Telecom Regulatory and Policy Environment in Afghanistan

Results and Analysis of the 2009 TRE Study

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List of Acronyms

ATRA	Afghanistan Telecom Regulatory Authority
ARPU	Average Revenue per User
BULRIC	Bottom-Up Long-Run Incremental Cost
CAGR	Compounded Average Growth Rate
CDMA	Code Division Multiple Access
CPP	Calling Party Pays
DCN	District Communications Network
GATS	General Agreement on Trade and Tariffs
GCN	Government Communication Network
GDP	Gross Domestic Product
GSM	Global System of Mobile
ICT	Information and Communication Technology
ISP	Internet Service Provider
ITU	International Telecommunication Union
Mbps	Mega bits per second
MCIT	Ministry of Communications and Information Technology
RIO	Reference Interconnection Offer
SIM	Subscriber Identity Module
SMP	Significant Market Power
STM-1	Synchronous Transport Module level-1
TRB	Telecommunications Regulatory Board
TDF	Telecom Development Fund
UAD	Universal Access Department
UAP	Universal Access Policy
USO	Universal Service Obligation

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1.0 Introduction

Located in the center of Asia, the Islamic Republic of Afghanistan is a landlocked country surrounded by China, Iran, Pakistan, Tajikistan, Turkmenistan and Uzbekistan. Following the US led campaign (from 2001) to destroy the Al-Qaeda network in the country as well as to topple the Taliban led government, Afghanistan has shown incredible growth in its telecommunications sector. With a population of 29,021,099[1] people, Afghanistan is classified as a low income country with a per-capita GDP of USD 366 as of 2008 (World Bank 2008). Its telecommunications sector has brought communication access to large numbers of the population in a relatively short period of seven years. Total access paths per 100 people in Afghanistan have gone from a mere 0.17 percent at the end of 2002 to almost 27 percent by the end of 2008.

Despite this phenomenal growth, data on Afghanistan's telecommunications development is not easily available. Part of the purpose of this study is to establish a baseline dataset for subsequent analyses in the future. Primarily this study attempts to conduct an analysis of the effectiveness of regulation in this nascent sector and thereby contribute to the limited knowledge base on telecommunications sector regulation in Afghanistan.

1.1 Methodology

In order to assess the regulatory and policy efficacy of telecommunications sector in Afghanistan, this study used the Telecommunications Regulatory Environment (TRE) instrument developed by LIRNE*asia*. The instrument utilizes a short survey to get the perception of informed stakeholders on the telecom regulatory environment in Afghanistan. The TRE can be used as a diagnostic tool to evaluate the efficacy of the laws and regulations affecting the telecommunications sector of a country. The detailed methodology is documented in Samarajiva et al (2007) with subsequent updates to the methodology documented in Galpaya & Samarajiva (2008). While the TRE has been used in 2004, 2006 and 2008 for select countries in developing Asia, this study was the first application of the TRE to Afghanistan.

The TRE survey asks informed stakeholders to rate the efficacy of the regulatory environment with respect to seven dimensions affecting a particular sub-sector (i.e. Fixed, Mobile or Broadband). Due to the limitations outlined in Section 1.1.1, only the mobile sector of Afghanistan has been considered for this study. The seven dimensions evaluated are Market Entry, Access to Scare Resources, Interconnection, Regulation of Anti-Competitive Practices, Universal Service Obligation (USO), Quality of Service and Tariff Regulation. The first five dimensions were derived from the General Agreement on Trade and Services (GATS) protocol. The latter two were added given their importance to the telecommunications sector. The rating is done on a Likert scale from 1 to 5 (with 1 being highly unsatisfactory and 5 being highly satisfactory). The questionnaire is intentionally parsimonious to facilitate responses from senior officials.

Potential respondents come from 3 different categories, and in all, the CxO level officials are targeted:

[1] There is some discrepancy on population figures between those reported by the Asian Development Bank (ADB) and the World Bank. The former reports the Afghanistan population as 25.47 million for 2009 (http://www.adb.org/Documents/Fact_Sheets/AFG.pdf) while the latter reports it as 29,021,099 for 2008 (http://data.worldbank.org/country/afghanistan). It was decided that the latter would be utilized. This discrepancy is noted here primarily because it affects the calculated value of indicators such as access paths per 100 population.

- Category1: those directly involved in the sector such as operators, equipment vendors.
- Category 2: those indirectly impacted by the sector or those studying/observing the sector with broader interest such as consultants and lawyers.
- Category 3: those who represent the broader public interest such as media personnel, other government officials, retired regulators, civil society organizations.

The methodology specifies that for non-micro states like Afghanistan (i.e. those with a population of more than 2 million), the minimum number of respondents per category is 15. This requires a minimum of 45 responses from the Afghanistan TRE survey. However due to limitations outlined in Section 1.1.1 there were only a total of 11 responses counted in the calculation of the final scores (there were a total number of 15 respondents) . Of the eleven responses counted for this survey, seven were from Category 1, three from Category 2 and one from Category 3. The final response rates for Category 1, 2 and 3 were 35%, 75%, 20% respectively.

According to the TRE methodology, each category should equally contribute to the final score and hence the scores from each category were weighted to equalize the number of respondents from each category.

1.1.1 Limitations

There were a number of limitations in conducting this study. Given that this was the first application of the TRE to Afghanistan, the number of potential respondents identified for this study was small. Prior to the commissioning of this study, both LIRNE*asia* as well as the researcher had only a couple of professional contacts (with the exception of the regulator) who were either familiar with, or working in the telecommunications sector in Afghanistan.

In the end nearly all the respondents contacted were via an introduction through regulator. This created problems in the administration of the TRE. Firstly the regulator had official letters of introduction sent to all the operators, which created the perception that this study was commissioned by the regulator. This meant that considerable effort was made in direct as well as phone conversations with respondents to clarify that the study was an impartial assessment by a researcher with no affiliation with the regulator. Despite the clarifications offered by the researcher, there were discrepancies noted during the administration of the survey. Some were unwilling to give ratings while in some cases the scores given by individual respondents were contrary to the comments gleaned from them during face to face interviews.

While the TRE measures the regulatory environment with respect to each of the sub-sectors i.e. fixed, mobile and broadband, only mobile was considered in the end. There were a number of reasons for this. Firstly Afghanistan's telecommunications sector is nearly completely driven by the mobile sector. Secondly the actual respondents were more familiar with the mobile sector and were reluctant to score the fixed and broadband sections of the questionnaire. Some respondents also only gave partial responses to the other two sectors. In the end there was only one viable response that could be utilized for the fixed and broadband sectors.

Only 15 completed TRE surveys were obtained at the end of the survey. Of these four were rejected. Two of these were rejected because their survey responses were deemed unreliable since both gave scores of 5 for each of the seven dimensions but their verbal comments were in stark contrast to the scores (furthermore both these respondents showed concern during the interviews as to how the regulator would react to their scores). One was rejected since it was deemed that the respondent

did not have sufficient knowledge of the sector. The last was rejected for insufficient responses (only one dimension was scored out of the seven).

The low number of responses as well the potential biases created by the introduction to the respondents via the regulator, creates questions that affect the credibility of the final scores. However considerable effort was taken to probe each of the dimensions in detail in interviews either face to face or via the phone and by talking to the respondents multiple times to cross-check and verify facts. Hence the veracity of the underlying research and interviews conducted as a part of this study countered the potential credibility issues with respect to the scores. Where scores do not reflect the findings from the research, it has been noted.

2.0 The telecommunications sector in Afghanistan

Immediately following the US led campaign to oust the Taliban and Al Qaida, the telecommunications sector was targeted as a priority area for development. With a Compounded Average Growth Rate (CAGR) of 131 percent, total access paths per 100 people in Afghanistan have gone from a mere 0.05 percent at the beginning of 2002 to almost 27 percent by the end of 2008. This phenomenal growth has been spurred primarily by the mobile sector, with fixed access paths accounting for a minimal fraction of the overall access paths per 100 people. The telecommunications sector in Afghanistan is the most important non-donor source of revenue for the country, with current estimates suggesting the sector brings in almost USD 100 million as revenue for the government (see Table 1). Investment in the telecommunications sector has also continuously risen since 2002 and as of the end of 2008, total investment in the sector stood at around USD 1.2 billion. The government estimates that the sector has already created 8,000 new jobs in direct employment and a further 30,000 in indirect employment.

Table 1: Revenues to Government from the Telecom Sector

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Revenues (USD in millions)	2.23	12.15	19.37	66.28	Not available	Not available	100.00 (estimate)

Source: Afghanistan Telecom Regulatory Authority (ATRA)

2.1 The telecommunications policy and regulatory environment

The Ministry of Communications and Information Technology (MCIT), the primary body for creating policy with respect to the telecommunications sector, has been in existence since 1955 when it was called the Ministry of Communications (MOC). The continuing wars until 2002 destroyed nearly the entire telecommunications infrastructure in the country. Since 2002, MCIT has been reinvigorated with donor assistance to chart the future strategy and policy for the telecommunications sector in the country. By mid 2003, the government had created a Telecommunications Regulatory Board (TRB) within the Ministry to oversee the regulatory aspects of the sector. After the passage in 2005 of the Telecommunications Services Regulation Act (hereafter referred to as the 'Telecom Act'), the TRB was restructured as separate independent regulatory body under the Ministry. This regulatory authority was the Afghanistan Telecom Regulatory Authority (ATRA) and was established in 2006. In addition to overseeing all regulatory aspects with respect to the sector (license issuance, renewal and modifications; monitoring of regulatory compliance; and protection of consumer interests) ATRA is also the main dispute resolution body for the sector.

Figure 1 gives a timeline of key regulatory and market actions since 2002.

2.1.1 Telecommunications Services Regulation Act of 2005

Overall the Telecom Act aims to provide a competitive environment for sector and covers aspects related to competitive process, classification of Significant Market Power (SMP) status, anti-competitive practices and guidelines for monitoring and stopping abuse of SMP status and anti-competitive behavior. While the Telecom Act is discussed further under each of the dimensions of

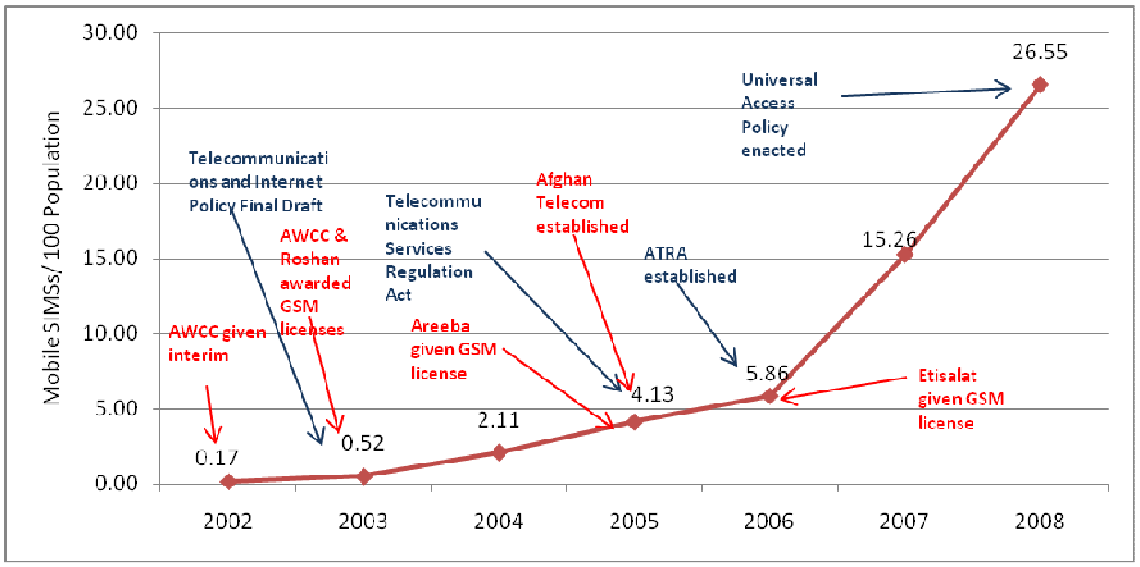
the TRE in Section 3, aspects not covered under the TRE dimension specific discussion is analyzed here.

While Chapter 14 of the Telecom Act deals with consumer protection, protection of consumer interests is not specifically mentioned as one of the purposes of the Act (in 'Article 2: Purpose'). Furthermore, given that the prevailing priorities of the government were geared towards privatization, the Telecom Act does not make a difference between public and private networks.

The Telecom Act articulates in Chapter 2 the establishment, organizational structure and activities of ATRA. Dispute resolution is part of ATRA's mandated activities and is covered under Chapter 3. Chapter 3 further gives the right of appeal on ATRAs decisions which can be taken up by the Commission for Settling Financial Disputes established under the Central Bank Law. However the right of appeal is for private sector organizations and there is nothing specific mentioned about the right of appeal for consumers.

Consumer protection is covered under Chapter 14 of the Telecom Act, under the broad category of "User Protection, Privacy and Directory Information." While Article 50, outlines several considerations that have to be undertaken when establishing terms of service, overall the act gives ATRA large discretionary power in determining them. Overall there are only limited provisions under the act for consumer protection. It is assumed that the terms of services would have be established under a separate procedure, but at the time of this study there was no evidence to suggest that these terms of services existed.

Figure 1: Mobile SIMS/ 100 with key market and regulatory events



Source: Afghanistan Telecom Regulatory Authority (ATRA) and the author

2.2 Operators

There are currently four mobile operators (GSM license holders) in operation in Afghanistan namely Afghanistan Wireless Communication Company (AWCC), Telecommunications Development Company of Afghanistan (TDCA, which operates under the trade name of Roshan), MTN and Etisalat. There is only one fixed wireline operator, the government owned Afghan Telecom. Afghan Telecom also owns CDMA 800 frequencies for the provision of fixed wireless services. However Afghan

Telecom is a very small player compared to the mobile operators. The government also issued four special purpose Local Fixed Service Provider (LFSP) licenses which were intended to encourage rural rollout, but only Wasel Telecom was in operation as of end 2008.

AWCC was first mobile operator in the country. The government gave it an interim authorization to start mobile services in April 2002, prior to establishing a licensing authority and procedures. AWCC is a joint venture company with MCIT holding a 20 percent stake and the majority stake owned by a private sector company called Telephone Systems International, based in the US. Once licensing procedures were established, AWCC was awarded a fifteen year GSM license in July 2003 by paying USD 5 million in regulatory fees and a further USD 1.2 million from revenue sharing during the previous interim authorization period (from April 2002 to July 2003).

The second GSM license was awarded in July 2003, to TDCA (i.e. Roshan) for USD 40.1 million. The Agha Khan Fund for Economic Development (AKFED) holds a majority share in TDCA with a 51 percent stake. Monaco Telecom International (MTI) has a 36.75 percent share and the rest of the shares amounting to a 12.25 percent stake is owned by MCT Corp.

Based on a duopoly agreement with AWCC and Roshan, the government did not issue any further GSM licenses till 2006. Two more GSM licenses were awarded subsequently, following a public bidding process in 2005, both for the fee of USD 40.1 million each. The third license was given to Watan Mobile which was a consortium consisting of Al Houbi Telecom (Saudi Arabia), Cellular One (USA) and Glove Communications (USA). The fourth license was given to Investcom in partnership with Alokozay FZE (United Arab Emirates) and they started operations under the brand name of Areeba in 2006. Areeba was subsequently bought over by MTN South Africa and renamed as MTN in 2008. Watan Mobile however withdrew from the market for unknown reasons, soon after winning their license. Hence the last (and what is now the fourth) GSM license was issued in May 2006 to Etisalat Emirates Telecommunications Company (which operates under the trade name of Etisalat).

Afghan Telecom was created in 2005 by presidential decree following an MCIT recommendation. Upon its creation all telecommunication assets owned by the government were transferred to the newly created entity which was fully owned by the government with the intention that It would be privatized at a later date. While Afghan Telecom holds no official license, it is free to offer any telecommunications service (which one would expect from the holder of a unified license). Afghan Telecom is expected to function as a fully independent entity and subject to the same laws and regulations as the other operators. Initially its mandate was to offer to fixed services to all government offices but it is free to offer services to the public as well. With the inheritance, soon after its creation, of MCIT's Government Communication Network (GCN) and District Communications Network (DCN) it technically has the widest coverage even if overall subscriber numbers are very low. It was also awarded CDMA800 frequencies in 2006 to offer fixed wireless services in 2006. Furthermore the government through Afghan Telecom has invested about USD 40 million in the Optical Fiber Cable (OFC) circular backbone network that is currently being built in Afghanistan. The World Bank has also provided financial assistance to build this backbone network to the amount of USD 65million. The government's intention was (and remains) to eventually privatize Afghan Telecom either partly or in whole at some future date. In fact one privatization round in 2008 was abandoned since it only attracted one bid which was deemed too low.

Wasel Telecom (owned by Dubai' based Modern Technologies International) was awarded an LFSP License (there are no fees for an LFSP license) in 2006 with CDMA 800 frequencies to provide telecom services in rural areas. The LFSP license was intended to take telecom services to the rural areas outside of the main towns and cities in Afghanistan, but so far has had only limited success.

While there were many ISP licenses issued since 2002, as of 2008 only about 19 were in operation.

Table 2: GSM Licenses[2] and Frequency Allocation in Afghanistan

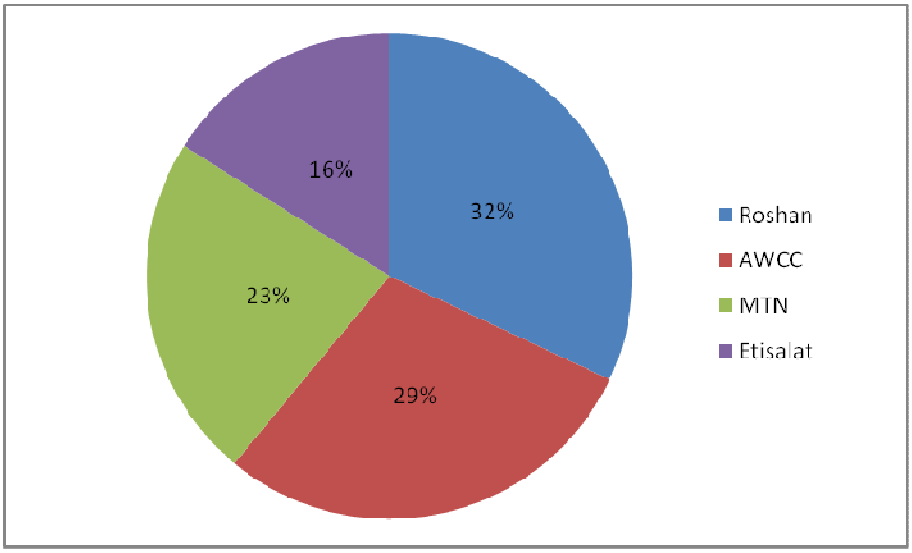
Operator	Date of license issuance	Frequency Band (MHz)		Technology
		Uplink (UL)	Downlink (DL)	
Roshan	09 Jan 2003	898.400-906.200	934.000-951.200	P-GSM 900
		1742.600-1748.400	1837.600-1843.400	GSM 1800
AWCC	10July 2003	829.2-898.0	935.2-943	P-GSM 900
		1730.200-1736.000	1825.200-1831.000	GSM 1800
MTN	12 Oct2005	906.000-910.600	951.600-966.600	P-GSM 900
		1710.200-1719.800	1805.200-1814.800	GSM 1800
Etisalat	30May 2006	911.000-915.000	956.000-959.800	P-GSM 900
		880.2000-884.2000		E-GSM-900
		1720.000-1729.800	1815.200-1824.800	GSM 1800

Source: Afghanistan Telecom Regulatory Authority (ATRA)

2.3 Mobile sector performance

In the mobile sector Roshan and AWCC are the current market leaders with Roshan having a slight lead over AWCC both in terms of revenue as well as subscriber numbers. Under the Telecom Act, any operator having a market share of at least 40 percent of revenue in a specific market is deemed as an SMP. An operator deemed to have an SMP status is then subject to additional regulations under the Telecom Act. However as is seen from Figure 2, the mobile market in Afghanistan currently has no operator who meets the SMP classification. This raises the question of whether the "40%" floor for the determination of an SMP may be too high (Also refer to Section 3.4).

Figure 2: Market share of Mobile Sector by Revenue in 2008

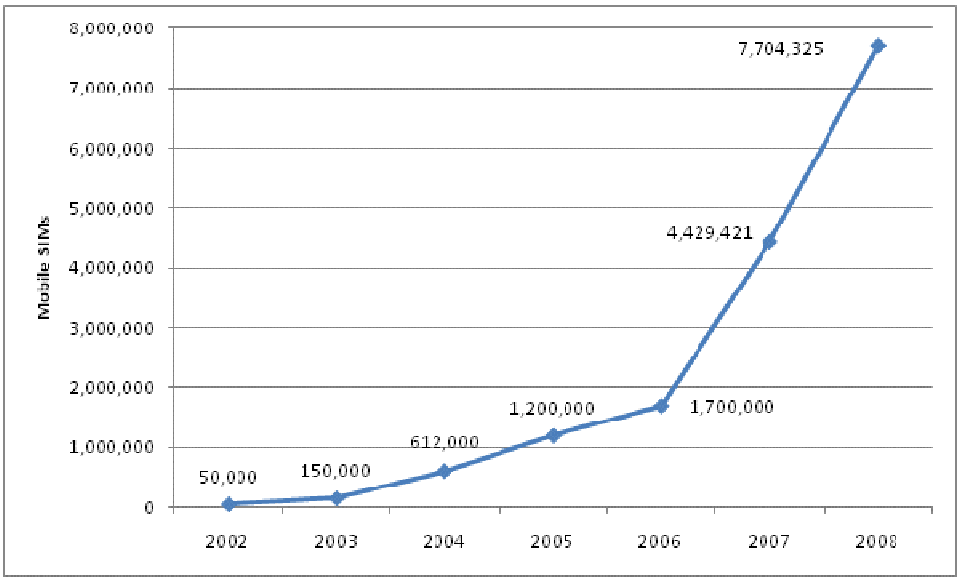


Source: Estimates given by operators

As is evident from Figure 3, the mobile sector has shown incredible growth in subscriber numbers since 2002. As of December 2008, the number of mobile SIMs per 100 population stood at around 26.46 percent.

[2] All licenses were issued for a period of 15 years from the date of the license issuance.

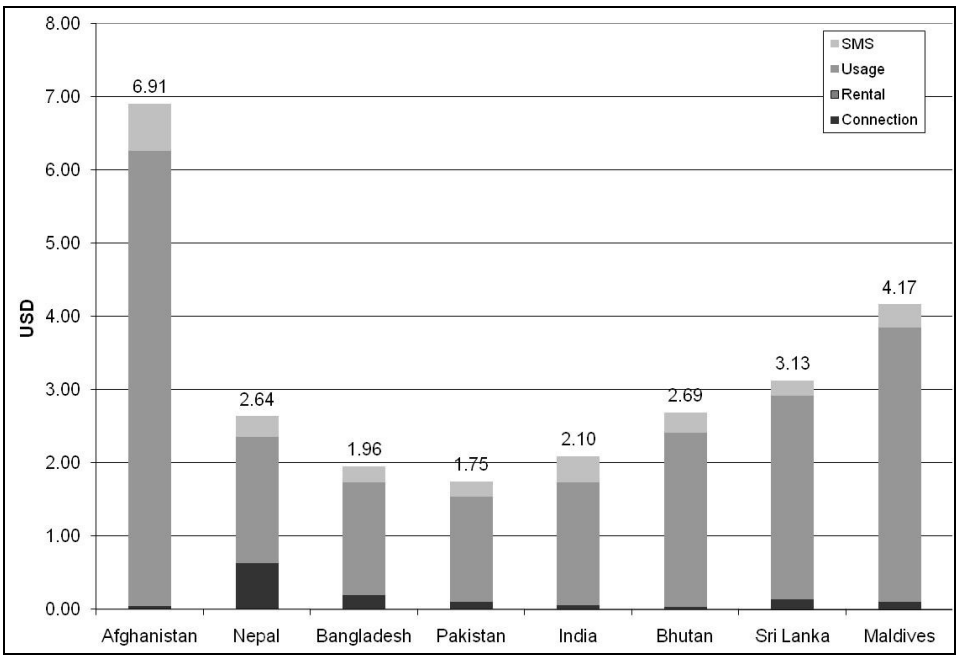
Figure 3: Mobile SIMS



Source: Afghanistan Telecom Regulatory Authority (ATRA)

With the entire mobile market is based on prepaid, mobile operators have an Average Revenue per User (ARPU) per month of USD 12-15 which is high when compared to other South Asian countries. For example prepaid ARPU/ month for Indian mobile operators are about USD 6 (Malik 2008). The only other South Asian country with similarly high ARPUs is Maldives where the prepaid ARPU/ month is USD 12-13 (Galpaya 2008). Despite the high subscriber growth rates (CAGR for the sector as a whole is about 131 percent for the period 2002-2008), mobile tariffs are the highest in the South Asian region (See Figure 4).

Figure 4: South Asia Low User Prepaid Basket (USD) in Feb 2009



Source: LIRNEasia 2009a

Furthermore prices were much higher prior to the entrance of Areeba (now MTN) and Etisalat in 2006. This may explain why Afghanistan also has some of the lowest average Minutes of Use (MOU) per user per month in the region (See Table 3). It should be noted that Afghanistan has a Calling Party Pays (CPP) regime.

Table 3: Average MOU per subscriber per month in Afghanistan for 2008

	Average MOU per user per month
Domestic incoming	33.41
Domestic outgoing	34.68
International Incoming	5.54
International Outgoing	3.04

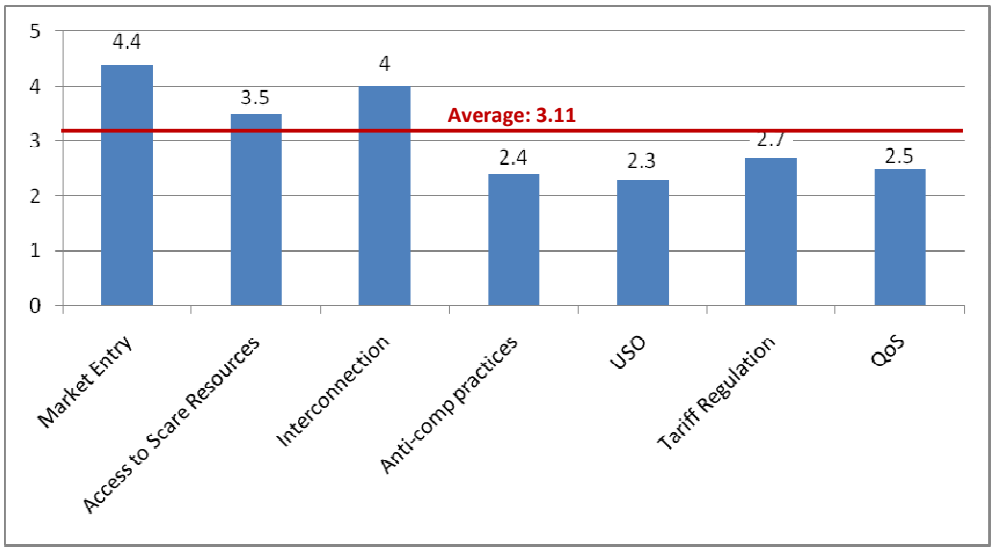
Source: Afghanistan Telecom Regulatory Authority (ATRA)

3.0 Results and analysis of the 2009 TRE study for the mobile sector in Afghanistan

The average TRE score for the mobile sector across all seven dimensions is 3.11. Scores for each of the dimensions showed a high variation (from 2.3 to 4.4). The regulatory environment with respect to market entry, access to scare resources as well as interconnection were viewed quite favorably as opposed to regulation of anti competitive prices, Universal Service Obligation (USO) regulation, tariff and quality of service regulations.

With respect to the remaining dimensions which received lower scores, the research undertaken in this study partly explains the scores. However in the case of tariff regulation, the low scores are contrary to the other evidence which suggests that the score is an anomaly (for a further discussion see Section 3.6)

Figure 5: TRE scores for the mobile sector by regulatory dimension



3.1 Market entry

Market entry receives the highest score amongst all the regulatory dimensions (4.4. Given that the telecommunications infrastructure prior to 2002 was virtually non-existent, the government encouraged market entry with a generous licensing policy, especially in the initial stages after 2002. These principles were then enshrined in the Telecom Act which states that the purpose of the act (under sub-paragraph 2 of "Article 2: Purpose") is "To promote non-discriminatory entry of Service Providers and Operators to the market." In line with their scores for this dimension, survey respondents had mostly positive comments about the general licensing procedures as well as market entry overall. Furthermore, the overall business environment is favorable towards foreign direct investment allowing for 100 percent foreign ownership of telecommunication companies as well as 100 percent profit transfer out of the country.

Till 2005 the mobile market was a duopoly between AWCC and Roshan. With the issuance of licenses to MTN (in 2005) and Etisalat (in 2006), the market has become less concentrated (see Figure 2). The

additional competition from latter two operators has had a downward effect on tariffs. Mobile Number Portability (MNP) is currently not available in Afghanistan and neither is it on the current regulatory agenda. Furthermore HHI for the mobile market (by revenue) in 2008 stood at 2650 suggesting that there might be potential space for additional operators.

With respect to license fees there have been no complaints with three out of the four mobile operators having paid a standardized fee of USD 40.1 million. AWCC, the first entrant only paid USD 5 million.

Respondents indicated that (once they obtained an operating license) they did not face any issues with network rollout and rights of way and they could lay cables and erect towers without delay. However there have been some issues with spectrum allocation (discussed further in section 3.2). The low variance of 0.36 amongst respondents' scores indicates relative consensus on this score.

One area of concern revealed during the interviews was the different licensing conditions between the first two licensees and the latter two licenses. Apparently, the latter two had additional data reporting requirements that wasn't covered under the first two licenses. However ATRA is in the process of standardizing reporting requirements, which have so far geared towards placing more reporting requirements on all operators even if not specifically covered by the license conditions. Operators in general are unhappy with the burden of monthly reporting requirements which have been continuously increasing in scope.

3.2 Access to scare resources

With a score of 3.5, access to scare resources is still viewed favorably though not as much as market entry. While the Telecom Act spells out spectrum allocation mechanisms in a transparent manner, there are some concerns with the actual implementation. The high variance (0.93) in the scores for this dimension is partly explained by legacy aspects. The first two licensees were awarded spectrum nearly two years before the Telecom Act was enacted and the creation of the regulatory authority. Operators who entered the market after 2005 had to contend with narrower bands in the preferred 900 MHz band (see Table 2). The process of allocating additional spectrum to accommodate subscriber growth seems to be also an area of concern, with delays being mentioned as a problem. Frequency interference too has been a problem for operators (though not for all) with delays being cited in the regulatory process in resolving the situation when interference issues arise.

While the TRE scores are meant to reflect the telecom and regulatory environment for the previous year (in this case 2008), one potential issue that was on the horizon may have been reflected in the scores, partly because the issue had been brewing for some time. Afghanistan's OFC backbone network, already partly active, was scheduled for completion by 2010 and was to be made available for use by all operators. However it was meant to be run by Afghan Telecom which was spending USD 40million towards the construction. The government's first attempt at privatizing Afghan Telecom in 2008 had failed since it had attracted only one bid which was rejected for being too low. However the eventual privatization of Afghan Telecom is still on the Government's agenda. Other operators were not pleased that a competitor (i.e. Afghan Telecom, even if it was currently a very small player in the market) would be controlling an essential facility such as the OFC. Furthermore Afghan Telecom could potentially be a direct competitor should it enter the mobile market[3]. The

[3] Afghan Telecom is free to enter any sector based on the principles of its incorporation by the government in 2005

preference in the sector was for the OFC operations to be spun out into a separate company that was not a part of Afghan Telecom. This was particularly important for the other operators since there was a perception which had not been denied by ATRA that all operators would be mandated to use the OFC. Currently all the mobile operators are using microwave links for their backbone network. The draft wholesale access rates that were being circulated (See Table 4) was also another area of concern for mobile operators since rates were deemed quite high.

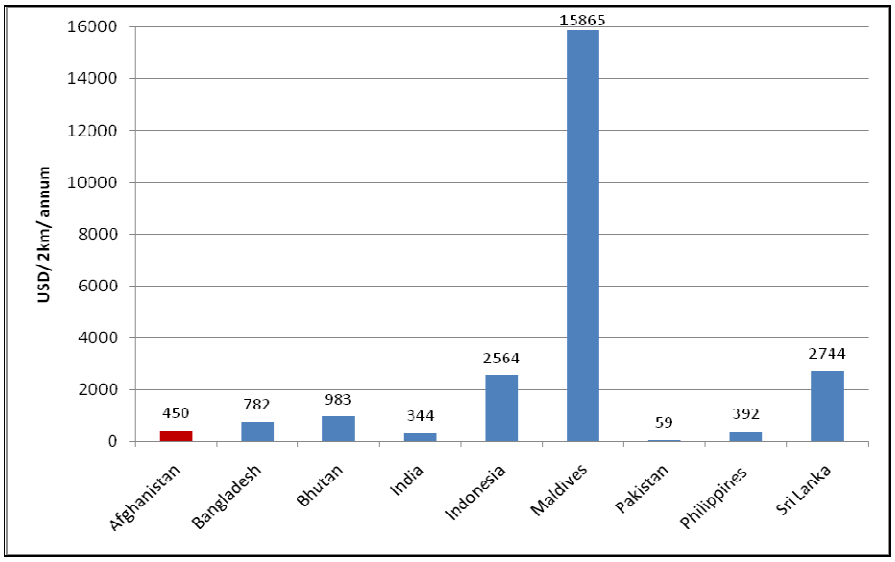
Table 4: Draft prices for OFC backbone access

Distance (km)	2Mbps (i.e. one E1) (USD/km/annum)	45 Mbps (USD/km/annum)	155Mbps (i.e. one STM-1) (USD/km/annum)
0-200	225	3600	8550
200-600	190	3040	7220
> 600	160	2560	6080

Source: Afghanistan Telecom Regulatory Authority (ATRA)

When comparing the draft OFC rates with prevailing costs in the Asian region for an E1 tail circuit (i.e. 2kms), the draft rates were in fact some of the lowest prices in the region (See Figure 6).

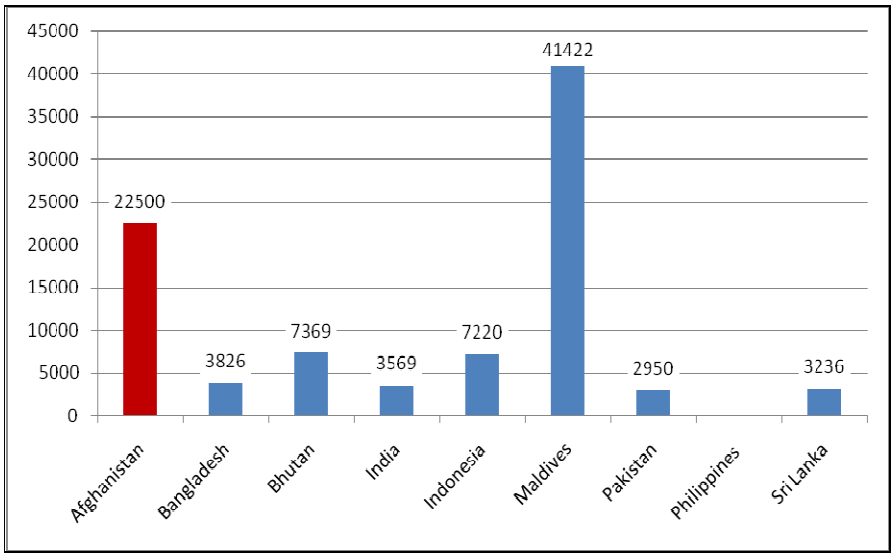
Figure 6: Annual cost, 2Mbps, 2km DPLC (tail cost) in USD



Source: Afghanistan Telecom Regulatory Authority (ATRA) and LIRNEasia 2009b

The low costs for the tail circuits (when compared to the region) conformed to the observation of one official involved in the construction of the OFC link, who claimed that the rates were prepared after an extensive study of pricing methodology and and benchmarks in both India and Pakistan. He further claimed (though this was not confirmed by the mobile operators) that the current costs borne by mobile operator for backhaul traffic via microwave links was in fact higher. However the comments seem applicable only to tail circuits. Afghanistan's costs for 100km E1 DPLC link was the second highest in the region (see Figure 7).

Figure 6: Annual cost, 2Mbps, 100km DPLC in USD



Source: Afghanistan Telecom Regulatory Authority (ATRA) and LIRNEasia 2009b

Generally respondents have not had issues with numbering especially since the sector is still in its nascent stages. ATRA has established a National Numbering Plan with provisions for at least 5 more operators should the need arise in the future.

3.3 Interconnection

With an average score of 4, interconnection is seen quite favorably by respondents. With a variance of 0.22, this perception is generally shared by all. The Telecom Act mandates all operators to provide interconnection where needed in accordance with the act. However Article 25 of the Telecom Act which deals with Interconnection mainly deals with regulation for operators having SMP status, has clauses on providing interconnection at a technically feasible location and a reference interconnection offer, all only applying to the SMP. Currently there is no SMP, yet rules pertaining to SMP are applied to others as well.

The Telecom Act does not prescribe a specific model for the calculation of interconnection fees but the act requires that the interconnection rates be cost based, forwarding looking and non-discriminatory. Here too the specific clauses of the Act are applicable only to the operator with SMP, but in practice are generally applied to all. In practice currently ATRA has set up a standardized interconnection rate for all (it is the same irrespective of whether interconnection is from fixed to mobile, mobile to fixed, or mobile to mobile) which it states was determined by using a Bottom-Up Long-Run Incremental Cost (BULRIC) method. Given that the rates are high, it is questionable whether the rates were in fact determined using a BULRIC method since the rates obtained under the method are generally for the most technically efficient operator.

Table 5: Interconnection costs in Afghanistan

	Rate (USD/ minute)
Until January 2007	0.050
January 2007 to December 2008	0.029
January 2009 onwards	0.026

Source: Afghanistan Telecom Regulatory Authority (ATRA)

Very few disputes have been reported with respect to interconnection. Most likely the results are actually indicative of the ease of establishing interconnection rather than the rates. While rates have been falling they are still high when compared to international benchmarks. Current interconnection rates have been standardized at 2.6cents a minute and are intended for 2009 (refer to Table 5). Both ATRA and the operators mention that the rates are high since there are additional costs involved in network maintenance that are unique to Afghanistan. With security and power for the towers a major issue especially in areas outside of the major cities, operators have to contend with additional costs related to fuel for private generators and security for towers.

Even while the dimension for Quality of Service (QoS) received low scores (See section 3.7), it seems both price as well as quality of service of termination is viewed relatively favorably. There have been few (if any) disputes amongst operators with respect to interconnection. However some LFSP providers have made frequent complaints about interconnection as was evidenced from the records on ATRA's decisions for 2008. Unfortunately due to time constraints, no LFSP providers were included in this survey. Had they been included the results might have been less favorable.

3.4 Regulation of anti-competitive practices

This dimension received the second lowest score (2.4) which suggest that the regulatory environment with respect to this dimension has fared poorly. In particular there was dissatisfaction with the establishment, monitoring and enforcement of anti-competitive practices.

The Telecom Act covers issues related to competitive processes, determination of Significant Market Power (SMP), abuse of SMP, anti-competitive practices and guidelines for dealing with these issues. However vertical price squeeze, predatory pricing, and discriminatory interconnection access and rates are only covered under clauses meant for operators classified as having an SMP status[4]. The only provision for dealing with anti-competitive practices that is applicable to all is "Article 22: Anti-Competitive Practices" which states:

> "No Person shall engage in a practice restricting or distorting competition in telecommunications markets, including the following:
>
> 1. Fixing prices or other terms or conditions of service in telecommunications markets;
>
> 2. Determine which person will win a contract in a telecommunications market;
>
> 3. Apportion, share or allocate telecommunications markets."
>
> *Telecommunications Services Regulation Act, 2005, pg 15*

Such provisions are not by any means comprehensive and there is a lack of sufficient guidelines and regulations applicable to all operators. As noted earlier currently no operator fits the criteria for SMP in the mobile sector. It seems unlikely in the near future that anyone operator will meet the current criteria for SMP. This raises the question of whether the current SMP-based regulatory principles make sense for Afghanistan especially with respect to this dimension.

Enforcement mechanisms are also limited (covered under Article 8, 9 and 10). The actual GSM licenses themselves do have some provisions for mandatory interconnection, fair trade and competition as well as for the arbitration process as well. Collectively however the implementation of these has been found lacking by interviewees.

[4] These are dealt with Article 21, 23 and 24 of "Chapter 7: Competition" of the Telecom Act. But as already noted, no operator currently falls within the definition of SMP, therefore these are not applicable to any operator

.

With respect to dispute resolution, the Telecom Act gives the regulator the power to settle disputes. However the regulator's decisions may be appealed within thirty days by registering an appeal with the Commission for Settling Financial Disputes under the Central Bank (with a copy being sent to ATRA). The GSM licenses too include provisions for third party dispute resolutions. The specifications inside one such license state the following with respect to arbitration[5]:

> "All disputes or differences that may arise out of or in connection with this License, including any question regarding its existence, validity, amendment or termination, are to be referred to arbitration by three arbitrators appointed in accordance with the Rules for Conciliation and Arbitration of the International Chamber of Commerce. The arbitration shall be held in London in the English language and shall be subject to the Rules for Conciliation and Arbitration of the International Chamber of Commerce. The award of the arbitration shall be final and binding upon both Parties"
>
> *Section 1, Paragraph 38: "Arbitration", Sample National GSM License, pg 14.*

There have not been many disputes that have been brought to arbitration. In some instances (as reported by interviewees) there have been cases of predatory pricing by some operators. But no complaints were lodged and neither had the regulatory authority taken up the issue (ATRA technically doesn't require a complaint to be lodged before it takes up the issue). Part of the reason for this may be the fact that the operators in question have comparatively low market share. The hassle of the dispute regulation mechanism in practice has hindered complaints and dispute resolutions except in the most serious of cases. But this problem is also an issue of definitions. In the absence of implementing guidelines that clearly specify what "fair" or "predatory" means, service providers cannot assess whether, say, a price cut would be deemed unfair or anti-competitive rather than competitive. The subjectivity and prevailing unpredictability of issues pertaining to fair trade practices is probably what bothered most respondents.

Furthermore the capacity and transparency of the regulator is of some concern to the service providers. On the latter, the research conducted as part of this study revealed one potential conflict of interest whereby the funds for the regulator's capacity building activities (under a World Bank grant) is managed by an official in Afghan Telecom.

The respondents' scores for this dimension show a very low variance (0.43) which suggests that the unfavorable perception of regulation with respect to this dimension is shared by most.

[5] It was not possible to verify if all the issued licenses had the same text with respect to dispute resolution process, primarily because the actual licenses are not public (even if they are supposed to be).

3.5 Universal Service Obligation (USO)

Survey results indicate that USO regulation receives the lowest score (2.3).

A universal service charge of 2.5 percent of net revenues has been levied on all GSM operators since 2003. LFSP licensees only have to pay 1.5 percent of their revenues. However the actual Universal Access Policy as well the Manual of Operating Procedures for the utilization of the Telecom Development Fund (TDF) didn't come till late 2008. The delay in coming up with a mechanism to disburse the collected funds has been a source of dissatisfaction for quite some time and the results from this survey are probably indicative of this legacy of confusion with respect to the Telecom Development Fund (TDF). The dissatisfaction was more acute in the past because of the pressure on operators to roll out services to the rural areas without access to TDF funding. Even after the establishment of the Universal Access Policy and the operating procedures on how the fund will be used, there is a general lack of clarity with respect to the rules and regulations amongst the respondents. With some estimates indicating the almost USD 26 million is available for disbursement from the fund, the operators have been unhappy with the delay in implementation.

The Universal Access Policy also makes provisions for the creation of a separate Universal Access Department (UAD) within ATRA to administer the disbursement of the funds. At the time of this survey this department had already been created. However respondents mentioned some concern with respect to the capacity of the UAD to effectively administer the Universal Access program. There was also some concern with respect to the transparency of disbursement but these concerns were minor and only shared by few respondents.

The effectiveness (if at all) of the new regulations is not captured in this survey since it was established so close to the time of this survey and disbursement had yet to occur.

3.6 Tariff Regulation

This dimension received a low score of 2.7.

The Telecom Act sets out procedures for regulation of tariffs for only the SMP, with provisions for publishing and filing the latest tariffs with ATRA. Prior approval is required from ATRA before changes to the tariff structures are announced by the SMP (or if new services are to be established). Furthermore the Act stipulates that the SMP cannot subsidize tariffs. Given that the latest market share data indicates that there is no designated SMP, none of the operators' tariffs are technically subject to review.

In actuality, the latest reporting requirements on all licenses require them to submit their entire tariff sheets including roaming and international rates. As Figure 1 shows, Afghanistan's tariffs are some of the highest in the region currently. But the interviewees suggested that the higher rates were reflective of the difficult macro-economic conditions of a post-conflict region. Furthermore high energy and security costs were attributed as some of the reasons for higher costs. Most, including the regulatory authority did not consider the current tariffs to be too high and were generally satisfied with it.

Despite cases of predatory (below cost) pricing occurring, no action has been taken since the operators in question did not have an SMP status. Neither does it seem that any of the other operators have raised this issue up with ATRA. The reason for not raising the issue maybe because the operators in question had smaller market shares but also maybe because operators found the dispute resolution mechanism a hassle. However it is not entirely clear why this issue (observed by

some respondents during the interviews) was not raised. This may partly explain the low score (2.7) received for this dimension (also see Section 3.4 on regulation of anti-competitive practices). However, these issues do not sufficiently elucidate why the scores were so low and hence it is the researcher's contention that the score for this dimension are not entirely accurate and might be an anomaly. This is further reinforced by the fact that this weighted score had a high variance of 1.2.

3.7 Quality of Service (QoS)

QoS regulation received a low score (2.5) and the negative perception is shared by most (with a low variance of 0.45).

The Telecom Act makes frequent references to quality of service. Furthermore the individual GSM licenses do cover required benchmarks for various aspects of service delivery including dropped calls and network availability. In addition the GSM license specifies the applicable fines (starting from 100,000 Afghani upto a maximum of 2.5 million Afghani per quarter) for not meeting performance metrics. However interviews with the survey respondents suggested that transparency and accuracy in monitoring was an issue. Actual monitoring of the basic network quality of service indicators such as call drop rates, congestion ratios, and throughput are only recently being actively monitored by ATRA according to some but this was contrary to what was reported by the regulator who claimed to be monitoring the QoS benchmarks actively since the beginning. The capacity of the regulator to suggest, monitor and implement QoS measures and regulations is questioned by the respondents. The respondents clearly view the regulator as lacking in understanding of what the overall goals and mechanisms should be with respect to quality of service for the sector. One troubling example observed by this researcher, further points to this. One particular operator had recently started a mobile money service. The instinct of the regulator was to shut down the service till ATRA could get further clarifications of this service and assess if this new service would affect call completion ratios[6] . While the regulator eventually refrained from following this course of action, this anecdote further underscores the across-the-board concern with respect to the regulator's capacity.

There is also a question in the minds of the respondents as to whether the regulatory authority fully appreciates the difficult circumstances in which they operate. For example the research revealed that in many remote areas, especially in those of Taliban dominance, phone towers are frequently switched off (especially at night) by either the government or the US led allied forces. This means some areas lose connectivity while in other areas undue burden is placed on towers which aren't switched off leading to poor quality of service. In light of such a situation, respondents feel that the regulator should give operators more leeway in the QoS standards imposed on them.

[6] It would have been highly unlikely that the operator would have been using a voice channel in which case the issue of call completion ratios doesn't arise.

4.0 Conclusion and policy recommendations

The telecommunications sector represents one of Afghanistan's biggest success stories and continues to remain one of the main engines of its growth. It is currently the government's largest sources of non-donor revenue. The phenomenal growth in penetration achieved within six short years is also an indication of the government's pro-market policies especially with respect to telecommunications. Afghanistan has tried to follow a path of utilizing international best practices in telecommunications sector reform and has embraced an open market regime based on private sector participation.

Despite the success in connecting the people, challenges remain. Tariffs are the highest in the South Asian region. The current difficult macro-economic situation as well as the security issues (especially outside of the main cities) is not very conducive for investment. Furthermore transparency remains an issue, with the perception of potential collusion between the regulator, ministry and Afghan Telecom. This is further exacerbated by the need for extensive capacity building activities at the regulatory authority.

While being cognizant of the fact that the overall socio-economic and security issues in Afghanistan will need to be addressed, the study has revealed certain priority areas with respect to the regulation of the telecommunications sector that need to be addressed

4.1 Capacity building of the regulatory body

The major concern raised by the respondents is the capacity of the regulator. Despite great strides in coming up with policies based on international best practices, regulatory capacity with respect to monitoring, dispute resolution and enforcement has so far lagged behind. With the majority of the knowledge base on economic regulation residing amongst the six board members of the ATRA board, other regulatory staff still lacks the basic tools and knowledge in economic regulation principles. Donor agencies and concerns by respondents have played a major role in bringing the urgency of these capacity building initiatives to the forefront. In fact ATRA with assistance from World Bank funds is in the process of initiating a wide-scale capacity building effort throughout the entire organization.

4.2 USO policy implementation

The study revealed that implementation of the Universal Access Policy and the utilization of the TDF fund was an area concern. In fairness, due the short time between the publication of the Universal Access policy as well as the manual for how the TDF fund was to be utilized, the survey respondents may have failed to appreciate these new policies[7]. Irrespective, proper implementation, information dissemination and continued consultation with the private sector operators remain key if Afghanistan is to push the penetration to poorly developed rural areas. The existing LFSP licenses, despite being intended to bring telecommunications to at least an additional 300,000 people has so far not been successful, with preliminary estimates suggesting that the number of new connections in the rural areas where the LFSP licensees operate being in the range of ten to twenty thousand. It

[7] The Universal Access Policy was enacted in October 2008 and the accompanying Manual of Operating Procedures for the Utilization of the TDF was also released in October 2008. However the TRE survey was conducted between January and March 2009.

was not clear as to the reasons for the failure to meet the intended target. This could be partly because the LFSP licenses failed attract potential investors and partly due to the difficulty in establishing operations in remote areas (where both the low population numbers as well as security issues related to the remote locations may have played a role).

4.3 Comprehensive competition policy

The regulation of anti-competitive practices which received the second lowest score requires improvement in both monitoring and enforcement. But before that is addressed, Afghanistan is in need of an overall legislative framework that comprehensively tackles regulation of anti-competitive practices. Sector growth is possible without good governance, but sustained growth and overall sector performance as defined by improved connectivity, more choice, better quality and decreasing prices cannot be achieved without appropriate policy coupled with transparent and effective enforcement.

While the general pro-competition outlook of the governance mechanisms has so far enabled phenomenal sector growth during the current nascent stages of development, they lack teeth to handle specific issues that will become a major problem in the near future. For example existing regulations with respect to anti-competitive practices are mostly for the SMP. However no operator currently meets the existing definition of an SMP and it is unlikely (given the market dynamics of the four existing mobile operators) that any operator will meet that definition in the near future. Hence Afghanistan should potentially revaluate its SMP focused regulation for anti-competitive practices. The lack of trust in the dispute resolution mechanism due to the overall lack of regulatory capacity as well as potential non-transparency issues (vis-a-vie the relationship between the regulator and Afghan Telecom) will need to be addressed. However, even if governance, monitoring and enforcement are improved this still doesn't negate the need for a comprehensive competition policy.

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Annex 1: Regulatory and policy events/ actions in 2008 in Afghanistan

March 2008	MCIT issues request for Expression of Interest in the sale of 80% of Afghan Telecom
April 2008	Telecom Equipment Importer License issued to Salar Shahkib Ltd
May 2008	Telecom Equipment Importer License issued to Afghan ITT
	LFSP License issued to Speenghar Telecom
	Technical & Technology Solution Provider License issued to Asia Consultancy Group (ACG)
	Privatization of Afghan Telecom is started
June 2008	Base Transceiver Station (BTS) Installation Procedure Approved
July 2008	Telecom Equipment Importer License issued to TSC
August 2008	Telecom Equipment Importer License issued to Wahdat International
September 2008	Dispute resolved between Wasal Telecom and Afghan Telecom about international gateway access
	National ISP License issued to ASIX
	National ISP License issued to Afghan ICT
October 2008	Dispute resolved between Wasal Telecom and MTN about interconnection prices
	Dispute resolved between GSM operators with regards to activation of free short code for election registration.
	Universal Access Policy document released to set forth policies for rural telecommunications development in Afghanistan.
	Manual of operational procedures for Telecommunications Development Fund (TDF) is released.
November 2008	National ISP License issued to MTN
December 2008	National ISP License issued to Netzone

Annex 2: References

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