluable resource.

In emerging as well as developed economies, the future and continued growth and development in telecommunications industry especially broadband will be dependent on the availability and access to spectrum as it is essential in promoting market competition and innovation. Inadequate availability and access to spectrum can adverse effects such as higher prices for consumers, low number of new market entrants and dwindled innovations. It is the role of any regulator to put in place national plans and efforts to make communications spectrum available by any means.

c. Restrain Abuse of Market Power

One of the main objectives of regulation is to encourage transition from state monopoly to a more competitive market environment thereby promoting the interests of all stakeholders and public at large. In monopolistic environment where the dominant operator remains the largest market power, consumers should be protected from abuse of this power through inflated prices, low supply that

fails to meet the demand, poor quality of service and reliability, sluggish launch of new services into the market and corrupt practices. At the same time new market entrants should be protected from market power abuse by the incumbent.

d. Encourage Competitive Environment

Regulating the telecommunications industry is of importance to create a level playing ground for new market entrants to compete against the well-established and incumbent operators. Since the incumbent operators always have huge advantages such as stable customer base and market power, new market entrants need the assurance that adequate regulation will provide the necessary protection and bar the incumbent operators from engaging in some anti-competitive behaviors or abuse their dominant posture in the market. Such behaviors could include instances of predatory pricing, discriminatory provision of network facilities and other network related services provided to competitors, unfair trade practices among others. Regulators are therefore expected to enact clear competition policies and rules that effectively and transparently address these anti-competitive behaviors and practices in the industry.

It is imperative for regulators to show credibility when dealing with these competition issues and do a thorough investigations on cases brought before them by complainants expeditiously to restore market confidence. The law should also give regulators enforcement powers in order to impose the necessary penalties and provide remedies in cases of proven anti-competitive behaviors and practices so as to protect new market entrants and foster competition in the industry.

e. Access and Interconnection

Regulatory authority has the responsibility to regulate competition effectively in order to allow market development and save new market entrants from collapse. Interconnection is a very fundamental regulatory aspect for any successful competition in telecommunications market and at the same time a very contentious issue as it impacts the core operations of competing telecommunications networks. It is therefore important that regulators define a robust interconnection regulatory framework that is objectively clear with interconnection charges between networks that are based on economically sound and substantiated costs. The framework should include interconnection guidelines and regulations, pricing analysis and costing models to be applied by all operators.

There has been growing concerns by investor over interconnection regimes due to many problems experienced between mobile operators and fixed line service providers. This has culminated into regulators experiencing difficulties in establishing appropriate guidelines for interconnecting mobile-fixed and mobile to mobile calls. These difficulties have led to financial suffering by many investors who are now diligently looking for interconnection regimes that are economically sound and supported by proper regulations.

There are however new interconnection challenges faced by regulators due to convergence technologies. These include issues like transitioning individual or group based licenses operating under specific interconnection regimes to a unified licensing regime. The other challenge relates to how address the complex environments resulting from multiple operators utilizing a variety of technologies.

f. Consumer Protection

Regulatory authority should ensure that interests of consumers are sufficiently protected by ensuring that licensed telecom operators provide quality services, protect consumers from frauds and exploitation by unscrupulous operators and also their privacy is properly safeguarded. In terms of provision of quality services, the regulatory authority should establish quality standards and regulation that are required to be met by all licensed operators and have a way of monitoring compliance to quality of service. This can be done by requiring operators to submit periodic reports on quality service performance in accordance with the laid down standards and subjecting them to spontaneous audits and investigations by independent auditors. Some of the areas that could be candidates of regular quality assessments include bandwidth and signal quality transmission, connection failure rates and congestion measurements, service outages and response time by the repair team and any other indicator standards deemed fit by the regulatory authority. The authority should always publicize the performance of operators and establish criteria for rewarding those operators who have met or exceeded their quality of service performance but at the same time establish modes of compensation and recourse in situations where quality standards have not been achieved. The authority should also put in place a framework through which customer complaints and enquiries can be appropriately and expeditiously addressed by the operators. In ensuring that consumers are protected from privacy violations and frauds, regulatory authority should establish policies and regulations that prevent operators from engaging in unfair and deceptive marketing practices and unauthorized use of consumer private data and introduce heavy penalties for such violations and establish modalities for formal complaints by consumers who have been aggrieved by such behaviors.

g. Granting of License

Granting of license signifies that the operator is given the permission to conduct its business in a free environment devoid of interference from government authorities provided it complies with the terms and conditions under which the license has been issued. Licenses should also stipulate the rights and obligations of the operator and provide all stakeholders including consumers, competition and government with a clear understanding of the roles and responsibility of the operator.

Granting of licenses should be through a competitive and rigorous process and involves one or more operators from a group of applicants and the selection should go to the applicant who complies with the basic terms and conditions of authorization taking into consideration existing policies, laws and the market structure in a given jurisdiction.

Regulatory Frameworks

As effective competition was developing in the telecommunications sector, regulators adopted two frameworks to regulate the market. The *ex-ante* regulatory approach was suitable in the initial stages of transition from monopolistic government set up towards effective competition. The *ex-ante* is a forecast based approach used when competition was not effective in the market due to underdeveloped state of infrastructure and absence of or inadequacy of competition law to sufficiently address the

identified market failures. It included implementation of sector specific forward looking measures such as pricing rules and placing obligations and restrictions on certain conducts in order to curb anticompetitive behaviors by the providers. In other words, *ex-ante* rules should be carefully adapted to address particular occurrences of anticipated market failures and reviewed on a regular basis and withdrawn once effective competition in the telecoms market is established. In essence *ex-ante* regulation should be considered a temporary measure meant to facilitate a competitive market.

The other regulatory approach is the *ex-post* which is competition based framework geared towards fostering more innovative markets. The *ex-post* regulation framework provides remedy to anticompetitive conducts. It should have mechanism in place to identify, review and enforce ostensible anticompetitive conducts. Currently, many countries have enacted or adopted competition laws of which 25 percent are developing countries. Even though *ex-post* provides certainty in terms of legal framework and outcomes it does not however increase certainty in the market, as it can create uncertainties for new market entrants. As competition matures, countries should transition from *ex-ante* to *ex-post* regulation framework. In doing so, it is crucial to consider some transition provision to enable stakeholders to adapt to the newly introduced *ex-post* environment.

Dynamic Regulatory Process

For any regulatory authority to be dynamic in its operations, its objectives and functions should be distinctly defined in the legislation with clear set of rules and powers as well as obligations and criteria for their applications. The regulatory authority should not be allowed to make universal and arbitrary decision without involving the stakeholders and therefore there should be clearly laid down procedures for appeals against regulatory decisions and all stakeholders must be conversant of such procedures so as to cultivate a sense of participation in the decision making process. The regulator should also be independent from political influence so as to be able to rigorously and professionally execute its mandate.

The regulatory authority leadership should adopt professional attitude and courage and do what must be done even when stakes are high and political pressures mount up. There is greater sense of independence if the leadership position is protected by legislation or statute and the term of office is for specified period of time or for life no matter what decisions are taken. It is also important to have an appeal body that can be called upon to review the decisions of the regulator and can be trusted enough by the stakeholders to use it when necessary. The appeal body should have sufficient expertise to assess the cases before it and possess sufficient wisdom to know when to intervene and when not.

The regulatory body should employ good principles in its decision making process which include transparency, objectivity, professionalism and independence. Each country may have their own laws and jurisprudence that provide guidance to their national regulatory authority on the decision making process and these procedures vary depending on the legal system in use in a particular country. In common law countries, two fundamental rules of procedural fairness have been universally adopted and even

though they are not legally binding on the regulators, they have been widely respected and their keen adherence can provide solutions to many political and legal challenges.

The first rule employs the Latin legal maxim *audi alteram partem* or “hear the other side”. Simply put, this rule requires that all interested parties should be given opportunity to be heard or to present a case before the regulatory authority makes a decision that affects them. Failure to follow this procedural rule may always lead the courts to quash regulatory decisions since they are likely to ignore important factors in their decision making by failure to take into account perspectives of all interested parties. Adherence to this rule promotes transparent decision making.

The other Latin legal maxim employed is *nemo iudex in sua causa debet esse* or “don’t be a judge in your own cause”. This rule requires regulators not to be biased or perception of bias. It means that regulators should avoid making decisions on matters in which they have a personal interest or make decisions on matters where a reasonable and prudent person who is knowledgeable about the all facts, would likely interpret some likelihood of bias. In other words it means that “justice must not only be done. It must be seen to be done” Factors that are likely to lead to the perception of regulatory authority’s bias could be for instance, a relative’s financial interest in a certain matter or a former regulatory authority employee who is a beneficiary to the regulatory decision.

Principles for Effective Regulation

The first principle for effective regulation is to do with regulatory intervention in a competitive market environment. Statistics around the world show that competitive markets are self-regulated and they can better meet the demands of consumers more efficiently than the government controlled markets. Burdensome regulatory measures can outweigh the advantages brought about by privatization and liberalization. In a competitive market environment, regulation should focus on market development especially the level of competition so that as competition increases, regulation decreases.

The second principle concerns harmonization of regional and global standards. This is because basic economics of telecommunications service markets is similar almost in every country and therefore basic network architecture is employed. Harmonization will eventually help in the development of global regulatory standards and best practices. Examples of such standards could include for instance price cap regulation and targeted universal service funds. These regulatory standards or best practices can then be adopted in trade agreements or other international accords.

The third principle is to regulate by principle. In some cases regulatory authority sometimes lack the necessary resources and professional expertise to make ruling over complex issues while at times they may want to avoid regulatory intervention since they are not sure of the right approach to take on disputed regulatory issues. These kinds of “after the fact” approaches and delays in deciding major regulatory decisions may slow down the development of the sector. For instance, in issues involving interconnection, the regulatory authority should provide clear guidance on interconnection principles to prevent parties from engaging in long negotiation resulting in delays.

Regulation in Competitive Environment

The role of regulation authority becomes more limited in a mature competitive environment since at that time the market becomes self-regulated. However, given the dynamic nature of telecoms sector, there are issues that new technologies will inject into the market hence regulatory authorities still have critical role to play especially in areas where market forces resulting from competition still cannot create conditions that satisfy the objectives of public interest such as universal access and services.

Universal access and service policies are always geared towards promoting economic growth and efficiency, promoting socio-political cohesion and integration of the marginalized into mainstream society and narrowing socio-economic gap between those who are accessible to information and those who have little or no access at all. The government needs to craft initiatives aimed at providing telecommunications access and services to marginalized areas where investors neglect on commercial grounds. It is the role of regulatory authority to identify those areas that should benefit from government incentives and subsidies so as to avoid locking the door to private investors in places where market forces have failed to offer incentives to provide services.

As much as telecommunications sector increasingly relies on market forces, the role of spectrum management and allocation should be left to regulatory authority and should not be left solely to market forces. This is because introduction of new technologies into the market may be limited by lack of access or inefficient use of the spectrum as well as interference. Regulatory authorities must also pay keen attention to regulatory concerns that stem out as a result of implementing these new technologies and their related services such as spam and consumer privacy related issues. As service providers implement new technologies and entice consumers with greater choices such as lower prices, regulatory authority should create awareness and advice consumers of the probable limitations that may exist with these lower-price offerings. As these new lower-priced services gain momentum with consumers, the regulator may consider imposing some obligations on other providers.

Benefits of Regulation

The end goal of regulation is to foster effective and robust competition, consumer protection and widespread access to networks and services. In addition to the aforementioned end goals, effective regulation offers many benefits which include greater growth in economy, increased investments, Reduced prices for consumers, better quality of services, higher mobile penetration and rapid technological innovations.

a. Increased Investment

According to the European Competitive Telecommunications Association (ECTA), there is a direct link between stable regulation and the amount of investment injected into a country since good regulation will encourage robust and effective competition. The World Trade Organization greatly encouraged telecommunications sector liberalization in the 1990s and countries that were committed to WTO saw many investors willing to invest capital and technology since the investors were sure of huge revenue rewards and recouping from their investments. Morocco is a good example of a developing economy

African country that recognized the importance of an effective regulation and attracted huge investments in the telecommunications sector. It started laying the groundwork for privatization and liberalization in the 1990s by passing the Post Office and Telecommunication Act in August 1997 and created the National Agency of Telecommunications Regulation in February 1998. With a clear and transparent vision framework for a liberalized market, they were able to stir investor confidence which resulted in the country's second mobile telephony license in 1999.

The winner of the auction, Madi Telecom which was a joint venture between Telefonica from Spain and Portugal Telecom along with local investors got a 15 year license and paid USD 1.1 billion, being one of the largest investment ever in Morocco and one of the highest prices ever paid for a mobile license. The result was that the mobile subscriber base grew from 375,000 in 1999 to over 9 million in 2004 and escalated to over 25 million mobile subscriber base in 2009. Morocco's successful story exhibits clearly how effective telecommunications sector regulation can result in huge increases in ICT development and growth.

b. Reduced Prices for Consumers

Market competition will always force operators to use new technologies so as to lower operating costs and pass on cost-savings to consumers through lower tariffs for instance replacing the old circuit-switched telephony technology with the newer voice over IP (VOIP) technology. With complete liberalized market, consumers have the freedom to switch from one provider or technology to another and take the advantage of lower prices. Statistics show that there is a correlation between tariffs for international telephone calls with the level of competition. It is the responsibility of the regulatory authority to always intervene and find solution to some of the shortcomings in competition that could include imposition of some form of regulation, like setting rates for interconnection between operators, forcing the incumbent operator competitive rates or scrapping restrictions on resale in order to allow new market entrants and encourage competition.

c. Economic Growth

Developing economies in Asia such as India have achieved considerable economic growth by making significant steps towards pro-competitive regulation and has henceforth bridged the digital divide. The Indian Telecom Regulatory Authority made a comprehensive regulatory framework reform that promoted technological neutrality and took advantage of inter-modal competition. It also enhanced competition in 2001 and 2002 through issuance of additional mobile licenses and wireless local loop licenses in 2002. The authority also took additional step to move from receiving-party-pays (RPP) to a calling-party-pays (CPP) structure with an intention to spur mobile telephone growth. These policy implementations by the Indian regulatory authority have brought economic growth to the Indian telecommunications sector which resulted in a substantial increase in mobile subscriber base and decrease in tariffs. This is in contrast with Sri Lanka which has experienced dwarf investment and slow customer subscriber base in the mobile market. This is as a result of delays to adopt pro-competitive measures such as interconnection regime between mobile and fixed services like its counterpart India.

d. Technological Innovations

Innovation refers to the introduction of new products and services to market or the application of better solutions that meet new requirements. Two types of innovations are evident in telecommunications sector. First is the innovation for new products and services and second is the innovation for alternative network infrastructure. Promoting growth of new products and services in the market, the regulation framework must be flexible and able to quickly adapt to the rapidly evolving technology. The framework should embrace and implement policies such as unified licensing or general authorization regime that can be able to stimulate growth of new and innovative services by permitting licensed providers to a broad range of services under a single authorization. It is important for the regulatory authority to provide guidelines on how regulation should be applied to new services resulting from new innovations such as the ones involving converged technologies. For instance voice over IP or internet telephony has been over the past decade been very successful converged technology in the market. However, many countries either have banned its usage and the ones who have allowed this technology have no clear policies regarding its usage. However, such innovations have spurred fair market competition.

Regulation Case Study

It is one thing for countries to make a policy decision to create an independent regulatory agency, and quite another to empower the agency to act independently and effectively.

a. Morocco: A Case of Effective Regulation

Morocco is a good case study when looking at effective regulation in the telecommunications sector. Morocco, under His Late Majesty King Hassan II focused its efforts in the first stages of reform process and achieved a lot of success by implementing policies and procedures that have achieved convincing results. It began its reform debate way back in 1984 which finally culminated in the adoption of a new telecommunications law 1996. These efforts resulted in the second GSM license being sold for USD 1.1 billion, partial privatization of the traditional operator for USD 2.3 billion and rapid increase of mobile subscribers from 116,000 in 1998 to about 3 million at the beginning of 2001. The first step after the introduction of telecommunications law was the formation of the National Telecommunication Regulatory Agency [*Agence nationale de réglementation des télécommunications*] (ANRT) with broad powers but under close oversight by the State especially in financial matters. This financial oversight by the State was however pulled back by an amendment to the act that gave the Agency greater financial responsibility and freedom in pursuing reforms. This is because the Agency demonstrated high competence and credibility in the management of its own affairs in comparison to other public institutions in Morocco. As a result of its ability to effectively and legitimately discharge its technical and regulatory functions, the Agency transitioned to the second stage of regulating and overseeing competition when the basic services were opened to competition in 2002.

The national telecommunications reform process was a commitment undertaken by Morocco in 1997 in agreement with the World Trade Organization when it submitted a fixed timetable on reforms that the country was bound to institute in regards to telecommunications sector. Morocco

also signed a commitment accepting the Reference Paper on regulatory principles which principally referenced to formation of an independent regulatory body, interconnection between operators, the licensing regimes and anti-competitive behaviors. The success of Morocco is pegged to its fulfillment on commitments it undertook to deliver. Some of these commitments included opening up of certain parts of telecommunications sectors such as mobile telephone and VSAT to competition, full liberalization of value added services by opening up the market to internet service providers (ISPs) as well as the opening up of Maroc Télécom's ownership structure in December 2000 so as to permit foreign firms to take equity stakes.

The effects of telecommunications reforms in Morocco brought far reaching impact on economic and social development including full digitization of Morocco's transmission network, upsurge growth in the number of fixed and mobile subscribers to about 134% in the period between the years 1998 to 2000, competitive pricing between the two dominant mobile telephony operators, a vast range of value added mobile services, a wide selection of internet access providers and satellite services, major investments in telecommunications infrastructure and new technologies as well as huge growth in the country's GDP. The Law 24-96 also introduced different legal regimes with respect to participation in telecommunications sector subjecting existing operators to different rights and obligations depending on the legal regime to which they are subject. For instance, the licensing regime applies to public networks that make use of the public domain or utilize the radio spectrum. Licenses in this respect are granted by government decree. Those operating independent networks receive their authorization to operate from the Agency. The certification regime applies to radio installations, terminal equipment and testing and measurement laboratories. Certification is issued by the Agency while internal networks and low power radio are installations that may be established without restriction. The law also requires that any foreign company wishing to provide telecommunication services or infrastructure must establish a subsidiary incorporated in Morocco for this purpose.

The Law 24-96 gives the National Telecommunication Regulatory Agency [*Agence nationale de réglementation des télécommunications*] (ANRT) wide range of responsibilities and powers in the regulation of the sector. The Agency is an autonomous public entity with its own legal status and financial independence. It reports directly to the Prime Minister and is also subjected financial oversight of the State for accountability purposes. Its main organs consist of the Board of Directors, Management Committee and the Director General. The Board of Directors is responsible for decision making as regards the functioning of and the role of Management Committee as well as to the powers delegated to director general. The Board of Directors is appointed by the Prime Minister and consists of representatives of the State, people from public as well as private sectors who are appointed in their own right by the Prime Ministerial decree for a five year term of office. Representatives of the State comprise mainly of ministers who may in case of absence be represented by secretary general of each department or an official having the ranking of a director. The Director General has the overall responsibility of running organization and attends all meetings of the Board of Directors and the Management

Committee on a consultative basis and also serves as their rapporteur, implements the decisions of the Board. Powers may also be delegated to him by Board of Directors from time to time to deal with certain matters involving technical issues where swift and technically appropriate response is required.

The Management Committee assists the Board of Directors and is charged with settling any disputes between operators that may be filed with ANRT, particularly in regard to interconnection. The members are appointed by the Board of Directors for a five-year term and may serve more than one term. The Management Committee is chaired by the Prime Minister. Lastly the Administration of ANRT consists of the Director General and seven directorates. Each directorate is responsible for a particular area in connection with the regulatory process, technical standards, and economic affairs or training.

a. Sri Lanka: Regulation and Investment

The case study of Sri Lanka is about telecommunications regulations and its effects on investments. Sri Lanka started the journey in telecommunications reforms in 1980 with the government segregating posts and telecom service provision. This saw the entry into the market by the first private operator in 1989 by licensing of Celltel, a mobile operator. In 1991, a new law was passed that created a regulatory agency and converted the Department of Telecommunications into a corporation, Sri Lanka Telecom (SLT). Since then, numerous operators have been licensed including three fixed operators, four mobile operators, over 5 facilities based data operators, over 20 non-facilities based data operators and over 30 external gateway operators. The amendment of 1991 Law in 1996 gave autonomy to the regulatory authority and saw two fixed operators being licensed through a transparent thereby entering into competition with SLT, albeit limited to wireless in the local loop. In 1997, the dominant operator, Sri Lanka Telecom Limited (SLTL), was partially privatized by the sale of 35 per cent of equity to NTT of Japan, which was also contracted to manage the company for five years. The legislative reforms have since 1991 brought huge investments with over USD 1300 being invested in the telecom sector. The reforms also saw fixed teledensity increasing from below 1 to almost 5, mobile teledensity from below 0.1 to over 5. The telecom sector is today one of the highest growth sectors in the Sri Lanka's economy.

When investing in the sector, investors consider risks associated with three environments; typically macro-level or country, regulatory as well as commercial. The macro-level or country risk factors that may affect the entire economy, such as inflation and foreign exchange risk, as well as overall political stability. Regulatory risks are those emanating from government action, including but not limited to the actions of the actual sector-specific regulatory agency with authority over the industry in question while commercial risks comprise of factors such as demand, effect of substitutable products and services, and performance of competitors. Since Sri Lanka was not affected by major macro-level changes during the period under consideration, it is assumed that they were not determinative of the pattern of telecom investment.

References

1. Bakker H. Key principles of market regulation in

- telecommunications, 2016.
2. ITU Regional Workshop on “Competition in Telecommunications Market” <https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Documents/events/2016/CT/Final%20Documents/Session%206/Key%20principles.pdf> Accessed 22 Jan 2018
 3. Balasooriya A, Alam Q, Coghill K. State vs. market in search of good governance: The case of Sri Lanka telecommunications industry reforms, 2010.
 4. Thunderbird International Business Review <http://onlinelibrary.wiley.com/doi/10.1002/tie.20362/full> Accessed 22 Jan 2018
 5. Bauer JM. Regulation and Innovation in Telecommunications. Quello Center for Telecommunication Management and Law, Michigan State University <https://pdfs.semanticscholar.org/8d1e/d6d2c8d8a6199e04fadf804db7d7c9803ba8.pdf> Accessed 22 Jan 2018
 6. Blackman C, Srivastava L. Telecommunications Regulations Handbook. InfoDev/World Bank, 2001. http://www.infodev.org/infodev-files/resource/InfodevDocuments_1057.pdf Accessed 19 Jan 2018
 7. Buigues PA. Competition Policy Versus Sector Specific Regulation in Network Industries - The EU Experience. UNCTAD, 2006. http://unctad.org/sections/wcmu/docs/c2clp_ige7p14_en.pdf Accessed 19 Jan 2018.
 8. European Economics. Ex-ante regulation in the Italian Telecommunications Market: Principles and Practice, 2001. http://www.europe-economics.com/publications/telecommunications_market_2000.pdf Accessed 19 Jan 2018
 9. ICT Regulation Toolkit. *Why Regulate*. ITU, 2018. <http://ictregulationtoolkit.org/toolkit/6.2> Accessed 19 Jan 2018
 10. Intven H, McCarthy T. Telecommunications Regulation Handbook: Licensing Telecommunications Services. InfoDev, 2000. https://www.itu.int/ITU-D/treg/Documentation/Infodev_handbook/2_Licensing.pdf Accessed 08 March 2018
 11. ITU. Effective regulation - Case study: Morocco, 2001. https://www.itu.int/ITU-D/treg/Case_Studies/effective-regulation/Maroc.pdf. Accessed 22 Jan 2018
 12. Prasad R. The Impact of Policy and Regulatory Decisions on Telecom Growth in India - Working Paper No. 361. Stanford University, 2008. <https://globalpoverty.stanford.edu/sites/default/files/publications/361wp.pdf> Accessed 22 Jan 2018
 13. Samarajiva R, Dokeniya A, Fernando S, Manikkalingam S, Sanderatne A. Regulation and Investment: Sri Lanka Case Study, including a Pilot Assessment of the Telecom Regulatory Environment, 2004. InfoDev http://www.ictregulationtoolkit.org/document?document_id=3304 Accessed 12 March 2018