



Report and Recommendation of the President to the Board of Directors

Project Number: 40918
June 2006

Proposed Loan and Political Risk Guarantee Islamic Republic of Afghanistan: Roshan Phase II Expansion Project

In accordance with ADB's public communications policy (PCP, 2005), this abbreviated version of the RRP excludes confidential information and ADB's assessment of project or transaction risk as well as other information referred to in paragraph 126 of the PCP.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 1 June 2006)

Currency Unit	–	afghani (AF)
AF1.00	=	\$0.0202
\$1.00	=	AF49.579

ABBREVIATIONS

ADB	–	Asian Development Bank
AFG	–	Afghanistan
AKFED	–	Aga Khan Fund for Economic Development
ARPU	–	average revenue per user
AT	–	Afghan Telecom
ATRA	–	Afghanistan Telecommunications Regulatory Authority
AWCC	–	Afghan Wireless Communications Company
BTS	–	base transceiver station
CAGR	–	compound average growth rate
CFS	–	complementary financing scheme
DAB	–	Da Afghanistan Bank
EBITDA	–	earnings before interest, taxes, depreciation, and amortization
GDP	–	gross domestic product
GSM	–	global system for mobile communications
IT	–	information technology
ITU	–	International Telecommunication Union
LIBOR	–	London interbank offered rate
MOC	–	Ministry of Communications
NGO	–	nongovernment organization
PCO	–	public call office
PRG	–	political risk guarantee (or similar arrangement)
PROPARCO	–	Société de Promotion et de Participation pour la Coopération Economique
SB	–	Standard Bank Plc
UAE	–	United Arab Emirates

GLOSSARY

Code division multiple access	–	A method of multiple access that encodes data with a special code associated with each channel
Synchronous digital hierarchy	–	A fiber-optic transmission system for high-speed digital traffic
Subscriber identity module	–	Provides secure storing of the key identifying a mobile phone service subscriber, but also subscription information, preferences, and storage of text messages
Very small aperture satellite terminal	–	A small earth station for satellite transmission that handles up to 56 Kbits/sec of digital transmission

NOTE

In this report, "\$" refers to US dollars.

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I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan, complementary financing scheme (CFS) and political risk cover (PRG) to Roshan for the phase-II expansion of its cellular telephony network (the Project).

II. INTRODUCTION

"People lack many things: jobs, shelter, food, health care, and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these other deprivations, and may indeed reduce the chances of finding remedies to them." - UN Secretary General Kofi Annan¹

2. Roshan is the largest provider of mobile telecommunications services in Afghanistan. In November 2004, ADB approved a loan of \$35 million to finance the expansion of Roshan's mobile cellular telephony network and the restructuring of its capital base. Since inception of its services, Roshan has significantly exceeded its subscriber and traffic growth targets. To meet the tremendous demand, ensure quality service, and reap the competitive benefits from this growth, Roshan's capital expenditure program has had to be accelerated.² Therefore, ADB's loan was rapidly fully drawn.

3. To finance the next (second) phase of the accelerated rollout plan, Roshan requested additional debt funding from ADB and other current and prospective senior lenders in December 2005. The concept of this Project was cleared on 23 February 2006, and due diligence was carried out in Kabul, Afghanistan, from 5 to 8 March, 2006. Additional meetings were held in Paris and London to coordinate the financing approach.

4. The Project involves the phase-II expansion of Roshan's cellular network to provide for accelerated near-countrywide coverage, additional network redundancy, and a network upgrade.

5. In early 2004, ADB approved a similar loan to GrameenPhone in Bangladesh to finance its phase-II expansion.³ The identified development impact included (i) continued expansion of the telecommunications sector, which still had large unmet demand and unserved regions; (ii) expanded role of small and medium-sized service providers, which are subcontractors of GrameenPhone; (iii) expansion of village pay telephones (VPTs) to unserved rural areas; and (iv) support for GrameenPhone's unique contributions for good governance in the Bangladesh telecommunications sector. The phase-II expansion financing for Roshan has a similar profile (a second loan following a rapid and successful phase-I rollout by a successful market leader in a nascent telecommunications market with significant demand–supply gap) and rationale, and arguably even more compelling development characteristics.

¹ The US National Commission on Libraries and Information Science speech at Telecom 99 in Geneva, Switzerland.

² If the acceleration of the phase-II expansion were not to take place, the higher-than-expected traffic and number of subscribers would lead to capacity and quality concerns. Roshan would have to halt its expansion programs to focus on capacity and quality upgrades. This would be to the detriment of all stakeholders and beneficiaries.

³ ADB. 2003. *Proposed Loan to GrameenPhone Limited in the People's Republic of Bangladesh for the GrameenPhone Telecommunications Expansion Project*. Manila.

III. BACKGROUND AND RATIONALE, SECTOR PERFORMANCE, PROBLEMS, AND OPPORTUNITIES

A. Telecommunications Sector in Afghanistan

6. Afghanistan continues to suffer from a critical lack of communications infrastructure. Travel is impeded by poor (albeit slowly improving) road conditions, long distances, and low vehicle ownership rates. The postal system is still slow and basic. In a recent investment climate survey,⁴ 26% of the surveyed firms still mentioned telecommunications as a major or severe problem. The fixed-line telephone system remains rudimentary and thus communication by fixed-line fax is also largely unavailable. Almost everybody, including the foreign security and funding agencies and the Government, depend on the cellular network for even their most basic operations.

7. Cellular telephony is seen not only as the only viable method of providing reliable, countrywide communications coverage in Afghanistan, but also as the most attractive, because of the lower roll-out complexity compared with fixed-line telephony.⁵ Studies of the economic benefits of telecommunications, specifically rural telecommunications, show that benefits are broader and benefit–cost ratios are higher than indicated by the usual project economic analysis.⁶ This is particularly true in Afghanistan, where telecommunications have become a vital part of the redevelopment process in the economy, health care, and security. The large external refugee community and importance of remittances into Afghanistan from this community adds a further dimension to the importance of telecommunications for development. Appendix 2 gives an overview of the telecommunications sector in Afghanistan.

B. Performance Indicators and Analysis

8. While coverage has grown impressively in the last 2 or 3 years in response to exploding demand, it is still far from nationwide, and requires significant additional investment, particularly to reach the more dispersed and underserved segments of society. Current (mobile) tele-density⁷ is estimated at around 46 (or 4.6%). This can be compared with the 2003 (latest) data for other comparable countries: Sudan at 4.7%, Somalia at 4.8%, Zimbabwe at 5.8%, and Lesotho at 6.3%. Among all countries surveyed by the International Telecommunications Union (ITU), only Ethiopia, Myanmar, Guinea-Bissau and Eritrea had lower tele-densities than Afghanistan (and in 2004 when ADB commenced funding for Afghanistan, the country had one of the lowest teledensities in the world).⁸

⁴ World Bank. 2005. *The Investment Climate in Afghanistan – Exploiting Opportunities in an Uncertain Environment* (draft). Washington, DC.

⁵ Including the lower risk of triggering land mines. Morajee, R. 2005. Afghan Telecoms Stay Above Ground. *Financial Times*. {City.}

⁶ ADB. 1997. *Guidelines for the Economic Analysis of Telecommunications Projects*. Manila; and ADB. 1996. *Socioeconomic Impact Study of Rural Telecommunications in Thailand*. Manila (TA 2381-THA). The studies conclude that the economic benefits of telecommunications are at least twice what subscribers pay for the service, and much higher for some user groups. Additional benefits are derived in education, employment, agriculture, environment, health, and safety.

⁷ Telephones per 1,000 people.

⁸ UNDP. 2005. *Millennium Indicator: 'Telephone lines and cellular subscribers per 100 population (ITU estimates)'*. Highly developed countries such as Luxemburg, Sweden, or Switzerland have tele-densities of 170–200%. The Philippines had a tele-density of 31% in 2003.

C. Analysis of Key Problems and Opportunities

1. Large Investment Needs

9. Linked to GDP, tele-density forecasts⁹ place achievable targets for Afghanistan at 120 by 2015 (a level comparable to that of Mongolia or Gabon in 2000). Most of this growth will be accounted for by cellular telephony and will be led by the private sector. The estimated necessary network build-out investment (by Roshan and its competitors) is approximately \$1 billion.¹⁰ On average, Afghanistan will need some \$76 million of investments per year to reach the forecasted levels.

10. The cellular market is served by two private cellular network operators, Roshan and Afghan Wireless Communications Company (AWCC),¹¹ and the state-run fixed-line operator Afghan Telecom (AT). Thanks to competition and the possibility for operators to take advantage of economies of scale, affordability has improved significantly, and the introduction of prepaid subscriptions means low barriers to adoption for a broad spectrum of users. A further cellular license was awarded in late 2005 to a third entrant, the Investcom Consortium (Investcom), which is expected to commence operations in the second half of 2006. With the addition of the new operator, Afghanistan's six major cities and their surrounding areas will benefit from further competition, as Investcom is bound by a license requirement to build out these areas within 6 months of commercial launch. A fourth license¹² will be acquired by Etisalat of the United Arab Emirates (UAE).

2. Nascent Regulatory Environment

11. The Ministry of Communications (MOC) is responsible for formulating sector policy. The telecommunications regulatory environment is undergoing extensive reform, as state-owned operating companies are being prepared for eventual privatization, and the regulatory functions are being disengaged from the operating units within MOC. The World Bank has had a central role in helping establish a telecommunications law and telecommunications regulatory environment and has contracted long-term consultants to work with MOC and with the nascent regulatory authority. A telecommunications law¹³ (the Telecom Law) was promulgated in December 2005, and a regulatory board, the Afghanistan Telecommunications Regulatory Authority (ATRA) has been set up under the auspices of MOC (it will ultimately be an independent agency, funded by levies on the operators). ATRA has been formed out of the interim Telecommunications Regulatory Board of Afghanistan, set up set up in 2003 as a direct response to the need for regulation thanks to the introduction of competition through the entry of Roshan as second operator. A regulatory sub-body, the Radio Inspection Department, has been established (under MOC) for mobile spectrum management and monitoring of frequency interference in accordance with the standards and recommendations of the ITU.

⁹ Fay, M. and T. Yepes. 2003. Cited in M. N. Naseri, November 2005. *Afghanistan Country Report, Telecommunications*. Kabul.

¹⁰ Naseri, M. N. November 2005.

¹¹ 20% owned by Ministry of Communications.

¹² A license was awarded in late 2005, but as the awardee failed to pay the license fee, the award was withdrawn. It is likely that the Government will re-tender the license (a possibility which is factored into Roshan's business plan).

¹³ Law for Regulation of Telecommunication Services, 18 December 2005.

D. ADB's Operations in the Country and Sector

1. In Afghanistan

12. Since the resumption of its activities in Afghanistan in 2002, ADB had through to the end of 2005 approved nearly \$1 billion in loans, grants, technical assistance, and private sector investments to support Afghanistan's development and is administering a further \$82.6 million in funding agency-financed or cost-shared activities, including assistance through the Japan Fund for Poverty Reduction.

13. ADB funds have helped rebuild important road and power infrastructure and irrigation systems in northern Afghanistan, and have promoted agricultural growth and poverty reduction by developing a sound policy framework and efficient sector institutions. ADB has pledged to consider assistance of about \$1 billion in loans and grants over the coming five years, subject to the outcome of ongoing negotiations. This assistance would include loan and equity investments of up to \$100 million in partnership with local and foreign investors, and guarantees of about \$100 million to catalyze private investments. Appendix 3 presents a summary of ADB's assistance for Afghanistan.

2. ADB's Sector Strategy

14. ADB's role in the information and communication sector, while more modest than that of other multilateral and bilateral institutions, includes (i) supporting the private sector, which is expected to lead in developing information technology (IT) networks; (ii) encouraging governments to create a predictable, transparent, and nondiscriminatory policy and regulatory environment; and (iii) ensuring that IT-related rules and practices are responsive to the emerging revolutionary changes in the way people conduct business using IT.¹⁴ To date, ADB has made private sector loans to telecommunications companies in the Philippines, Bangladesh, and Afghanistan. Appendix 4 gives an overview of ADB assistance to the telecommunications sector.

E. Corporate Overview of Roshan

15. Roshan's commercial expansion has been remarkable. Over its short operating history, Roshan has overtaken the first entrant, capitalizing on several key comparative advantages, including superior technology, greater national coverage, a strong dealer network, innovative marketing, and a general reputation for quality of service and in being first mover in new business and services. Table 1 below gives an overview of Roshan's corporate development.

¹⁴ ADB. 2000. Okinawa Charter on the Global Information Society. *Asian Development Outlook 2000 Update*. Manila. (Box 1, p. 59).

Table 1: Roshan Summary Operational History

Date	Event
Jan 2003	Telecom Development Company Afghanistan was established
Jan 2003	Awarded a 15-year nationwide GSM license following an international license tender
Jul 2003	Launched commercial services in Kabul
Dec 2003	Reports 49,779 subscribers across five cities
Jan 2004	Offers commercial services in Herat, Jalalabad, Kunduz, Mazar-e-Sharif
Mar 2004	Launched commercial services in Kandahar
Dec 2004	Reports 313,192 subscribers across 25 cities
Jun 2005	Reached 500,000 subscribers
Dec 2005	Reports 716,832 subscribers across 42 cities
Apr 2006	801,014 subscribers in 27 provinces across the country

GSM = global system for mobile communications.

Source: Roshan.

1. Ownership and Management

16. The majority shareholder (with a 51% stake) is the Aga Khan Fund for Economic Development (AKFED), the economic development arm of the Aga Khan Development Network (AKDN), a group of private, nondenominational development agencies seeking to improve opportunities and living conditions in specific regions of the developing world, especially Africa and Asia. AKFED also participates in a GSM mobile communications venture in neighboring Tajikistan. In addition, Monaco Telecom International (MTI), indirectly controlled by Cable & Wireless, holds 36.75%, and MCT Corporation (MCT), a US-based provider of mobile telecommunications to Central Asia and Russia, owns the remaining 12.25%. See Appendix 5 for more details on the shareholders.

17. The core management team has been in place since operations started. ADB has worked closely with Roshan's board of directors and management over the last two years. See Appendix 6 for brief biographies of Roshan's directors and management team.

2. Competitive Environment

18. Afghanistan has three mobile telephone service providers: Roshan, AT, and AWCC. Recently, a fourth entrant, Investcom, was awarded an additional license.

19. AWCC is 80% owned by Telysint, a private Afghan company, and 20% by the Government of Afghanistan (the Government). AWCC was granted the first operating license in 1999. This subsequently fell into abeyance and was then effectively renewed in 2001. AWCC resumed commercial operations in April 2002. AWCC's network, consisting of some 150 base transceiver stations (BTS), covers 40 cities in 16 provinces.

20. Investcom is led by Investcom LLC, an international provider of mobile telecommunications services with operations in eight countries in the Middle East, Africa, and Europe, listed on the London Stock Exchange. Investcom has selected Ericsson as equipment supplier and expects to launch commercial services under its *Areeba* brand during 2006.

21. AT is the country's fixed-line operator, wholly owned by the Government. It has recently been corporatized. It has also been rumored that Etisalat may be awarded the fourth license to be issued. AT operates a code division multiple access (CDMA) network, covering 21 provinces. Appendix 7 gives further details on the competitors.

3. Social Impact and Program

22. Since its commercial launch in July 2003, Roshan has built a national mobile telephony network which is used daily by about 800,000 Afghans across 150 towns throughout Afghanistan. Roshan indirectly employs over 15,000 Afghans through its network of contractors, distributors, and resellers and support businesses.

23. In addition to Roshan's core commercial operations, which bring significant inherent social benefits, Roshan enjoys a good market reputation and brand recognition thanks to its social development efforts. It has a number of programs to benefit not only its employees, but the community as a whole. In 2006, the Roshan board approved the formal creation of the Social Program. The key social programs/impacts include the following:

- (i) **Mobile credit and/or electronic cash transfers.** More people in Afghanistan have mobile phones than bank accounts. The creation of a mobile credit transfer system whereby individuals can transfer value across Afghanistan to each other and/or to banks or money dealers licensed by the Afghanistan Central Bank (Da Afghanistan Bank [DAB]) could fundamentally impact how Afghans transact and save and transfer money. Such a system, as well as enabling economic activity, would serve the policy goals of the Government and DAB by establishing greater visibility over domestic as well as international remittance currency flows. Roshan expects to try out a mobile credit transfer initiative in Q4 2006.¹⁵
- (ii) **Public call office (PCO) program. A program similar to GrameenPhone's Village Phone project,**¹⁶ whereby people without access to phones can still access mobile phone services. Roshan has some 360 active PCOs¹⁷ operated by individual entrepreneurs around the country. Roshan is looking to expand this model, e.g., by working with women's nongovernment organizations (NGOs) to roll out in the south, and by employing extended range antennas, which will enable expansion into previously uncovered rural areas in 2006. Through a partnership with First Microfinance Bank, entrepreneurs can borrow for the capital expenditure in acquiring a PCO unit.
- (iii) **Rural telephony.** The Roshan network covers about 35% of the population. Extending Roshan's coverage to less developed (and predominantly rural) areas is a priority of the Social Program.
- (iv) **Medical and health program.** Roshan has started a state-of-the-art medical/dental clinic in an unused leased building (its former head office), which,

¹⁵ While Roshan considers the implementation of a mobile credit system a high and urgent priority, issues such as technology integration, testing, and obtaining the requisite regulatory approvals from DAB and ATRA may take time.

¹⁶ See Appendix 8 for a description of the Village Phone project. It was awarded the Development Gateway Foundation's first Petersberg prize for "outstanding achievement in the use of information and communication technologies to improve people's lives".

¹⁷ Not all PCOs issued are active: 130 of the active PCOs are run by former combatants through the United Nation's Demilitarization, Demobilization and Reintegration program.

in addition to providing staff with access to checkups and medical/dental services, also conducts training for all staff in first aid and dental hygiene, as well as trauma response (for selected personnel). The clinic covers operating costs by providing health services also to other organizations such as embassies and NGOs. Staff members pay a fee for the services but receive a monthly medical stipend (\$15) to cover expenses. Part of the health professionals' time is also allocated to outreach activities, e.g., working with local and rural orphanages on health education and prophylaxis. Roshan also sponsors, together with the Ministry of Public Health, training for laboratory technicians at the Aga Khan University in Pakistan.

- (v) **Social welfare.** Aimed at the 50% of the population which is below 15 years of age, Roshan has a number of purely social initiatives across the country, including the following:
 - (a) Support for Aschiana Orphanage. The orphanage provides some 600 street children in Kabul with shelter, food, and half-day education (the other half of the day the children can retain income-generating activities). Roshan supports the activities through sponsorship (e.g., a soup kitchen during winter) and through its health programs.
 - (b) Playground and park renovation.
 - (c) Textbook and stationery for orphanages and schools in northern Afghanistan.
 - (d) Sport and recreational events, such as kite-flying festivals and poetry competitions. Such events were banned under the Taliban and now serve to rebuild collective civil pride based on culture.
- (vi) **Voter information outreach.** In 2005, Roshan provided a toll-free number, computers and phones free of charge to the Joint Electoral Management Body Secretariat for voters to access information on the parliamentary and provincial elections, providing access for the many people who are unable to travel to participate in civic education seminars. In the first 2 months, some 61,000 callers accessed the service. Roshan also provided technical support.

IV. THE PROPOSED PROJECT

A. Project Description

24. The Project includes expanding Roshan's BTS network, building out a synchronous digital hierarchy (SDH)¹⁸ fiber-optic microwave ring, implementing alternative power solutions,¹⁹ increasing capacity in existing cities, and enhancing network redundancy.

25. In 2005, Roshan started to build out an SDH microwave backbone to reduce the dependency on very small aperture satellite terminal (VSAT).²⁰ The move from VSAT will reduce long-term transmission costs, improve local call quality and accelerate the ability to add additional capacity. To cater to the projected increase in subscribers and traffic, additional

¹⁸ A fiber-optic transmission system for high-speed digital traffic.

¹⁹ Solar power is being evaluated as a replacement for diesel to power BTS sites.

²⁰ A small earth station for satellite transmission that handles up to 56 Kbits/sec of digital transmission.

capacity will be needed in Kabul and the other main cities. To meet anticipated increased competition in these areas, Roshan will continue to improve network quality.

26. Roshan is connected with Pakistan via microwave links for interconnecting traffic between Roshan subscribers and Pakistan operators. In 2006, Roshan is looking to transmit international transit traffic through Pakistan via fiber-optic cable in Pakistan, thus improving quality and reducing VSAT costs later.

B. Impact and Outcome

27. The Project will directly benefit the current users within the coverage area, through better and cheaper services; potential new users in areas to which coverage will be expanded through the Project; and users anywhere (within as well as outside Afghanistan) able to connect to the Roshan network through better service, lower prices, and a wider user base with which to connect. The Project will also directly benefit Roshan stakeholders, including dealers, employees, and recipients of its social development programs. Last, it will indirectly benefit all of Afghanistan and its trading partners by promoting economic activity, including lower transaction costs.

28. *The Economist* ranks the growth of the telecommunications industry as the “biggest success story” in Afghanistan. It states that the spread of mobile phones has had a “revolutionary” impact on business, even among local farmers, who can “check prices before herding their sheep to market.”²¹ Roshan is considered to be one of the soundest private sector companies in the market, and the development impact of the proposed financing is believed to be compelling. Roshan’s phase-II expansion will have the following development impact:

- (i) Accelerated, wider network coverage will help meet substantial unmet demand for telecommunications services, promoting economic growth. Agriculture, merchandising, manufacturing, and financial services benefit from improved telecommunications. In addition, the Project is expected to improve the delivery of services such as health care, education, and security throughout the country;
- (ii) Expanded coverage to remote areas will support rural development and pro-poor economic growth. The project expansion provides critical and flexible infrastructure to meet the needs of small and medium-sized enterprises and the farming sector where there is no access to other efficient forms of communication. The project expansion will extend coverage of the PCO program to smaller towns and ill-served rural areas to a far greater extent than competitors’ coverage. By opening up in smaller towns and cities, Roshan can, in the words of an industry observer, “push these areas out of the middle ages and into the 21st century”.²²
- (iii) The expansion project will provide direct training, jobs, and business opportunities in underdeveloped areas to staff, dealers and subcontractors, including the MicroReach program, targeted at women.
- (iv) It will directly promote regional integration through its interconnectivity initiatives with neighboring countries, drawing on the links forged by Roshan and its

²¹ *The Economist*. 2006. Creeping Towards the Marketplace. 2 February.

²² Morajee, R. 2005, 24 Nov. Afghan Telecoms Stay Above Ground. *Financial Times*.

shareholders (Appendix 9 gives a list of the extensive interconnectivity links created by Roshan in its 3 years of operations).

- (v) The Project will drive private sector development into a “higher gear” through the continued support for arguably the best example of good governance, corporate responsibility, and business success, thus encouraging a still-nascent private sector and still-hesitant foreign direct investment.

C. Accounting, Auditing, and Reporting

29. Roshan’s annual accounts are audited by KPMG Afghanistan. Roshan follows standard ADB reporting requirements for its existing loan, and will continue to do so for this loan.

D. Project Performance Monitoring and Evaluation

30. As required under the existing loan, Roshan will continue to provide quarterly expansion reports. ADB will monitor the expansion vis-à-vis the business plan. Evaluation of the Project will be based on three levels: (i) the success of the Project itself, (ii) development of the telecommunications sector in general, and (iii) private sector development. Please see Appendix 1 for the development impact and performance monitoring framework, including relevant performance indicators.

E. Project Review

31. The Project will be reviewed regularly as per standard ADB portfolio management and project evaluation practice.

F. Environmental and Other Safeguard Policy Aspects

32. Roshan’s construction works have virtually no negative impact on the environment. There will be minimal cable construction, and masts will be located on existing buildings or in open fields. The environmental category of the phase-I project was C, and the Project has been assigned the same classification. The due-diligence assessment showed that Roshan has in place satisfactory procedures for site selection and construction of BTSs, fuels/hazardous material (batteries) use, and disposal of BTSs and waste management (solid and liquid wastes generated as part of the installation of BTSs). Neither the original construction nor the expansion will result in any resettlement, and the Project has accordingly been classified as involuntary resettlement category C. The Project is not foreseen to have any negative impact on indigenous peoples, and is consequently under category C. The indigenous people and involuntary resettlement categorizations are also unchanged from phase I.

V. THE PROPOSED ADB ASSISTANCE

A. Overview

33. ADB was first approached by Roshan and AKFED in early 2004 about possible financing of the first phase of Roshan’s national network expansion. The phase-I expansion project was selected for ADB support, given the technical and financial sustainability of the business model, the economic and social benefits of the Project, including environmental sustainability, the

unmet need for medium-term finance from the commercial market, its role in advancing regulatory reform, and its full compatibility with ADB's CSPU.

34. Following the completed disbursement of phase-I financing, in December 2005 Roshan requested ADB and its other senior lenders, PROPARCO and SB, for further funding. Access to such additional funding would allow for a quicker response to higher-than-expected market demand. Without the phase-II funding, Roshan's pace of expansion will have to be significantly reduced.

B. Nature and Amount

35. ADB's proposed financial assistance is expected to consist of the following components:

- (i) a term loan of up to \$40 million without government guarantee; and/or
- (ii) a CFS in two tranches, of (a) about \$15 million²³ and (b) \$5 million–\$15 million²⁴; and
- (iii) a possible PRG for CFS tranche 2 of the same amount.

36. Depending on the final size of the PRG, the loan could range from \$32.5 million (with PRG for \$15.0 million in CFS tranche 2) to \$40.0 million (no PRG for CFS tranche 2).

C. Value-Added by ADB

37. It must be appreciated that any investment or loan in Afghanistan is, by virtue of the political and security environment, inherently risky. In such risky environments, ADB can (in addition to the direct development impact of ADB's financing) add value by mitigating other lenders' risk through use of its CFS or PRG products. In this way, the development impacts can be amplified. In the Project, ADB will add value through the following measures:

- (i) Catalyzing further commercial financing to a thriving sector in Afghanistan. Without secure, medium-term financing, mobile network expansion in Afghanistan will be constrained, which will, in turn, constrain economic development. No local debt market exists at present and offshore commercial and export credit debt sources are not yet prepared to extend uncovered financing to businesses in Afghanistan. Without the proposed financing and ADB's CFS-PRG structure, it is possible that Roshan's expansion program may have to be significantly scaled back and/or delayed as the commercial bank funding would almost certainly not be forthcoming.
- (ii) Demonstrating the continued support for a sustainable, well-capitalized, private sector-led, Afghan reconstruction effort success story (of which there are not many), encouraging entrepreneurs and financial investors to consider investments in key sectors in Afghanistan, and forcing competitors to improve service offering and performance, and
- (iii) Supporting a professional, well-managed and respected industry participant in leading the dialogue with government and other stakeholders about sector development, and, in this context, enhancing the value-added that ADB has

²³ Amount equivalent to the remaining vendor financing (originally from Alcatel) outstanding at the date of signing (currently €12.5 million) .

²⁴ Depending on level of commercial bank interest.

demonstrated by recently and decisively engaging with the government regarding safeguarding private sector interests.

D. Link to Country Strategy and Program

38. The proposed loan is fully in line with ADB's country strategy and program update (CSPU) and the Government's strategic intentions. ADB's most recent CSPU²⁵ reports the Government's endorsement of ADB's three-pronged approach to reconstruction through (i) building capacity, (ii) establishing appropriate policy and institutional frameworks, and (iii) rehabilitating essential infrastructure. Aiming at expanding the cellular communications network nationwide, the Project is part of the third prong. Since the Project is designed to promote economic growth through improved telecommunications (benefiting all productive sectors and consumers) and related spill-over effects, it is fully in line with the CSPU's assertion that ADB's entire public sector lending program for 2005–2008 will be allocated to economic growth. The CSPU specifically mentions telecommunications as an area offering private sector investment opportunities. The nationwide coverage, focusing on rollout into rural towns, further supports the CSPU in that it would contribute towards "reducing rising inequalities in incomes in different regions as well as gaps between urban and rural areas."

39. Roshan's active efforts to promote regional integration via interconnection agreements with operators in neighboring countries are also in line with ADB's CSPU pledge to support activities that will strengthen Afghanistan's links with its regional neighbors, and that "more efforts will be made to incorporate a regional dimension in loan projects, such as...ensuring connectivity with regional...grids".²⁶ Last, the CSPU states explicitly that no change is anticipated in ADB's deep engagement in the telecommunications sector (via the existing loan to Roshan, and also through ADB's membership in the consultative group for energy, mining and telecommunications), as "ADB's...private sector support to the...telecommunications sectors..." is "highly appreciated" by the Government of Afghanistan.

E. Compliance with Investment Limits

40. The proposed investment, ADB's fifth private sector investment in Afghanistan, would, once approved by the Board, represent 2.26% of ADB's total private sector exposure,²⁷ and increase ADB's private sector investment (i) in Afghanistan from 2.14% to 4.35% total exposure, and (ii) in the telecommunications and communications sector from 3.06% to 5.26% total exposure. ADB's exposure to Roshan would increase from \$35 million to (up to) \$75 million. The proposed investment is within approved aggregate, country, industry, group, and single-project exposure limits for ADB's private sector projects.

F. Anticorruption Measures: Combating Money Laundering and the Financing of Terrorism

41. Roshan has been advised of ADB's policies to combat corruption, money laundering, and financing of terrorism. Consistent with its commitment to good governance, accountability, and transparency, ADB will require Roshan to institute, maintain, and comply with internal procedures and controls following international best-practice standards to prevent corruption or

²⁵ ADB. 2005. *Afghanistan: Country Strategy and Program Update (2006–2008)*. Manila.

²⁶ While this statement specifically refers to power transmission, an analogous argument can be made for support for connectivity to regional telecommunications grids.

²⁷ Exposure is defined as (outstanding portfolio and/or disbursements)+(undisbursed commitments). An amount is considered committed when there are signed legal agreements. Total exposures are as of 31 March 2006.

money laundering or the financing of terrorism, and covenant with ADB to refrain from engaging in such activities. The investment documentation between ABD and Roshan will further allow ADB to investigate any violation or potential violation of these undertakings.

G. Assurances

42. A framework agreement was signed on 21 January 2003 between the Government and ADB. The letter agreement contains assurances by the Government regarding ADB's commencement of private sector operations. ADB will obtain a no-objection letter from the Government before any funding under the loan to Roshan is disbursed.

43. ADB will enter into suitable documentation, in form and substance satisfactory to ADB, following approval (if obtained) of the proposed financing by the Board of Directors.

VI. RECOMMENDATION

44. I am satisfied that the proposed loan and CFS with PRG would comply with the Articles of Agreement of the Asian Development Bank (ADB) and, acting in the absence of the President, under the provisions of Article 35.1 of the Articles of Agreement of ADB, I recommend that the Board approve (i) the loan of up to \$40,000,000 to Roshan for the phase-II expansion of its cellular telephony network, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a term of 6 years, including a grace period of 2 years; and such other terms and conditions as are substantially in accordance with those set forth in this report and recommendation presented to the Board; and/or (ii) the CFS in two tranches of (a) approximately \$15 million; and (b) \$5 million–\$15 million; with (iii) a PRG of up to \$15 million for the CFS tranche 2.

Liqun Jin
Vice President

6 June 2006

DEVELOPMENT IMPACT AND PERFORMANCE MONITORING FRAMEWORK

Development Concept	Impact	Performance Indicators
<ul style="list-style-type: none"> Economic value added (through the project itself) 	<ul style="list-style-type: none"> Satisfactory financial performance 	<ul style="list-style-type: none"> Implementation targets in business model Market share Timely debt service ROA ROE Net Income growth Net revenues to Government
	<ul style="list-style-type: none"> Indirect benefits to employees, dealers, suppliers, service providers, contractors, etc. 	<ul style="list-style-type: none"> Increase in number of employees trained Decrease in proportion of expatriates on staff Increase in total amount of commission paid to dealers Increased total amounts of salary paid to employees
	<ul style="list-style-type: none"> Social development impact 	<ul style="list-style-type: none"> Increase in number of PCOs Funding from Telecom Development Fund efficiently allocated and deployed
<ul style="list-style-type: none"> Contribution to higher economic growth (through enhanced telecom services in Afghanistan) 	<ul style="list-style-type: none"> Wider access to telecom services 	<ul style="list-style-type: none"> Tele-density Percent of population covered (or provinces, urban centers, land area) Subscriber growth Growth in total minutes of use
	<ul style="list-style-type: none"> More and better telecom services 	<ul style="list-style-type: none"> Increase in value-added services available among service providers, e.g., mobile banking Lower proportion of low quality connections
	<ul style="list-style-type: none"> Lower-cost telecom services 	<ul style="list-style-type: none"> Call cost and SIM price development (revenues/minutes of use)

Development Concept	Impact	Performance Indicators
	<ul style="list-style-type: none"> • Regional economic integration 	<ul style="list-style-type: none"> • Increase in international telecom traffic • Increased in number of interconnection partners/countries
<ul style="list-style-type: none"> • Private sector development (beyond the project) 	<ul style="list-style-type: none"> • Role model for general corporate governance and management 	<ul style="list-style-type: none"> • Increase in number of registered enterprises • Increased FDI
	<ul style="list-style-type: none"> • Role model for telecom sector particularly - increased investments 	<ul style="list-style-type: none"> • Successful sale of AT • Increased commercial financing to telecom companies in Afghanistan

AT = Afghan Telecom, FDI = foreign direct investment, PCO = public call office, ROA = return of assets, ROE = return on equity, SIM = subscriber identity module.

TELECOMMUNICATIONS SECTOR IN AFGHANISTAN¹

A. Introduction

1. In November 2002, one year following the fall of the Taliban, teledensity in Afghanistan was estimated at just 0.12%, which is one of the lowest in the world. The Ministry of Communications (MOC) said there were only 33,000 lines in service in the country's major cities, while lines in provincial and rural areas had not been considered as so few were working. As a result of a complete lack of investment in fixed-line telephony since the Soviet occupation in 1979, Afghanistan's existing infrastructure was either neglected through lack of funding or damaged in the armed conflict that spanned nearly 26 years. The capital, Kabul, was estimated to have just 20,150 fixed lines in the late 1990s, serving over 2 million people, with most calls dialed being either dropped or never connected.

2. In a recent investment climate survey², 26% of the surveyed firms mention telecommunications as a major or severe problem. Afghanistan's tele-density³ in 2005 is estimated at around 46 (or 4.6%). This can be compared with the latest data (2003) for other comparable countries: Sudan at 4.7%, Somalia at 4.8%, Zimbabwe at 5.8%, and Lesotho at 6.3%. Among all countries surveyed by the International Telecommunications Union (ITU), only Ethiopia, Myanmar, Guinea-Bissau, and Eritrea had lower tele-densities than Afghanistan.⁴

3. In 2003, MOC outlined a number for targets for the development of the country's telephony sector, which are summarized below.

Table A2.1: Key Telecommunications Targets

Item	2005 E	2006 E	2007 E
Fixed-Line Teledensity	0.0%	2.0%	4.0%
Mobile Penetration	3.0%	8.0%	16.0%
Internet Penetration	2.5%	3.0%	10.0%
Number of Settlements Connected	180	3,000	6,000
Cumulative FDI	500	1,000	2,000
Telecommunications Direct Employment	6,000	10,000	15,000
Telecommunications Indirect Employment	12,000	25,000	35,000

E = estimated, FDI = foreign direct investment.

Source: TeleGeography, Ministry of Communications.

¹ This section is largely based on World Bank. December 2005. *The Investment Climate in Afghanistan – Exploiting Opportunities in an Uncertain Environment*. Washington, DC; and M. N. Naseri. November 2005. *Afghanistan Country Report – Telecommunications*, Kabul.

² World Bank. December 2005. *The Investment Climate in Afghanistan – Exploiting Opportunities in an Uncertain Environment*. Washington, DC.

³ Telephones per 1,000 people

⁴ Source: UNDP. 2005. Millennium Indicator: "Telephone lines and cellular subscribers per 100 population (ITU estimates)". Geneva. Highly developed countries such as Luxemburg, Sweden, or Switzerland have tele-densities in the 170–200% range. The Philippines had a tele-density of 31% in 2003.

4. Linked to GDP, tele-density forecasts⁵ place achievable targets for Afghanistan at 120 (12%, or 3.5 million subscribers) by 2015⁶ (comparable to that of Mongolia or Gabon in 2000). Most of this growth will be accounted for by cellular telephony and will be led by the private sector. The estimated necessary network build-out investment is about \$1 billion.⁷ Current private investments in mobile networks stand at some \$240 million. Thus, on average, Afghanistan would need some \$76 million of investments per year to reach the forecasted levels.

B. Sector Policy and Regulatory Environment

5. MOC is responsible for formulating sector policy. The telecommunications regulatory environment is undergoing extensive reform, as state-owned operating companies are being prepared for eventual privatization, and the regulatory functions are being disengaged from the operating units within MOC. The World Bank has had a central role in helping establish of a telecommunications law and telecommunications regulatory environment and has contracted long-term consultants to work with MOC and with the nascent regulatory authority.

6. The Telecom Law⁸ was promulgated in December 2005, and a regulatory board, the Afghanistan Telecommunications Regulatory Authority (ATRA) has been set up under the auspices of MOC (it will ultimately be an independent agency, funded by levies on the operators). This law replaced the Laws on Regulation of Telephone Services 1964, 1968, and 2000. New salient features include provisions for regulating tariffs of operators with “significant market power”, and for the oversight by ATRA of the Telecom Development Fund, the objective of which is to fund telecom development projects that may not be undertaken on commercial grounds by the operators, funded by levies on operator revenues. ATRA was formed out of the interim Telecommunications Regulatory Board of Afghanistan (TRAB), set up in 2003 as a direct response to the need for regulation thanks to the introduction of competition through the entry of Roshan as second operator. The Telecom Law was expected to be enacted as early as in late 2004, but was only promulgated in December of 2005.

7. There remains an access agenda for rural areas, a need to considerably improve the quality and range of services and to further reduce prices. Nonetheless, progress to date has been remarkable. The Telecom Development Fund will play a role in this area.

8. Over the past 4 years, as the telecommunications sector has continued to develop, telecommunications revenues have grown to become a significant portion of the Government's budget.

9. Today, the main objective of Government policy for communications is to modernize and rapidly expand telecommunications networks and services, and to achieve universal access to telephony across the country. The Government is also focusing on information and communication technologies, seeking to create opportunities for disadvantaged groups, and investing in developing such opportunities. The Government recognizes the significance of creating the right conditions for open competition and private sector investment by ensuring a stable and transparent policy, legal, and regulatory environment. More recently, initial steps

⁵ Fay, M. and T. Yepes. 2003. Cited in M. N. Naseri. November 2005. *Afghanistan Country Report, Telecommunications*. Kabul.

⁶ Government of Afghanistan. 2004. *Securing Afghanistan's Future: Accomplishments and the Strategic Path Forward*. Kabul. (Chapter 3, page 53).

⁷ M. N. Naseri. November 2005. *Afghanistan Country Report, Telecommunications*. Kabul.

⁸ Law for Regulation of Telecommunication Services, 18 December 2005.

were taken to establish the Telecommunications Development Fund to help support the rapid development of universal access in areas that may be perceived as uneconomic by the market.

C. Fixed-line Telephony Market

10. In the absence of any national telecommunications operators, in 2001 the MOC took over the operation of the country's limited fixed-line infrastructure. The ministry inherited two separate fixed-line networks, one outdated analogue system dating back to Soviet rule, and a newer fiber-optic network used by the Taliban. Neither network extended beyond the country's borders nor did they offer reliable interconnectivity, hence Afghanistan relied heavily on satellite connectivity for international calls and limited data transmission, as well as for most domestic long-distance services.

11. Despite the significant domestic and international support, rehabilitation of the fixed-line telecommunications sector has moved very slowly, hampered by security issues and the absence of infrastructure. After securing new funding from a number of sources in 2003, the interim Government announced a number of emergency equipment tenders in a bid to establish a base for launching the new fixed-line network. Among the institutions providing financial help was the Afghan International Development Trust Fund, which pledged \$3 million in grants, and the World Bank, which approved a \$22 million loan.

12. The Government's priority has been to provide backbone services, fixed mobile services in major urban areas and service provision in the districts. The MOC' investment program over the next few years includes the following:

- (i) telecommunications infrastructure, including a fiber-optic ring as well as microwave spurs to link towns and cities that are not on major roads, a district communications initiative, an expansion of the MOC-owned fixed wireless network to uncovered provinces and other items, including billing systems and spectrum management;
- (ii) rehabilitation and construction of facilities in Kabul, regional capitals, districts and airports, and hotels;
- (iii) construction and operation of facilities for the training of management and technical staff; and
- (iv) support to the regulatory and legal frameworks and restructuring of each postal and telecommunications operator into viable entities.

13. Although no second fixed-line operator is licensed in Afghanistan, the regulator has set aside within its numbering plan the possibility of two further licensees. There are currently no plans to award additional fixed-line licenses in Afghanistan.

D. Mobile Telephony Market

14. Driven by a competitive market and \$200 million in private investment, the mobile footprint covers as much as 50–60% of the population. Statistics on the population and size of settlements are limited and unreliable, hence, estimates as to the penetration of mobile telephony are approximate. Similarly, not all operators publicize subscriber numbers.

15. Following the first commercial launch in Kabul in April 2002, mobile services have developed rapidly, reaching more than 1.1 million subscribers by December 2005 and expected to reach 2.2 million by the end of 2006.

16. Given the low penetration rate of 4.6% at the end of 2005, and the fact that 50% of the population are 15 years of age or younger, the prospects for market growth are significant. In 2003, the MOC estimated that by 2015 there would be about 3.5 million telephony subscribers for both fixed and mobile services; this estimate now seems to have been conservative given the expected 2.2m mobile subscribers by the end of 2006 (which equates to a penetration of just 8.4%). Similarly, the Government's target of 12% mobile penetration by 2015 also seems conservative.

17. Confidence in the sector has resulted in significant private sector investments, most recently evidenced in 2005 by the \$40.1 million paid by Investcom for Afghanistan's third mobile license. Investcom is expected to launch services during Q3 2006. The significant mark-up in license fee compared with the \$5 million paid by Roshan is further evidence of the confidence of the private sector in the growth prospects of this market. Nonetheless, the anticipated arrival of Investcom as one of two new operators should boost subscriber figures further for all operators, by improving market awareness of mobile telephony, and by expanding network coverage to new areas.

1. Market Structure

18. The cellular market is currently served by two private cellular network operators, Roshan and AWCC and the state-run fixed-line operator Afghan Telecom. Competition has resulted in price decreases, which has dramatically increased affordability to users, and the introduction of prepaid subscriptions means low barriers to adoption for a broad spectrum of users.

19. Both AWCC and Roshan offer national and international mobile calling, voice mail, national and international SMS, and data services, on prepaid pricing plans. Roshan also offers a limited, by invitation only, postpaid pricing plan to corporations. The unreliability of the postal service and lack of retail banking infrastructure, remain a barrier to the further development of this product.

20. Alongside the three operators, there is also a GSM network run by Ericsson for the United Nations forces and international aid organizations in Kabul. It was launched in 2002 and has capacity for about 5,000 users.

21. A further cellular license⁹ was awarded in late 2005 to a third entrant, Investcom. With the addition of the new operator, the six major cities and their surrounding areas will become a key competitive area, as Investcom is bound by a license requirement to build out these areas within six months of commercial launch.

22. As of the end of March 2005, MOC had made no public statements on the award of a fourth mobile license. A credible rumored buyer is UAE's Etisalat.

E. Source: Roshan, Standard Bank.

23. The internet has come to be one of the most efficient ways for firms to communicate and to conduct business with distant clients. However, in Afghanistan, business use of the internet is nearly nonexistent outside of a few of the largest cities. On average 15% of the surveyed firms¹⁰

⁹ A second license was awarded in late 2005, but as the awardee failed to pay the license fee, the award was withdrawn.

¹⁰ World Bank. December 2005.

regularly use e-mail in interactions with their clients and suppliers and 9% use web pages. There is a distinct regional difference in the use of the internet. Almost a quarter of enterprises in Kabul, Herat, and Mazar-e-Sharif reported using the internet. But in Jalalabad and Kandahar no firms reported using websites and only 6% of the sample in Kandahar used e-mail.

ADB ASSISTANCE FOR AFGHANISTAN

**Table A3.1: Asian Development Bank Loans with Technical Assistance for Afghanistan
(2002–31 March 2006)**

Project	Approval Date (Month-Year)	Commitment Amount (\$'000)
A. Loans		
Post-Conflict Multi-sector Program	Dec 2002	167,180
Emergency Infrastructure Rehabilitation and Reconstruction	Jun 2003	150,000
Agriculture Sector Program	May 2004	55,000
Regional Airports Rehabilitation	Nov 2004	30,000
Andkhoy-Qaisar Road	Dec 2004	80,000
Power Transmission and Distribution	Apr 2005	26,500
Fiscal Management and Public Administration Reform	Dec 2005	48,000
Western Basins Water Resources Management	Dec 2005	60,500
Subtotal (A)		617,180
B. Technical Assistance		
Capacity Building for Reconstruction and Development	May 2002	14,636
Disaster Preparedness and Management Capacity Building	May 2002	500
Energy Sector Review and Gas Development Master Plan	Mar 2003	950
Capacity Building for Reconstruction and Development (Supplementary)	Mar 2003	450
Power Transmission and Distribution	Aug 2003	750
Herat-Andkhoy Road	Sep 2003	1,000
Regional Airports Rehabilitation	Nov 2003	1,000
Institutional Strengthening of the Gas Sector	Dec 2003	750
Support for Public Administration Reform Program	Dec 2003	3,400
Capacity Building in Agriculture and Natural Resource Management for Programming and Aid	Dec 2003	400
Poverty Assessment and Socioeconomic and Macroeconomic Statistical Capacity Building	Dec 2003	1,750
Capacity Building for Reconstruction and Development (Supplementary)	Jan 2004	90
Preparing the National Power Transmission Grid	Feb 2004	750
Capacity Building for Agriculture Policy Reform	May 2004	1,000
Capacity Building for Reconstruction Development (Supplementary)	Jun 2004	271
Security of ADB-Financed Projects in Afghanistan	Jun 2004	990
Master Plan for Road Network Improvement	Aug 2004	2,000
Western Basins Water Resources Management and Irrigated Agriculture Development	Oct 2004	1,960
Preparing the Natural Gas Development	Oct 2005	995
Small to Medium-Sized Hydropower Development Project	Oct 2005	800
Commercial Agriculture Development	Nov 2005	995
Financial Market and Private Sector Development	Dec 2005	1,000
Subtotal (B)		36,437
Total		653,617

A&O = advisory and operational technical assistance, PP = project preparatory technical assistance.
Source: Asian Development Bank.

**Table A3.2: Asian Development Bank Direct Assistance
to the Private Sector in Afghanistan (2002–31 March 2006)**
(\$'000)

Approval Date	Investment/ Loan No.	Company	Equity Investment	ADB Loan	PRG	Total
May 2004	7199	Afghanistan International Bank	2,602			2,602
September 2004	2091	Afghanistan Investment Guarantee Facility			10,000	10,000
November 2004	7202/2098	Telecom Development Company Afghanistan B.V.		35,000		35,000
July 2005	7215	Afghanistan Renewal Fund	5,500			5,500
		Total				53,102

ADB = Asian Development Bank, PRG = political risk guarantee.
Source: Asian Development Bank.

ADB ASSISTANCE TO THE TELECOMMUNICATIONS SECTOR

Table A4.1: Telecommunications Sector Loans
(As of 31 March 2006)

Country	Loan Project	Amount (\$ million)	Approval Date
Sri Lanka	Communications Satellite Earth Station	3.6	19 Aug 1971
Western Samoa	Telecommunications	14.5	21 Nov 1972
Viet Nam	Saigon Telecommunications	6.2	6 Dec 1973
Tonga	Telecommunications	1.3	8 Nov 1973
Sri Lanka	Communications Satellite Earth Station	1.5	28 Nov 1974
Tonga	Multiproject	1.2	10 Dec 1979
Pakistan	Telecommunications	29.0	17 Jun 1982
Thailand	Rural Telecommunications	72.6	11 Dec 1984
Pakistan	Second Telecommunications	69.0	26 Nov 1985
Cook Islands	Second Multiproject (telecom subproject)	0.6	27 Oct 1987
Philippines	Philippines Long Distance Telephone Co.	24.0	29 Mar 1988
India	Telecommunications	135.0	7 Apr 1988
India	Second Telecommunications	118.0	9 Feb 1989
Western Samoa	Second Telecommunications	7.4	1 Jun 1989
Pakistan	Third Telecommunications	115.0	16 Aug 1990
Cook Islands	Outer Island Communications	4.9	20 Sep 1990
Sri Lanka	Second Telecommunications	41.1	11 Oct 1990
Indonesia	Telecommunications	185.0	4 Feb 1992
Cook Islands	Emergency Telecommunications Rehabilitation	0.5	16 Jul 1992
Indonesia	Second Telecommunications	195.0	1 Jun 1993
Thailand	Second Rural Telecommunications	84.1	29 Jun 1993
PRC	Telecommunications	100.0	17 Aug 1993
Mongolia	Telecommunications	24.5	16 Jun 1994
PRC	Second Telecommunications	100.0	26 Sep 1995
Thailand	Third Rural Telecommunications	100.0	26 Nov 1996
India	Rural Telecommunications	113.0	28 Nov 1996
Maldives	Information Technology Development	9.5	17 Dec 2001
Total		1,556.5	

PRC = People's Republic of China.
Source: Asian Development Bank.

Table A4.2: Private Sector Telecommunication Projects
(As of 31 March 2006)

Country	Loan Project	Amount (\$ million)	Approval Date
Philippines	Philippine Long Distance Telephone Co.	24.0	29 Mar 1988
Bangladesh	Grameen Phone Telecommunications	16.7	20 Jan 1998
Bangladesh	Grameen Phone Telecommunications Expansion	20.0	26 Jan 2004
Afghanistan	Telecom Development Company Afghanistan B.V.	35.0	4 Nov 2004
	Total	95.7	

Source: Asian Development Bank.

Table A4.3: Telecommunications Sector Technical Assistance
(As of 31 March 2006)

Country	Loan Project	Amount (\$'000)	Approval Date
Thailand	Telecommunications	50	1 Mar 1984
Pakistan	Rural Telecommunications Strategy Study	100	28 Nov 1985
Sri Lanka	Telecommunications Development Study	350	21 Jun 1988
Philippines	Advisory Services for Telecommunications Sector	880	18 Jul 1988
India	Management Training for DOT	390	9 Feb 1989
India	Study of Industrial Engineering Standards and Costing Systems	270	9 Feb 1989
India	Study of DOT's Specifications for Cables	90	9 Feb 1989
Western Samoa	Institutional Strengthening of Posts and Telecommunications	460	1 Jun 1989
Regional	Regional Conference on Telecommunications	373	4 Jun 1990
Cook Islands	Institutional Strengthening of Cook Islands Post Office	275	20 Sep 1990
Sri Lanka	Institutional Strengthening of Sri Lanka Telecommunications	460	1 Jun 1989
Indonesia	Sumatra Telecommunications	600	24 Dec 1990
Indonesia	Second Telecommunications	600	6 Sep 1991
PRC	Integrated National Telecommunication Strategic Development Plan and East Indonesia Strategic Master Plan	1,500	4 Feb 1992
Mongolia	Telecommunications Development Plan	600	1 Apr 1992
PRC	Telecommunications	215	21 May 1992
Thailand	Telecommunications Restructuring and Privatization	600	29 Apr 1993
PRC	Telecommunications Management Support	598	17 Aug 1993
India	Rural Telecommunications	100	21 Sep 1993
Indonesia	Third Telecommunications	583	22 Feb 1994
PRC	Second Telecommunications	282	21 Apr 1994
Mongolia	Telecommunications Sector Reform	588	16 Jun 1994

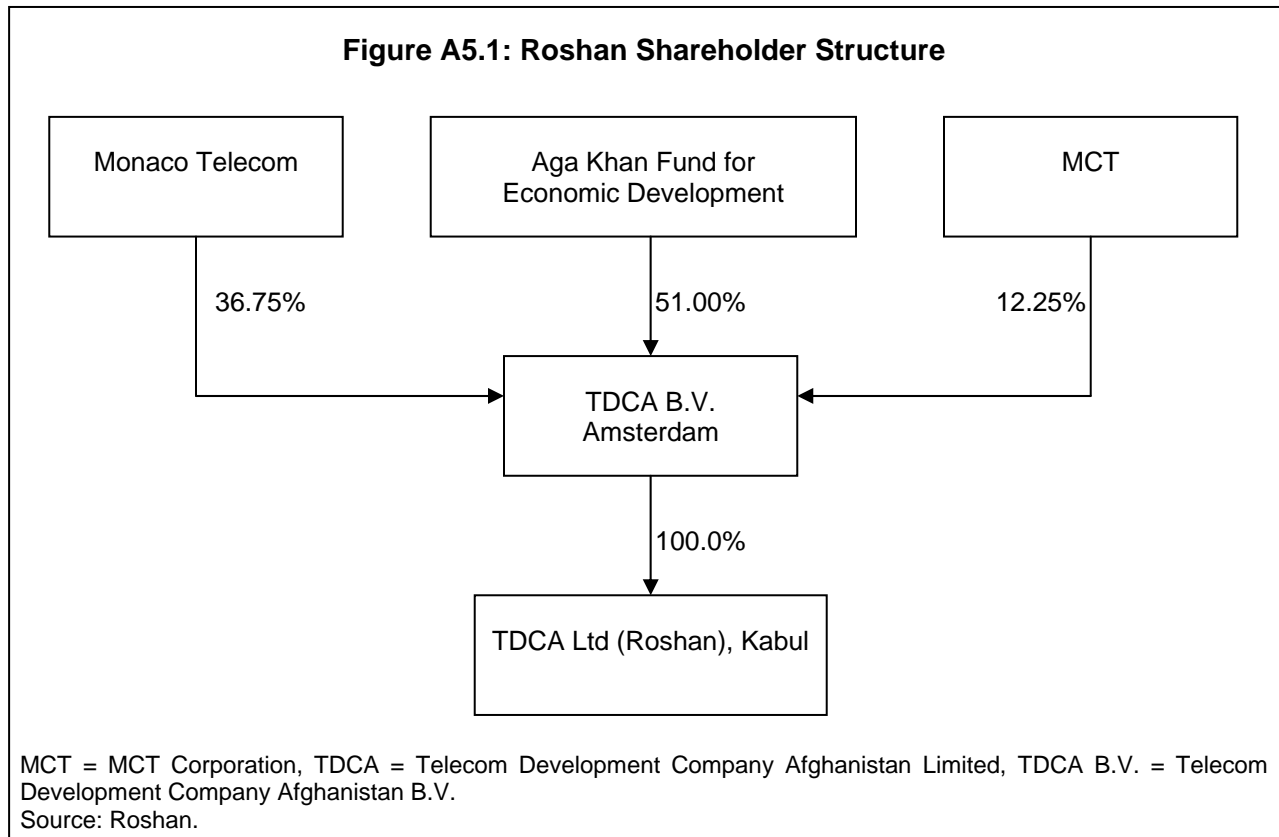
Country	Loan Project	Amount (\$'000)	Approval Date
Mongolia	Accounting and Management Information Systems and Tariff Reform	599	16 Jun 1994
Thailand	Socioeconomic Impact Study of Rural Telecommunications	200	22 Aug 1995
PRC	Institutional Strengthening of Provincial Telecommunications Administration	600	26 Sep 1995
GMS	Meeting of Telecommunications officials	30	2 Oct 1995
India	Institutional Support for Telecommunications Development	575	22 Jul 1996
Bangladesh	SSTA for an Advisor to MOPT	100	4 Apr 1997
GMS	East Loop Telecommunications Project	820	10 Apr 1997
REG	Third Meeting of the Subregional Telecommunications Forum	50	18 Jun 1997
Timor-Leste	Rehabilitation of the Telecommunications Sector	150	17 Apr 2000
REG	Backbone Telecommunications Network Phase I	150	17 May 2000
Timor-Leste	Rehabilitation of the Telecommunications Sector Phase II	150	26 Sep 2000
REG	ADB-ADBI Workshop on Information and Communications Technology Strategy for Developing Asia	50	27 Nov 2000
Maldives	Information Technology Development	150	19 Dec 2000
REG	Regional Round Table on Information and Communication Technology	90	21 Dec 2000
Pacific	Information and Communication Technology Assessment in the Pacific	300	18 Jul 2001
GMS	Telecommunications Sector Policy Formulation and Capacity Building	700	2 Nov 2001
Fiji Islands	Implementation of the Information and Communication Technology Strategy	150	28 Apr 2003
Pacific	E-rural Demonstration in the Pacific	230	15 Jul 2004
REG	South Asia Subregional Economic Cooperation Information and Communication Technology Development Master Plan	450	25 Feb 2005
	Total	15,508	

GMS = Greater Mekong Subregion, PRC = People's Republic of China, REG = Regional.
Source: Asian Development Bank.

SHAREHOLDER INFORMATION

A. Shareholding Structure

1. Figure A5.1 below illustrates Roshan's current shareholder structure. Originally, Alcatel had a 5% stake in Roshan; however, in July 2004 this was sold to Monaco Telecom and MCT.



B. Descriptions of the Shareholders

1. Aga Khan Fund for Economic Development

2. Aga Khan Fund for Economic Development (AKFED) is the economic development arm of the Aga Khan Development Network (AKDN), a group of development agencies seeking to improve opportunities and living conditions in specific regions of the developing world, especially Africa and Asia. AKDN, which has been supporting humanitarian assistance and rehabilitation in Afghanistan since 1996, works for the common good of all citizens, regardless of their gender, origin or religion. Its underlying impulse is the ethic of compassion for the vulnerable in society. Its programs in Afghanistan come under a comprehensive development agreement signed by the Aga Khan and President Hamid Karzai.

3. For more than 50 years, AKFED has made investments and operated companies in the developing nations of Africa, South Asia, and Central Asia. AKFED seeks to create profitable, sustainable enterprises through long-term investments that result in strong equity positions. This in turn allows AKFED to take a "hands-on" approach by providing managerial and technical

expertise. Profits generated by the Fund are reinvested in other economic development initiatives under the AKFED umbrella.

4. AKFED often works in collaboration with local and international development partners to create and operate companies that provide goods and services essential to economic development. These range from banking to electric power, agricultural processing, hotels, airlines and telecommunications. AKFED also works with governments to help promote the creation of enabling legal and fiscal structures that encourage the growth of the private sector.

5. At the invitation of several governments, AKFED has helped critical sectors make the transition to market economies through privatization. These include such as banking, power generation, tourism, manufacturing, and agriculture in countries as varied as Uganda, Tajikistan, Pakistan, and Afghanistan. AKFED's approach emphasizes the development of local human resources over time, including managerial, technical, marketing, and financial skills. Other characteristics of this approach include providing essential seed capital to launch projects in those sectors and countries where attracting investment is difficult. AKFED takes a long-term view in order to build viable, self-sustaining, and profitable companies. It also participates in the management of companies in which it invests with the aim of preparing companies for broader ownership by local interests.

a. Financial Services

6. To encourage the creation of strong and efficient capital markets, AKFED provides an institutional umbrella for banks, insurance groups, and property-owning and management companies in eastern Africa, Central Asia, and South Asia.

7. AKFED's investments include a controlling interest in Habib Bank Limited (HBL), Pakistan's largest private bank (acquired through a government privatization program in 2004) and the Development Credit Bank Limited (DCB) in India. AKFED is also the founder and lead shareholder in the Kyrgyz Investment and Credit Bank (KICB), which focuses on the corporate sector and on medium and long-term finance that will contribute to the growth of the banking industry and stimulate entrepreneurial activity. In Bangladesh, AKFED is the majority owner of a leading provider of corporate finance and lending services to major businesses and projects.

8. Its holdings in East Africa include the Diamond Trust Bank, which was founded in the 1930s in Kenya to help recycle local savings into loans for home building and small businesses. It now offers a range of retail banking products. The Jubilee Insurance Group provides insurance across the region. In Pakistan, New Jubilee Insurance and New Jubilee Life offer a range of products.

b. Tourism Development

9. AKFED's Tourism Promotion Services (TPS) seeks to develop tourism potential in selected areas in the developing world, particularly in underserved regions. It builds, rehabilitates, and manages hotels and lodges that contribute to economic growth and the overall investment climate in an environmentally and culturally sensitive manner.

10. AKFED owns and manages properties in Afghanistan, Kenya, Mozambique, Pakistan, Tajikistan, Tanzania, and Uganda, operating under the brand name Serena. Serena hotels and lodges contribute to the local economy through the training of skilled manpower, the reinvigoration of artisans and craft industries, and through sensitive conservation or

development of the surrounding area. This includes placing priority on the hiring and training of local residents for employment at all levels of the organisation.

11. TPS often seeks to develop properties in less-travelled areas that require accommodation of an international standard—accommodation that supports tourism and business development—but which often are ignored by commercial hotel chains.

12. At each hotel, the policy is to minimize the impact on the local environment while seeking to maximize socioeconomic benefits to the local economy. In Tanzania, for example, before the creation of new facilities in the country's national parks, four environmental impact studies were carried out. The Serena Hotel in Mombasa maintains a sanctuary for indigenous butterflies and also works with local residents on a program to protect sea turtle nesting sites. These measures have earned the Serena hotels numerous environmental awards.

c. Industry

13. AKFED has invested in and manages over 50 industrial project companies in Africa and Asia. In the early 1960s, a group of companies was set up under the corporate name Industrial Promotion Services (IPS). Each company was created to provide venture capital, technical assistance, and management support to encourage and expand private enterprise in countries of sub-Saharan Africa and South Asia. Growth, privatization and a reorientation away from import substitution and toward export promotion resulted in adjustments to IPS' approach. Expansion into areas such as agribusiness, packaging, and infrastructure in sub-Saharan Africa were accompanied by the need for new investments in the emerging economies of Central Asia in the 1990s and 2000s, in particular, in Tajikistan and Afghanistan. Today, IPS companies play a vital role in local and regional economies.

d. Food and Agroprocessing

14. One of IPS' core operational sectors, agroprocessing, includes companies that supply goods for local and export markets. They also play a significant role in supporting the rural economy. In Kenya, for example, Frigoken provides agricultural extension services to 25,000 Kenyan bean farmers. The beans are processed and exported to European markets. Loans are provided to the farmers by the nonprofit Aga Khan Agency for Microfinance to assist them with financial needs that arise before receiving harvest revenues.

15. In West Africa, AKFED supplies agricultural extension services to more than 45,000 cotton farmers, operates cotton ginneries, and exports finished products. Its social programs offer microfinance, education, health, and sanitation to the farmers.

16. In addition to promoting the employment of women, these companies have become national role models in matters of employee welfare, including the provision of child care and health care.

e. Infrastructure

17. AKFED works with governments, international corporations, international financial institutions, and funding agencies to create solutions to pressing infrastructure needs, including power generation, telecommunications and water supply services. AKFED's first investment in the power sector, the \$225 million Azito energy project in the Ivory Coast, was the largest private sector power plant in sub-Saharan Africa. It was followed by the Tsavo power plant in

Mombasa, Kenya's first privately financed "open-bid" project and the first such plant successfully constructed under an updated and more stringent environmental law.

18. AKFED is also working with partners to rehabilitate and expand a Soviet-era hydroelectric power plant that will boost the eastern province of Tajikistan's inadequate electricity supply, reduce deforestation, and contribute to the region's economic recovery. In Uganda, AKFED is leading the \$500-million, 220-megawatt Bujagali Hydro Power Project, to produce critically needed electricity for the country, and for neighbouring Kenya.

19. AKFED's initial involvement in building telecommunications infrastructure was in Indigo, a GSM mobile phone operation in Tajikistan. Subsequently AKFED was awarded Afghanistan's second GSM license and created Roshan which is today one of the largest employers in the country.

f. Media Services

20. The Nation Media Group, founded by the Aga Khan in 1960, has its origins in Kenya's Taifa and Nation newspapers, which were set up to provide independent voices during the years just before the country's independence. Majority owned and run by Kenyans, the Nation Media Group's operations include a growing number of English and Kiswahili national newspapers, a regional weekly, and radio and television stations. In recent years, the group has expanded its operations into Uganda and Tanzania.

g. Aviation Services

22. The aim of the aviation division is to maintain the critical aviation infrastructure in support of economic development. The division provides investment, management, and operational expertise and training. AKFED has taken a majority stake in Air Burkina, as part of a government privatization plan designed to ensure the long-term viability of the airline. In 2005, AKFED launched an airline in Mali to increase capacity in West Africa.

2. Monaco Telecom International

21. Monaco Telecom Group holds 36.75% of Roshan through its wholly owned subsidiary Monaco Telecom International (MTI).

22. Monaco Telecom Group was created in 1997 and is the incumbent operator for the Principality of Monaco. The group's predecessor was the principality's administrative service, the Office Monégasque des Télécommunications. Monaco Telecom has an exclusive licence to provide customers in Monaco with fixed telephony services, digital mobile telephony (GSM), public network interconnect services and a public payphone service; the group's exclusivity ends in 2023. Today, Monaco Telecom is engaged in an ongoing major capital expenditure program designed to ensure that its services remain competitive and that it can continue to meet all its customers' requirements. The focus within Monaco is on the quality of service while maintaining pricing parity with neighbouring countries.

23. On 18 June 2004, Cable & Wireless acquired 55% of Monaco Telecom from Vivendi Universal, for a total consideration of €162 million. Simultaneously with the acquisition, Cable & Wireless transferred legal ownership of 6% of the shares of Monaco Telecom to Compagnie Mone-gasque de Banque, an unrelated third party. Cable & Wireless contractually retained voting and economic rights in the shares as part of the arrangement. In addition, the 6% interest

is subject to certain put and call options that, together with the retained voting and economic rights, provide full management control of Monaco Telecom to Cable & Wireless.

24. Cable & Wireless has also entered into a shareholders' agreement with Monaco, which contains, among other provisions, a prohibition on either Cable & Wireless or the principality (subject to certain limited exceptions) selling their shares in Monaco Telecom for 5 years, mutual preemption rights on transfer of shares and certain other limited rights in favor of the principality. The principality has a put option entitling it to put its 45% shareholding in Monaco Telecom to Cable & Wireless at certain times after 1 January 2008. The exercise price under the put option is fair market value, taking into account the nature of the minority stake in Monaco Telecom.

25. During the 9.5 months following leading up to the year ending 31 March 2005, Monaco Telecom generated £100 million in revenues and £17 million in operating profit.

26. Monaco Telecom is developing its international activities in network management and satellite services. Through MTI, the group has operations in Afghanistan, Algeria, Kosovo and Tunisia. Monaco Telecom's CEO Denis Martin sits on the board of Roshan.

3. MCT Corporation

27. MCT Corporation (MCT) holds 12.25% of Roshan; MCT's president and CEO Richard Seney, sits on the board of Roshan.

28. MCT is a US-based company and a leading provider of mobile wireless telecommunications services in Central Asia and the Russian Federation. MCT has developed 29 ventures in the region since its formation over 10 years ago, and today it provides mobile and other services through eight ventures licensed to serve populations of 67 million people.

29. Arkhangelsk Mobile Networks began offering mobile services in the Arkhangelsk region in 1996, and provides coverage to the cities of Arkhangelsk (the oldest trade port in the Russian Federation), Severodvinsk (the center of nuclear shipbuilding), Novodvinsk (the industry leader of national pulp and paper production) and other cities in the region. Arkhangelsk's population is over 1 million. MCT offers services of voice mail, call forwarding, and direct connection with the services of the city.

30. Coscom was formed in 1996 to provide mobile service for Uzbekistan (population 24 million). Operations started in July 1997 in the capital city of Tashkent, becoming the first GSM operator in Central Asia. Service has since expanded to other major population centres, including Samarkand, Bukhara, Navoi, and Fergana. Coscom provides national and international automatic roaming, and other major value-added services supported by advanced digital networks.

31. Indigo-Tajikistan launched service in 2002 as the second GSM operator in the southern region of Tajikistan. Indigo-Tajikistan has the largest network coverage area in southern Tajikistan. In addition to the country's capital city of Dushanbe, Indigo provides coverage to major population centres such as Kurgan-Tube, Tursunzade, and Kulyab. Indigo-Tajikistan provides national and international automatic roaming.

32. Murmansk Mobile Network (MMC) was founded in February 1995, and provides mobile telecommunications services to the region of Murmansk. MMC is a major operator within the

Kola Peninsula (population over 1 million). MMC provides call forwarding and other major value-added services supported by advanced digital networks.

33. Novgorod Telecommunications started commercial operation of its mobile network in April 1998. MCT provides mobile service within the territory of the Novgorod region, including the region centre, Velikiy Novgorod; and the major regional centres, Staraia Russa, Chudovo, Valdai, and Krectsy. Novgorod Telecommunications in Velikiy Novgorod is the only mobile company in the Russian Federation providing prepaid services to roamers based on its in-house software.

34. Parma Mobile was founded in October 1995 to provide mobile telecommunications services within the territory of the Republic of Komi (population over 1 million). At present, CJSC Parma Mobile provides coverage of Syktyvkar, its suburbs, and also cities Ukhta and Sosnogorsk. Parma Mobile currently provides call forwarding and other major value-added services supported by advanced digital networks.

35. Somoncom was the first GSM operator to launch service in 1999 in the northern region of Tajikistan. Somoncom has the largest network coverage area in northern Tajikistan. In addition to the regional capital of Khujand, Somoncom provides coverage to major population centres such as Chakalovsk, Gafurov and Istaravshan. Somoncom currently provides national automatic roaming.

ROSHAN MANAGEMENT INFORMATION

A. Board of Directors

1. Denis Martin joined Monaco Telecom as its CEO in December 2005. Prior to this position, Mr. Martin was President of Cegetel, reporting to the Chairman of the SFR Cegetel Group, where he was in charge of the fixed-line telecom and internet provider business with €1.4bn turnover and 2,100 employees and 1.5 million customers. Previously, Mr. Martin has held Director of Finance positions with Schlumberger and Sedco-Forex. Mr. Martin has also worked as Senior IT auditor with Arthur Young in Paris.

2. Bernard Nihotte, since 2000, has headed Monaco Telecom International. Prior to joining Monaco Telecom, Mr. Nihotte was in charge of technical deployment in Finland of Standard Electric Puhelin (ITT Finland). Mr. Nihotte is a graduate of the Conservatoire National des Arts et Métiers and holds a professional engineering degree in telecommunications.

3. Mark Ellison was appointed CFO of Monaco Telecom in January 2005. After working with KPMG in London, New York and Paris, Mr. Ellison was CFO of several service and distribution companies. He was a partner of Ernst & Young Capital Markets in Paris from 2000 to 2003. Mr. Ellison is a graduate of Cambridge University and holds an MBA from INSEAD.

4. Daniel Thomas joined AKFED as Industrial Development Manager, IPS on 3 October 2001. He trained in Finance and Management, spent 12 years with Bull Group (IT solutions company) in various positions (from Internal Auditor to Chief Financial manager) followed by 5 years with Normandy Mining Group (Australian gold producer) as Business Analysis and Planning Manager and Chief Financial Officer.

5. Anwar Poonawala, Director, AKFED, has been associated with His Highness the Aga Khan's economic development network for over 30 years. He is an Executive Director of AKFED and holds directorships in many industrial and infrastructure companies and media companies in the developing world. Mr. Poonawala's responsibilities encompass:

- (i) Member of the Executive Committee of AKFED.
- (ii) Member of the Aga Khan Development Network Committee which co-ordinates and overviews His Highness the Aga Khan's development activities worldwide.

6. Christian Godde joined AKFED as Head of Industrial Development, in charge of the Industrial activities of AKFED, on 1 November 2002. Christian Godde, a Chemist by training, spent 27 years with Unilever in various technical positions (18 years from Development manager to Technical Director of a large Foods business in France, working in France and the Netherlands in oils and fats, dairy and bakery), followed by 9 years in General Management positions (notably as Chairman of Unilever's operations in Zaïre - foods, detergents, cosmetics, plantations, African prints - and Chairman of Astra-Calvé, a large foods business in France - oils and fats, cheese, mayonnaise and sauces, bakery products) and spent some time in the Russian Federation for an acquisition. He then joined Group Bolloré in 1997 as Managing Director of their Tobacco division, and then Chief Operating Officer of the transport/forwarding activities in francophone Africa.

7. Jean-Louis Vinciguerra is a graduate of the Institute of Political Studies in Paris and from the Harvard Business School (U.S.A.). During his career, he acquired extensive experience in managing industrial companies both in France and in the U.S.A., as well as in-depth knowledge

of the banking business in Europe and Asia. He began his career in 1971 with Pechiney, one of the world leaders in Aluminium and Packaging, where he was first Vice President of Finance, then Group Chief Financial Officer, and finally Head of the Packaging Division (located in Chicago, U.S.A.). After leaving Pechiney, he acquired banking experience as a senior partner of Rothschild and Co., then BZW (Barclays Group) and finally Indosuez as Head of the Banking Division for Asia-Pacific. In 1998, he joined France Telecom as Senior Executive Vice President and Chief Financial Officer. Since May 2003, Jean-Louis Vinciguerra is Senior Financial Adviser to AKFED.

8. Richard Seney has led MCT's activities since its inception in 1992. His operating experience in the mobile industry began with Charisma Communications in 1985. He served as Executive Vice President and Chief Financial Officer through the sale of its operations in 1986 and 1987. He founded MCTI together with Mr. DePriest in 1987, serving as Vice President and General Manager of its General Partner. His experience with MCTI included an array of high-growth companies in the telecommunications sector. He has served as Vice Chairman of ATEL's board of directors and as a director of other MCTI portfolio companies. Mr. Seney served in the Emerging Companies practice of Arthur Andersen (Washington DC office) from 1976 through 1985. He graduated from the University of Virginia in 1976. Jean-Louis Vinciguerra is a graduate of the Institute of Political Studies in Paris and from the Harvard Business School (U.S.A.). During his career, he acquired extensive experience in managing industrial companies both in France and in the U.S.A., as well as in-depth knowledge of the banking business in Europe and Asia. He began his career in 1971 with Pechiney, one of the world leaders in Aluminium and Packaging, where he was first Vice President of Finance, then Group Chief Financial Officer, and finally Head of the Packaging Division (located in Chicago, U.S.A.). After leaving Pechiney, he acquired banking experience as a senior partner of Rothschild and Co., then BZW (Barclays Group) and finally Indosuez as Head of the Banking Division for Asia-Pacific. In 1998, he joined France Telecom as Senior Executive Vice President and Chief Financial Officer. Since May 2003, Jean-Louis Vinciguerra is Senior Financial Adviser to AKFED.

B. Key Management Personnel

9. Karim Khoja – Chief Executive Officer – has served in senior management positions in national and multi-national telecommunications companies for over 15 years. He has extensive experience in nurturing start-up businesses from infancy through development, and has led several GSM start-up companies into becoming major market players as President and CEO including being the founding CEO of Mobilink (Pakistan), the Chairman and CEO of EXI Wireless Inc. and a management board member of COO Croatian Telecommunication. Mr. Khoja has also directed marketing and sales strategy for companies such as ERA GSM (Poland), Spectonics Microsystems Ltd., and RAM Mobile Data Ltd. Mr. Khoja's involvement in the telecommunications sector in Afghanistan began in May 2002 as a volunteer consultant to AKFED in an initiative to install the nationwide private communications infrastructure. In January 2003, Mr. Khoja was appointed as the Chief Executive Officer for the Telecom Development Company Afghanistan Ltd. (TDCA) t/a Roshan. Under his leadership, Roshan has grown to be Afghanistan's largest mobile provider in only one year of operation.

10. Brent Muckridge – Chief Operating Officer – draws from over 12 years of international financial and operational experience in the hi-tech industry. Mr. Muckridge was appointed as Chief Operating Officer for TDCA Ltd. in February 2004 and during the first 18 months of Roshan's operation has helped in transitioning Roshan's critical business processes to lead Roshan from a start-up company to a managed growth operation. Prior to that, he served as the

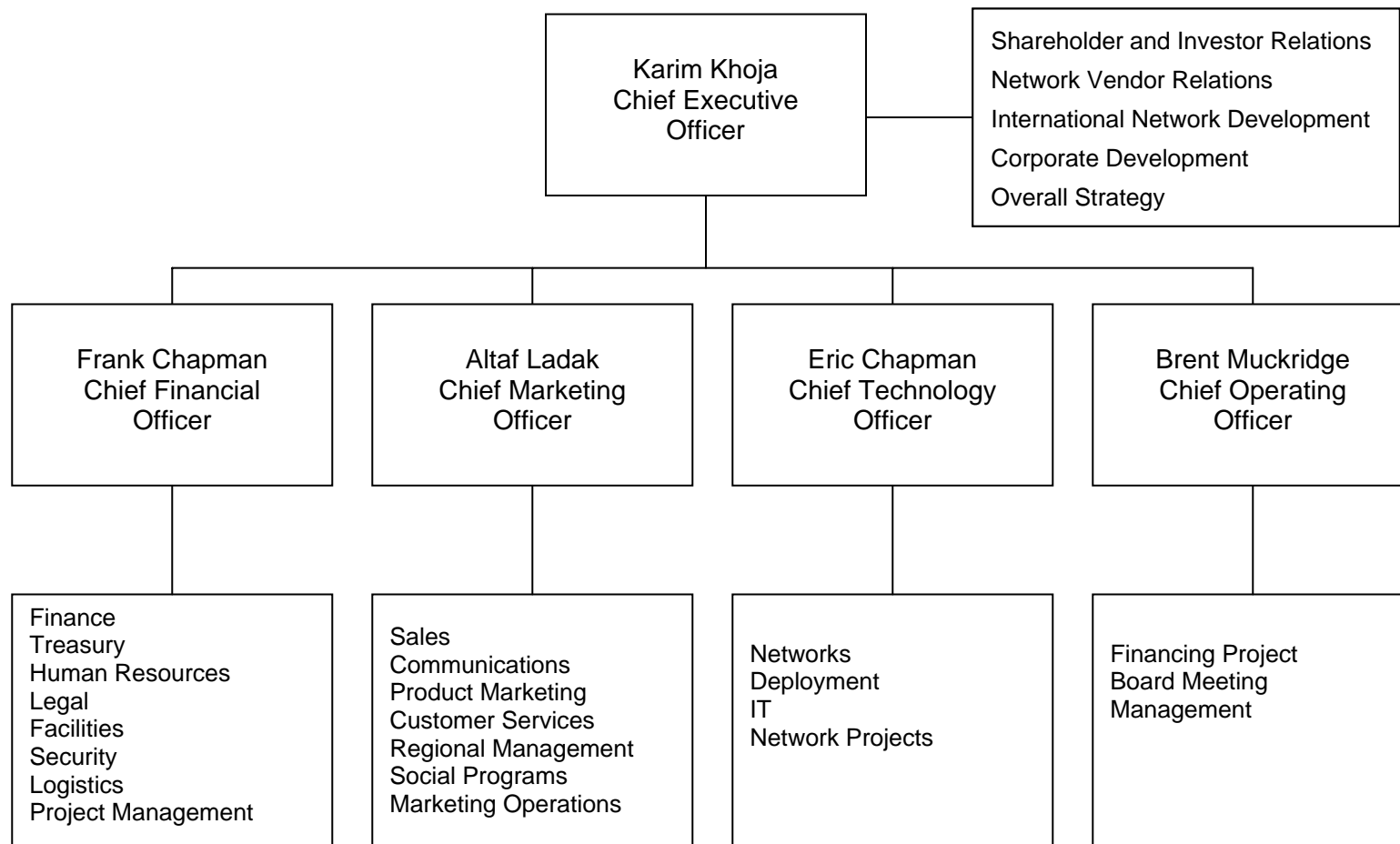
Chief Logistics Officer for Hrvatski Telekom (a Deutsche Telecom subsidiary), one of two GSM operators in Croatia, where he was instrumental in the development and restructuring of the logistical structure and operations of Roshan. In the last 6 years, Mr. Muckridge has led a number of companies through high yield bond offerings and senior debt financing, raising over \$1.2 billion for the companies involved.

11. Altaf Ladak – Chief Marketing Officer – has over 15 years of experience in international marketing and strategic development in the telecommunications industry. He has worked primarily in start-ups as well as for reorganizations for divisions of major international companies, and has been extensively involved in all areas of Marketing including branding, marketing communications, strategy, business development and Mr. Ladak's marketing strategies have played a key role in establishing Telcordia Technologies' international division in the EMEA region, developing a global Sales & Marketing team in one of the divisions in Alcatel, as well as helping to set up a Marketing team for RAM Mobile Data in the UK and Europe. Currently, Mr. Ladak's communications strategies have helped grow the TDCa Ltd. t/a Roshan subscriber base to over 500,000 in less than 2 years, making Roshan Afghanistan's largest mobile provider, as well as establishing the first brand in Afghanistan.

12. Eric Chapman – Chief Technology Officer – has over 25 years experience in managing construction projects having worked in leading international contracting companies (Bouygues, Sogea now Vinci) around the world in a variety of major overseas projects. His responsibilities grew from site manager on turnkey projects (such as hospitals, universities, housing, airport, industrial facilities, public buildings), to branch manager. In 1997 he joined the telecommunication world acquiring strong experience in start-up companies who have become significant players in their regions (Bouygues Telecom in eastern France, KenCell – part of Vivendi Telecom International in Kenya). Mr. Chapman joined TDCa Ltd. as Chief Technology Officer in March 2003. Under his leadership, the network has been rolled out in over 25 regional centers in Afghanistan with all necessary supporting infrastructures and facilities in a very difficult environment.

13. Frank Chapman A.C.A. – Chief Finance Officer – is a Chartered Accountant and joined Roshan in May 2005. He has a wealth of professional and commercial experience with 10 years in a variety of roles at Unisys followed by 13 years within BellSouth Corporation. Frank has also established his own consulting business working with a number of telecommunications clients. Prior to joining Roshan Frank was working on a project with Dolphin Telecom in the UK for 18 months where he Directed Customer Services and helped create and manage the national direct sales force. He was also interim Chief Financial Officer for Broadband Services International the European arm of the Denver Based cable services business for a period of 2 years. From 2000 to 2002 he was Finance Director and Company Secretary for Transcomm UK Ltd, the operating company of Transcomm plc, an AIM listed national wireless data network operator. His main rolls with BellSouth Corporation were Chief Financial Officer for RAM Mobile Data Ltd for 9 years and Finance Director and Company Secretary for Dataserv Ltd for 4 years, this was preceded by 10 years with Unisys, 3 years as Financial Controller and 4 years as Head of Management Information Services. Frank gained an Upper second class honours degree in Business Studies from Kingston University and is a member of the institute of Chartered Accountants.

Figure A6: Roshan Management Structure



Source: Roshan.

COMPETITOR INFORMATION

1. In addition to Roshan, the following are the main competitors in the industry:

A. Afghan Telecom

2. The Ministry of Communication's (MOC) fixed-line telecommunications operational arm, Afghan Telecom, was only separated from the ministry into an independent operating entity very recently. In May 2004, President Karzai signed a decree separating the regulatory and operational functions of the ministry, spinning off the provision of telecommunications services and network management into a wholly owned subsidiary, the National Telecoms Company of Afghanistan (Afghan Telecom). Similarly, the ministry has reoriented itself as a policy-making body.

3. On 17 August 2005, the presidential decree laying the foundation for the formation of Afghan Telecom was approved by the Ministry of Justice, and the operator was registered as a business with the Afghan Investment Support Agency (AISA); the ministerial cabinet subsequently gave its final approval. The MOC' long-term plan is to sell off stakes to private investors, both domestic and foreign, and to attract a strategic partner to manage the operator post-corporatization. Press reports suggest that the ministry has already been in discussions with Etisalat, the United Arab Emirates-owned operator.

4. Afghan Telecom has a presence in Kabul and all 33 provincial centres as well as 100 districts. Afghan Telecom operates a digital service mainly in Kabul, Herat, and Mazar-e-Sharif where national and international satellite links have been established. Kabul has installed a 12,000 fixed-line digital switch with 7,000 active lines. Herat has a 60,000 fixed-line digital system and Mazar-e-Sharif has a capacity for 4,000 lines. Afghan Telecom also operates an analogue network mainly in Kabul with an estimated 8,000 active lines although the switch has capacity for 15,000 lines; work is under way to convert these lines to digital. There is a VSAT network between Kabul and the four of the five "tier 1" cities, with work under way to expand VSAT connections to the other provincial capitals. The Government has expressed the hope that there will be 600,000 active subscriber lines within the next 18 months. In areas where no telephony services exist, Afghan Telecom plans to select local partners which will build and operate local networks on a build-operate-transfer (BOT) basis.

5. Pursuant to the MOC' telecommunications and internet policy of 2003, fixed-line telephony licensees were entitled to provide mobile services effective 9 January 2006. Afghan Telecom is the only operator positioned to benefit from this policy, particularly given the technically related procedures to transform Afghan Telecom into a prepaid mobile CDMA player from the fixed-wireless, limited mobility postpaid operation it is today. Similarly, albeit somewhat strategically less appealing, mobile licensees are entitled to offer fixed services effective the same date. This policy has been known to, and accepted by, the telecommunications industry since early 2005. Afghan Telecom has now started providing services and carries about 22m calls/month. Focusing on the Government and district communications networks, Afghan Telecom services are expected to reach every provincial and district capital within the next year.

B. Afghan Wireless Communications Company (AWCC)

6. AWCC is a joint venture between US-based Telephone Systems International (TSI) (as 80% shareholder) and the MOC (20%). AWCC was founded in 1999 and launched GSM

services in Kabul in April 2002¹ with four base stations, investing \$60 million in its network in that year, and achieving rapid subscriber growth in its first months of operation on the back of significant pent-up demand stemming from the lack of fixed-line infrastructure. Initially operating under an interim mobile services authorisation, AWCC was awarded a full 15-year GSM licence in July 2003.

7. AWCC's customer base is largely concentrated around Kabul and, to some extent, in the larger urban centres of Herat, Mazar-i-sharif, and Kandahar. By the end of 2005, AWCC's network provided services in 40 cities and towns across 19 of Afghanistan's 34 provinces, including coverage of the cities of Jalalabad, Kunduz, Baglan, Puli Kumri, Talaqan, Logar, Puli Aman, Bagram, Charikar, Jabal Saraj, and Serobir. AWCC introduced international roaming in 2004, and has expanded its offering to include 184 networks in 76 countries worldwide, as well as offering international SMS messaging. AWCC employs 1,720 employees, 905 of which are local Afghans.

C. Investcom Group (Investcom)

8. Established in 1982, Investcom is a leading international provider of mobile telecommunications services operating through a number of subsidiaries and joint ventures in the emerging markets of the Middle East and Africa, as well as in Europe. Incorporated in Dubai, Investcom operates GSM mobile telephony networks in eight countries: Benin, Cyprus, Ghana, Guinea Bissau, Liberia, Sudan, Syria, and Yemen, where it offers local and international voice and data, satellite, carrier and internet-related services. The total population under license coverage area is more than 147 million and as at September 2005 Investcom had more than 3.7 million subscribers, having achieved number-one position in most of its markets.

9. Investcom is majority-owned and -controlled by the Mikati family of Lebanon. On 7 October 2005, Investcom offered 23.7% of its shares on the London Stock Exchange and the Dubai International Financial Exchange. The offering valued the Investcom group at \$3.3 billion.

10. Investcom has a successful track record of earning significant returns in high-risk environments. During the first nine months of 2005 Investcom generated revenues of \$646 million and EBITDA of \$296 million, up from 46.3% and 55% respectively on the previous year.

11. In September 2005, Investcom was designated as the winner of the third license for the provision of GSM services within Afghanistan, for which it paid \$40.1 million. The license has a term of 15 years and is renewable for a further 10 years. The license also requires Investcom to provide 50% population coverage in Kabul within 6 months of license award and 80% population coverage in a specified list of major cities and towns within 12 months. It also prescribes a timetable for a minimum number of base stations to be deployed and operational. The prior consent of the MOC is required for any assignment of the license. Investcom will also have the right to own and operate an international gateway in Afghanistan.

12. Investcom is expected to launch in Q2 2006, using its existing Areeba brand name. It plans to build a nationwide mobile network that will provide mobile services throughout Afghanistan. It has already been announced that Investcom has been provided funding from the IFC; the project consists of financing the license fee, network build-out, operating losses and working capital needs of Investcom for 2006–2009. The total estimated project cost is \$130

¹ AWCC was granted the first operating license in 1999. This subsequently fell into abeyance and was then effectively renewed in 2001.

million, with the IFC having been asked to provide financing in the aggregate amount of \$45 million, which is expected to include equity and a senior loan.

GRAMEENPHONE'S VILLAGE PHONE¹

"People lack many things: jobs, shelter, food, health care, and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these other deprivations, and may indeed reduce the chances of finding remedies to them." – Kofi Annan, United Nations Secretary General²

A. What Is Village Phone?

1. Village Phone is a methodology that creates a profitable partnership and a channel to market to bring telecommunications services to the rural areas of a developing nation. It offers a framework to extend telecommunications service to the rural poor in countries where an investment has already been made in mobile phone infrastructure. Village Phone is based on a business model that is sustainable for all of the participants and enables the poorest of the poor to have access to valuable communication services. Through this telecommunications service, rural individuals can also access information that increases their productivity, earns better prices for their goods, and saves on the direct and opportunity costs of traveling.
2. By leapfrogging fixed infrastructure and leveraging existing wireless infrastructure, Village Phone offers a viable strategy for increasing teledensity in developing countries and helping the poor lift themselves out of poverty.

B. How Village Phone Works

3. Many rural villages have no telecommunications services, no public phone booths, no private subscriber fixed lines, and no individual who owns a mobile handset. People have no option but to travel to communicate. Studies have shown that there can be a cost to not making a phone call—up to eight times more expensive than the cost of the actual phone call. The rural poor cannot make telephone calls simply because there is no access, not because they cannot afford to or don't wish to.
4. The cost of developing and maintaining infrastructure to install telephones in rural areas is often prohibitive. Another barrier is the lack of a mechanism that allows telecommunications operators to interact with their potential customers, selling airtime and making financial transactions.
5. By their very nature, microfinance institutions (MFIs) have deep roots in rural communities. They are trusted institutions with detailed knowledge of the local communities and an existing infrastructure for regularly visiting these communities to transact financial services. These deep community links are essential for introducing new services and the potential contribution of MFIs to new business initiatives targeting rural communities is often undervalued. Here is a "channel to market" to bring telecommunications services to the rural poor.
6. The microfinance sector is historically missing from telecommunication operators' normal distribution chain. By using MFIs as a channel to market, the telecommunications industries in Bangladesh and Uganda were able to tap a market that was previously inaccessible because of the prohibitively high cost of developing and maintaining a channel to this enormous market.

¹ Excerpt from Grameen Technology Center. 2005. *VillagePhone Replication Manual*. Washington, DC.

² The US National Commission on Libraries and Information Science speech at Telecom 99 in Geneva, Switzerland, UN Secretary General Kofi Annan.

7. As a member of a MFI, a potential Village Phone operator uses a loan to purchase everything needed to start their business. The Village Phone starter kit costs about \$200–\$250 and includes a mobile phone, prepaid airtime card, external Yagi antenna, charging solution, signage, marketing collateral, and other materials necessary to get started. The starter kit is created by the Village Phone company, which establishes relationships with MFIs to bring this product to its customers. The Village Phone Company negotiates wholesale airtime rates from the telecommunications provider, who provides access to existing telecommunications infrastructure for the Village Phone operators. Individual villagers in rural areas can then visit their local Village Phone operator and make an affordable phone call.

8. With proceeds from the business, the Village Phone operator contributes to their loan repayment and also purchases additional prepaid airtime cards. The MFI earns money from the loan and also a percentage of the revenue from airtime sales. The telecommunications provider earns money through volume sales of airtime, and the Village Phone company earns enough money to continue to promote and expand the program. There are no subsidies in this model. It works because it is designed so that all parties in the partnership “win”.

Table A8: Village Phone Key Characteristics

Partner	Essential Service Provided	How They “Win”
Telecommunications Company	Communications infrastructure coverage to needed rural areas	New revenue generated from airtime sales from a previously inaccessible market
Microfinance Institution	Provide loans to village phone operators so they can purchase equipment to start a village phone business	Income from loans and airtime sales and a new product to market to clients
Village Phone Operator	Affordable telecommunications to members of their community	Profitable business which earns a steady income
Community Members	Customer base for village phone operators	Access to affordable telecommunications
Village Phone Company	Crafts and manages relationships, facilitates support, manages overall program	Long-term success of program, sustainable (profitable) operation

Source: GrameenPhone Limited.

INTERNATIONAL ROAMING

Roshan offers its roaming subscribers services in 59 countries worldwide, on 142 operator networks. These are listed in Table A9.

Table A9: Roshan Roaming Agreements

Country	Operator	Country	Operator	Country	Operator
Albania	Vodafone	India	Madhya Pradesh (Airtel)	Sri Lanka	Dialog Telecom Ltd
Albania	AMC	India	Maharashtra & Goa (Airtel)	Sweden	Telia Mobile AB
Algeria	Orascom DJEZZY	India	Mumbai (Airtel)	Sweden	Vodafone
Armenia	Karabakh Telecom	India	Punjab (Airtel)	Switzerland	Sunrise
Austria	Mobikom	India	Tamil Nadu (Airtel)	Switzerland	Swisscom
Austria	T-Mobile	India	Uttar Pradesh West (Airtel)	Switzerland	Orange
Azerbaijan	Azercell	India	Spice Telecom Punjab	Syria	Syriatel
Bahrain	MTC Vodafone	India	Fascel	Tajikistan	Indigo
Belarus	Mobile Telesystem (MTS)	India	Aircel Cellular	Tajikistan	Sonocom
Belarus	JV MDC	India	MTNL Mumbai	Tajikistan	Babilon Mobile
Belgium	Belgacom Mobile	India	MTNL Dehli	Tanzania	Celtel
Belgium	Mobistar	Indonesia	Telkomsel	Trinidad & Tobago	TSTT Trinidad
Bulgaria	Mobitel	Iran	TCI	Turkey	Turkcell
Canada	Microcell	Ireland	Vodafone	Turkey	TelSim
Canada	Rogers	Italy	Vodafone Omnitel	UAE	Etisalat
China	China Mobile	Italy	Telecom Italia Mobile(TIM)	UAE	Thuraya
Congo	Vodacom	Kazakhstan	K-cell	Ukraine	UMC
Croatia	T-Mobile	Latvia	LMT	US	AT&T Wireless
Croatia	VIPnet d.o.o	Liechtenstein	Orange	US	T-Mobile
Czech Republic	T-Mobile	Lithuania	Omnitel	US	T-Mobile
Czech Republic	Eurotel Praha	Mexico	TELCEL	US	T-Mobile
Denmark	TeleDenmark (TDC)	Monaco	Monaco Telecom (Kosovo)	US	T-Mobile
Denmark	Telia A/S	Monaco	Monaco Telecom 3G	US	T-Mobile
England	Vodafone	Montenegro / Yugoslavia	Monet	US	T-Mobile
England	O2	Morocco	Medi Telecom	US	T-Mobile
Finland	Sonera Corporation	Norway	Netcom GSM AS	US	T-Mobile
Finland	Elisa Matkapuhelinpalvelut FINRL	Norway	Telenor	US	T-Mobile Inc. AL

Country	Operator	Country	Operator	Country	Operator
France	Elisa Matkapuhelinpalvelut FINES	Oman	Nawras Sultanate	US	T-Mobile Inc. FL
France	Orange	Pakistan	Mobilink	US	T-Mobile Inc. GA
France	SFR	Pakistan	Pak Telecom (Ufone)	US	T-Mobile Inc.GA
Germany	Bouygues Telecom	Pakistan	Paktel	US	T-Mobile Inc.HI
Germany	E-plus	Pakistan	Warid Telecom	US	T-Mobile Inc.IA
Germany	O2	Pakistan	Telenor	US	T-Mobile Inc.NM
Greece	Vodafone D2 GmbH	Philippines	Globe Telecom	US	T-Mobile Inc.NY
Hungary	TIM Hellas	Poland	Polkomtel Plus GSM	US	T-Mobile Inc.OK
Iceland	Westel Mobile Ltd	Poland	ERA GSM Poland	US	T-Mobile Inc.OR
India	IMC	Portugal	Vodafone	US	T-Mobile Inc.UT
India	Hutchison Essar	Romania	Cosmote	US	Cingular Wireless (East)
India	Hutchison	Russian Federation	MTS	US	Cingular Wireless (Genises)
India	Andhra Pradesh (Airtel)	Russian Federation	ZOA Smart	US	Cingular Wireless (Genises)
India	Chennai (Airtel)	Russian Federation	Megafone	US	Cingular Wireless (Genises)
India	Delhi (Airtel)	Russian Federation	Kb Impuls	US	Cingular Wireless (Genises)
India	Gujrat (Airtel)	Saudi Arabia	Mobily Etihad Etisalat	US	Cingular Wireless (Genises)
India	Haryana (Airtel)	Singapore	Singtel	US	Cingular Wireless (West)
India	Himachal Pradesh (Airtel)	Spain	Telefonica/Movistar	Uzbekistan	Coscom
India	Kerala (Airtel)	Spain	Amena Retevision Movil	Uzbekistan	Uzdunrobita
	Kolkata (Airtel)	Spain	Vodafone		

Source: Roshan.