

Final Report

Main Report

**SPECIALISED POLICY ADVICE
(PS-2)**

for

His Majesty's Government

**Ministry of
Information and Communication**

Nepal

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FINAL REPORT**STRUCTURE OF REPORT**

The report of project Specialised Policy Advice (PS - 2) consists of four volumes:

❖ **Main Report**

- Annex Draft National Telecommunications Policy
- Annex Explanatory Document to Policy

❖ **ICT Report, Information and Communications Technologies in Rural Nepal - enhancing access and services delivery.**

The main author of this volume is Ms. Claire Milne, Antelope Consulting, cbm@antelope.org.uk, www.antelope.org.uk.

❖ **Legal Report**

- Legal assessment of the current regulatory regime
- Draft short term amendments to legislation

The main author of this volume is Mr. Simon Topping, simon.topping@twobirds.com, www.twobirds.com.

❖ **Annexes Report**

- Annexes (working papers on selected topics, to be used in implementation of the Policy)

The report is structured to provide shorter specialised reports for those whose interest is only part of the scope of the entire project.

The Main Report includes the high level outcome of the Project, including the draft National Telecommunications Policy. The Policy includes implementation strategies and an annex with timing of actions. The Explanatory Document includes the background for the Policy.

The Information and Communications Technologies (ICT) volume is the outcome of two separate tasks in the TOR, addressing introduction and use of ICTs in rural Nepal. Implementation of the ICT proposals is less clear-cut than for the policy proposals, and requires further study.

The Legal report includes a legal assessment of the proposed amendments to the legislation, Act and regulation.

The Annexes Report includes a collection of separate discussion documents that were developed during the work in co-operation with the Policy Team. The purpose of the working papers was to work out various key policy topics with the Policy Team and in general the MOIC and the NTA. The working papers are essential for implementation of detailed strategies, to be used by MOIC and NTA staff and subsequent consultants.

FINAL REPORT**EXECUTIVE SUMMARY**

This report is the Final Report of the consultancy project *Specialised Policy Advice* for the Ministry of Information and Communications, Nepal.

During the period since the enactment of the Telecommunications Act, 1997, telecommunications in Nepal has developed, but mainly fixed telecommunications in the capital. Many other countries have developed on a broader front geographically and in terms of service variety. Nepal lags increasingly behind other countries, and its ranking in Asia for total telephone connections (fixed + mobile) has dropped from 8th position from the low end in 1991 to 5th position in 2001. Nepal was still ahead of some 20 countries in Africa in 2001.

Nepal Telecommunications Corporation (NTC) is still the only major operator. Nepal Telecommunications Authority, NTA, has licensed tens of small operators. NTA has also attempted to license major operators, but most of the attempts have failed. A Wireless Local Loop operator started operations in September 2003. A tender is on-going for licensing a rural operator in the Eastern Development Area. Two tenders have been run for one additional mobile operator, but no licence has been issued so far.

The various policies for rural access appear to be a failure. E.g. the requirement for investment in rural areas is 15 % of total investments, whereas the investment required for meeting demand may be in the order of 50 - 80 % of total investments. Two lines per VDC are not sufficient, the estimated demand is 50 - 100 lines per average VDC.

The main services to be improved are mobile and rural. Also international and corporate services are needed. The main means for success elsewhere has been licensing of several new operators, rather than only one additional operator as in Nepal. Past selection of major licensees has been based on maximum licence fee, whereas this project recommends selection of operators based on largest coverage.

The project has developed a draft National Telecommunications Policy, which addresses all the above issues. The Policy aims at a major improvement to provision of telecommunications services in Nepal, in particular in rural areas. Assuming that the rural population would spend 2% of consumption on telecommunications, the demand for telecommunications services in rural areas is estimated at Rs. 4.7 billion at the level of year 2000, most of which is not satisfied. For comparison: the gross revenue of NTC in 2003 is of the order of Rs. 6.4 billion. If even Rs. 3 billion of rural demand were met, the total number of rural telephone connections (fixed and mobile) would be of the order of 300 000 (three lakh), assuming an average annual telephone bill of Rs. 10,000. This corresponds to an average of 75 telephone connections per average VDC, not a mere two.

The implementation strategy of the draft Policy is strongly focussed on coverage and service provision, designed with four steps:

- existing operators extend coverage and continue service provision;
- several new mobile operators will be selected using competitive tenders based on maximum rural coverage;

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- the Eastern Development Region will receive service through the Least Subsidy Tender that was issued in year 2003; and
- remaining unserved and underserved areas will receive service through Least Subsidy Tenders, to be financed from the Rural Telecommunications Development Fund.

The Policy and its implementation strategy, further detailed in the Annexes Report of this project, include a detailed strategy for full opening of the sector as already envisaged in the 1999 policy. The concept is named Open Licensing, and includes a transition strategy for existing licensees to convert to the new regime.

The Policy also addresses ICTs, differentiating between ICTs for the majority of rural end-users, living in a predominantly oral society, and ICTs for rural development professionals, including HMG as a whole, donors and NGOs. We expect that the proposed approach will lead in the next five years to a situation in which:

- Almost everybody in Nepal can listen to the radio, watch television and make and receive phonecalls (or text messages) on a daily basis;
- Most people who are sufficiently educated to use computers and the Internet themselves will be able to do so by travelling to a town which they have other reasons to visit (say, on a weekly basis);
- All District Headquarter towns, and in more advanced Districts several towns, will have multipurpose community telecentres where qualified staff will help anyone who needs help to use a computer or the Internet; and
- All agencies of government with responsibilities for service delivery to rural areas will be in a position to take advantage of these new access possibilities. They will use the networks to communicate with their own staff and with the public. They will be producing appropriate content to support service delivery, mainly for broadcasting but also, increasingly, for computer and Internet distribution.

Successful implementation of the draft Policy requires the MOIC and the NTA to be capable, which in practice means that they need more support during the crucial next few years. Part of the past policy failures appears to be due to lack of information on world-wide trends and good examples.

Implementation of the draft Policy needs legal amendments. The project also drafted urgent changes to the telecommunications legislation. The Policy is expected to require revisions at least every three years, legislation normally needs an update almost every year, and a full revision about every five years.

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FINAL REPORT**ABBREVIATIONS**

ADB	Asian Development Bank
ADSL	Asymmetric Digital Subscriber Line
ARPU	Average Revenue per User
BOI	Board of Investment
BTO	Build Transfer Operate
CBO	Community Based Organisation
CDMA	Code Division Multiple Access, mobile technology
DFID	Department for International Development (United Kingdom)
DIDC	District Information and Documentation Centre
GATS	General Agreement on Trade in Services
GDP	Gross Domestic Product
GIS	Geographic Information System
GNP	Gross National Product
GSM	Global System for Mobile Communication, mobile technology & service concept
HMG	His Majesty's Government of Nepal
IDA	International Development Association
ICT	Information and Communication Technologies
ICIMOD	International Centre for Integrated Mountain Development
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunication Union
LDC	Least Developed Country
LGP	Local Governance Programme
LOI	Letter of Intent
MBO	Management Buy-Out
MCT	Multipurpose Community Telecentre
MOF	Ministry of Finance
MOIC	Ministry of Information and Communication
MOLD	Ministry of Local Development
MOST	Ministry of Science and Technology
MSI	Media Services International
NGO	Non-Government Organisation
NITC	National Information Technology Centre
NTA	Nepal Telecommunications Authority
NTC	Nepal Telecommunications Corporation
OCID	Overall Composite Index of Development for Districts
OECD	Organisation for Economic Co-operation and Development
PABX	Private Automatic Branch Exchange
PDDP	Participatory District Development Programme
RIO	Reference Interconnection Offer
RoW	Rights of Way
RUPP	Rural-Urban Partnership Programme
SAPAP	South Asia Poverty Alleviation Programme
SIM	Subscriber Identity Module
SLT	Sri Lanka Telecom
SMS	Short Message Service, text messages in mobile telephony
TOR	Terms of Reference

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TSRP	Telecommunications Sector Reform Programme
UMTS	Universal Mobile Telecommunications System
UNDP	United Nations Development Programme
UPS	Uninterrupted Power Supply
USD, US\$	Dollar of the United States of America
UTL	United Telecom Ltd.
VAT	Value Added Tax
VCR	Video Cassette Recorder
VDC	Village Development Committee
VSAT	Very Small Aperture Terminal (satellite terminal)
WLL	Wireless Local Loop
WTO	World Trade Organisation
xDSL	Digital Subscriber Line of any technology

FINAL REPORT**KEY TERMS**

Broadband	Data transmission at a speed about sufficient to transmit slow video, usually implemented using the fixed telephone network (ADSL), cable television networks, or wireless connections to users
Commercialisation	Conversion of a government owned entity towards more commercial ways to operate, usually more customer oriented
Corporate services	Generic name for telecom services that companies, corporations and government entities etc. use, such as data transmission, other data services, leased lines, virtual networks, video transmission, etc.
Dual band spectrum	Radio spectrum from two different bands assigned to mobile operator, e.g. GSM 900 and GSM 1800
Dual licensing regime	Licensing regime with two parallel types of licences, such as new and old, during a transitional period
Individual Licence	A licence that is issued based upon a tender for spectrum based telecommunications services from year 2004 onwards
Interconnection	Connection of telecommunications networks to carry calls etc. from one network to another, including technical, financial, administrative and other required arrangements
Least subsidy tendering	Tendering for arranging defined services in a defined area, which is not served on a commercial basis, based on the lowest (usually one time) subsidy that an applicant offers
Liberalisation	Allowing more operators in the market, often transition from monopoly to competition
Licensing	The process of issuing licences and authorisations
Open and Technology Neutral Licensing, or Open Licensing	The procedure of issuing Standard Licences and Individual Licences
Ownership Tax	A tax (Rs 1500) levied on every new telephone user
Price elasticity	Relation between price and demand, lower prices <-> higher demand
Privatisation	The procedure when ownership of a government owned entity is sold to the private sector, either partly or fully
Receiving Party Pays	The principle that the receiver of a (mobile) telephone call pays for receiving the call

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Rights of Way, Right to Use Land	The rights of an operator to locate network components on public ground (streets, roads, etc.), based on telecoms legislation
Royalty	A tax (4 %, or fixed in a licence as an outcome of a tender) imposed on telecommunications user bills in addition to operator charges, but before imposing VAT
Service Charge	A tax (15 %) imposed on telecommunications user bills in addition to operator charges, but before imposing VAT
Standard Licence	Term used in this project for a licence that is issued to any applicant meeting minimum criteria, for operation of telecommunications services from year 2004 onwards
Technology Neutral	The principle that licences, taxes, rules and regulations etc. are the same independent of technology, also that operators may use any technology
Telephone penetration	Average number of telephone connections per 100 inhabitants. The ITU uses the term <i>teledensity</i>
Universal Access	All inhabitants in a country have access to a public telephone (relevant for developing countries)
Universal Service	All inhabitants in a country have the right to obtain a telephone to his / her home at an affordable price (not realistic in developing countries)

FINAL REPORT**1. INTRODUCTION**

This report is the Final Report of the consultancy project *Specialised Policy Advice (PS-2)* for the Ministry of Information and Communications (MOIC), Nepal. The project is part of the overall Telecommunications Sector Reform Project (TSRP), financed by The World Bank. The main counterpart has been Mr. Ramesh Kumar Adhikari, Under Secretary, Project Co-ordinator, MOIC. The Terms of Reference are included in the Annexes. The Terms of Reference include the main project, an additional task on taxation, and an additional task on amendment of legislation.

The Consultant team consisted of Mr. Arno Wirzenius, Teleplanning A. Wirzenius Ltd., Finland, as team leader, and team members Mr. Gajendra Singh Bohra, Nepal; Mr. Ram Kumar Shrestha, Nepal; Ms. Claire Milne, Antelope Consulting, UK; Mr. Simon Topping, Bird&Bird, UK; and Mr. Kari Ojala, Ministry of Transport and Communications, Finland.

The main part of the project was three field missions, six, seven and two weeks, and in addition homework.

The outcome of the first mission was a range of status findings, analysis of various policy topics, practical proposals for improving the situation, and an action plan for implementation. The main outcome of the second mission was a draft National Telecommunications Policy and a draft Final Report. The Final Report and the additional legal work were finalised during the last two-week mission.

FINAL REPORT**2. ACKNOWLEDGEMENTS**

The Consultants wish to express their sincere thanks for the strong support that they have received from the Nepalese counterparts, in particular the MOIC and the NTA, at all levels. The level of co-operation, understanding and support has been exceptionally strong, making it possible to advance quickly, and discuss practical proposals at an early stage. A tangible outcome of this co-operation was the workshop, where stakeholders vividly discussed various policy measures and alternatives in a constructive manner. On the other hand, the support created additional pressure on the Consultants to deliver results.

The Consultants also wish to express their appreciation of the support and co-operation that they have received from World Bank staff, working on the project in close co-operation with MOIC and NTA officials.

The Consultants also wish to thank the authors of the TOR for requiring a focus on transfer of knowledge and consensus building. This feature was taken seriously and was an important cornerstone for the success of the project.

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3. MAJOR FINDINGS AND ISSUES

3.1 International comparison

The annex *Status of telecoms in Nepal*, with international comparisons with a selection of relevant countries in Asia, shows that Nepal is one of the neighbouring countries in Asia which have neglected development of telecommunications. The clear forerunner is China.¹

China's GDP in 2001 was 3.6 times the GDP of Nepal. China was ahead of Nepal in penetration (connections per 100 persons) in all sectors compared: 11 times as many fixed telephone lines, 50+ times as many fixed telephone lines in rural areas, 150 times as many mobile connections, 10 times as many Internet users, 43 times as many TV sets. See Figure 1. A comparison of telephone penetration related to GDP is shown in Figure 2.

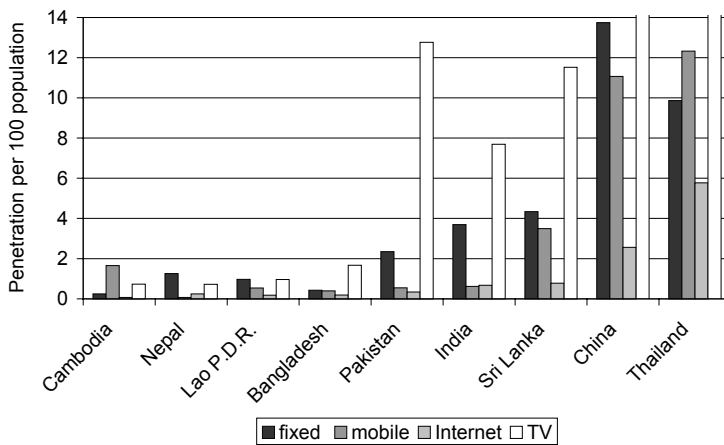


Figure 1. Penetration of main communications services in a selection of Asian countries in 2000 or 2001. Source: ITU.

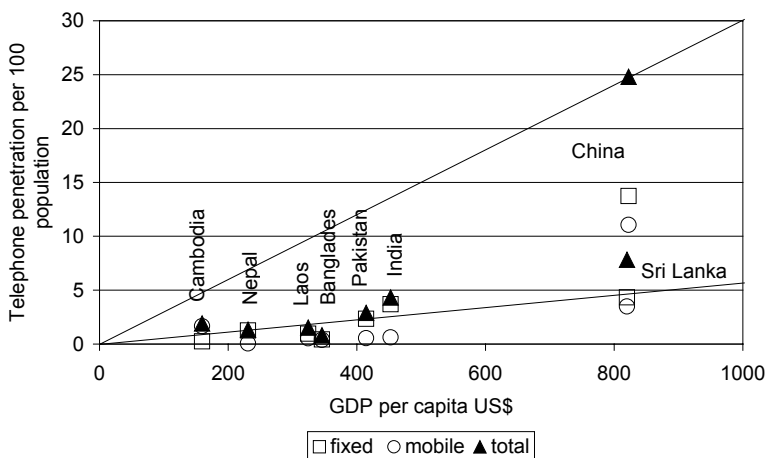


Figure 2. Comparison of telephone penetration in 2000 or 2001. Source: ITU.

¹ Most data is from ITU statistics, which is continuously updated, changing slightly from time to time.

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In order to equal China even after taking into account the difference in GDP, Nepal should have 5.6 times as many total telephone connections (fixed + mobile) as it had in 2002 (up from 4.7 times in 2001).

Cambodia, poorer than Nepal, with a population half that of Nepal, had about 0.4 million mobile connections early 2003, roughly 30 times as high mobile penetration as Nepal. For fixed lines the penetration is the opposite, as Cambodia still runs fixed telephony as a ministerial department.

Nepal has an exceptionally large imbalance in urban / rural service provision of fixed lines. With a mere 3.3 % of the population in the largest city, the portion of fixed lines in the largest city varies from 84 % (ITU data) to about half (Nepalese opinion). The figures indicate a serious neglect of services outside the capital region, alone likely to hamper any economic development of rural areas, which subsequently results in migration of population to the capital. See Figure 3.

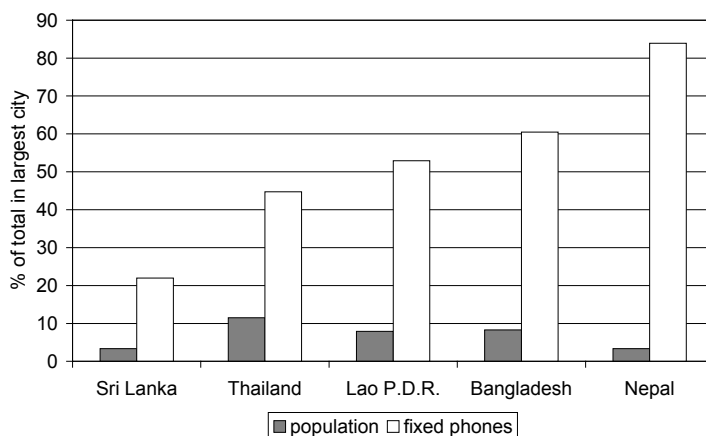


Figure 3. Concentration of population and fixed lines to the capital in 2000 or 2001. Source: ITU.

In 2001 the average LDC (Least Developed Country) had an equal number of fixed and mobile connections (source ITU). 24 LDCs had more mobile than fixed connections. The preferred telephone for the poor was mobile pre-paid, even if the call charges were higher. The ITU states that *there is no longer any excuse [not to develop the mobile sector by introducing competition]. All it takes is the political will to make it happen.* Nepal's mobile telecommunications can be classified as a failure. Nepal should have had several hundred thousand mobile users by year 2001, but it had a mere 17,000. Coverage is still only a handful of cities, while many other countries have large rural coverage.

A comparison of development in India and Sri Lanka shows that Nepal clearly lags behind both countries in fixed services. Nepal had a virtually non-existent mobile service compared to these two, even if neither is a forerunner.

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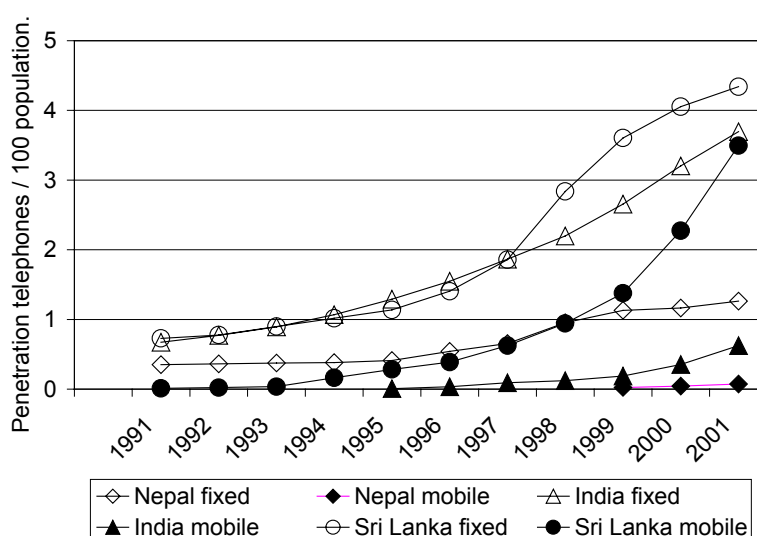


Figure 4. Development of telecommunications penetration in Nepal, India and Sri Lanka. Source: ITU.

Nepal's ranking in terms of total telephone penetration in the whole of Asia has dropped from position 8 from the low end in 1991 to position 5 from the low end in 2001. Nepal was ahead of Bangladesh, Bhutan, Myanmar and Afghanistan only. In ten years Vietnam, Cambodia and Laos have left Nepal behind. The main reason is that Nepal has neglected mobile as well as rural telecommunications.

The present total telecommunications revenue in Nepal is about 1.4 % of GDP. The average level for low income countries is 1.6 %, but most countries have severe undersupply and users cannot spend on telecommunications as it is not available. Many countries reach the level of 4 % when supply is improved. This means that the Nepalese telecommunications sector revenue could easily and quickly double, perhaps even triple, if only service supply is allowed to improve by licensing several additional major operators.

Mobile - prepaid - is emerging as the preferred telecommunications solution for the poor, not only in low income countries but also in higher income countries. This has happened even if many policies and regulatory choices have been pro-fixed rather than technology neutral. NTC has introduced pre-paid only in year 2003. Even if pre-paid mobile services in Nepal work only in a few cities, it confirms the international trend: 17,000 new users in 10 days in Nepal. In early November 2003 Nepal had about 95,000 mobile users, an increase 3.5 times in only 10 months. During the time of implementation of this project, Nepal has started on the fast growth track in mobile communications, even if the coverage still is very limited.

Interviews with business users indicate that Nepalese business users do not get the services that they need and are willing to pay for. Corporate services include leased lines, various data communications services (e.g. interconnection of data networks), broadband Internet access, etc. Lack of telecommunications is likely to hamper development of Nepalese business, in particular the export business.

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Key findings

The main finding of the international comparison is that Nepal has developed its fixed telecommunications services in Kathmandu (even if significant waiting lists exist), but other major services have not been developed, and rural areas have been neglected.

The two main areas to develop are country-wide mobile service, and all rural services, fixed and mobile. The two main areas can be combined when tendering for new mobile operators if selection of operators is done based on maximum rural coverage.

The main reasons for the slow development appear to be the restrictive licensing policy, limiting the number of granted major licences, granting exclusivity, and restricting the allowed services. These reasons are the same as has been found in most countries around the world, independent of level of income. Efforts to invite new operators should not use exclusivity or limitation of licences as a means.

3.2 Act of 1997, Policy of 1999

The Telecommunications Act of 1997 was modern at the time, reflecting the main trends at the time of drafting the Act. The National Telecommunications Policy of 1999 reflected the Act.

The Act and the Policy are based on the concept that the number of operators should be restricted, even more restricted than technical restrictions for spectrum etc., and that a limited time monopoly or limited competition is a good solution. Restriction of number of operators has been an unsuccessful concept elsewhere, e.g. in India, and has been abandoned.

Only minor services have licensed without restriction on number of licences, on a first-come-first-served basis. Provision of these minor services has improved considerably, in particular Internet, also VSAT. Paging operators seem to be closing, because mobile text messages take over. It is inevitable that some technologies and services disappear. Fax and telex are also disappearing quickly, as e-mail takes over.

Licensing of minor services is still based on partial discretion, the NTA has the right to refuse licences or delay decisions. Discussions with stakeholders indicate that discretion is not suitable for Nepal, it brings no value.

Selection of operators for licences with restricted numbers (mobile and WLL) has been based on maximum licence fee. The maximum fee concept was originally developed for industrialised countries, and has been a major concept around the world, but has also resulted in a number of failures. Clear indications are that the concept is not suitable for Nepal, as most tenders have failed to produce any successful operator. Because service provision and coverage are the main concern, also selection of operators should be based on service provision and coverage. *You get what you ask for.*

Several tenders for major licences (mobile, WLL, least subsidy tender) were unsuccessful, partly for these reasons, partly because of bad luck, such as the dot-com boom in 1999 -

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2000, and the European 3G spectrum auctions in 2000, coinciding with the Nepalese tenders. Finally one tender was successful in June 2001, and United Telecom Limited started operations in September 2003, after a delay of over two years. At the time of writing this report (October 2003), the second least subsidy tender for the Eastern Development Region is on-going. Until that time provision of all major services (fixed telephony, mobile telephony, and corporate services) have relied solely on NTC.

One of the common features in Nepalese tenders for major licences has been the aim of licensing only one new operator. If the selection fails, and the selected operator withdraws, the outcome is nil. Had several operators been selected, the outcome would have been at least one new operator, even if others withdrew. Also start of operation is usually much faster if several operators compete for being the first in the market. One single licence gives the opportunity for the operator to treat the licence like an investment in land property: may be used in due time, no need to start operation immediately. The purpose of issuing a licence is to get services without delay.

All present licences (except NTC) are restricted to one or a few defined services and technologies. Thus any operator wishing to utilise new (unlicensed) technologies or offer other services must obtain a new licence or an amendment of the existing licence, usually requiring the entire process of licensing. Some serious disputes have taken place, notably because some Internet cafés have offered Internet telephony at very low rates compared to NTC rates. Restrictions regarding technology and services in licences have not improved service provision, but prevented Nepalese users from benefiting from new and cheaper technologies and services. The restrictions are against healthy development, therefore restrictions on technology and offered services should be removed from licences.

All licences are based on the same concept of long and detailed licences. Detailed licences were originally created for a few major operators, but have been applied world-wide also when issuing licences to many operators (no restriction in number of licences), with almost the same contents in each licence. Such licences should not be long and detailed. They can be compared to driving licences. Most terms and conditions should be included in common regulations, "traffic rules for driving licences". A simplified licensing regime is required.

3.3 Rural policies

Present penetration of fixed telephones is high in urban areas, 16 lines / 100 inhabitants, but very low in rural areas, 0.14 lines per 100 inhabitants². The difference shows that rural services are seriously neglected. When some 83 % of the population live in rural areas³, the neglect is serious.

Based on the rural consumption survey, a conservative estimate for demand for telecommunications in rural areas is some Rs. 4.7 billion, roughly equal to three quarters of the revenue of NTC in 2003. Virtually all of this demand is not met. Households that could afford an own phone (10 % of households) cater for roughly 40 % of the demand, while 60 % is for shared phones (90 % of households). This means that more than half of the rural

² Source: NTC Management Information System March 2003.

³ The Population Census of 2001 states that the total population of Nepal is 23.2 million, and the Household Consumption Survey of Rural Nepal 2000 / 2001 states that the rural population is 19.2 million, 83 %.

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phones should be shared (100,000+), a few Public Call Offices are not sufficient. Nepal needs operators with the will and skill to serve also the 90 % of the population using shared phones, with efficient resale of calls, including incoming calls.

An average telephone user bill per year may be of the order of Rs. 20,000, and for pre-paid perhaps Rs. 10,000, when efficiently introduced. The total demand Rs. 4.7 billion divided by an average bill of Rs. 10,000 means 0.47 million new rural users. A realistic estimate may be some 0.3 million new users in a few years after introduction of services.

The Policy of 1999 includes two objectives for rural services: two fixed lines per VDC (officially only a minimum requirement), and 15 % of investments in rural areas.

Two fixed lines per VDC means an average of 2500 inhabitants per fixed telephone line. The present average rural penetration in Nepal, 0.14 lines per 100 inhabitants, corresponds to 700 persons per line. China, a forerunner in Asian telecommunications, had achieved 12 persons per fixed line in 2001. Setting an objective below the present achievement is not appropriate.

The objective of 15 % of investments in rural areas should be compared to demand and present supply, and to population. Unmet demand in rural areas is estimated as Rs. 4.7 billion, while NTC's present total revenue is Rs. 6.5 billion, which suggests that the past investment should have been 40 - 50 %⁴. The rural population is about 86 %, which suggests that rural investments should have been around 80 % of total investments. Because present investments have been in urban areas, new investments should be mainly in rural areas to correct the present imbalance. The 15 % objective appears to be set too low, it may be used as an excuse for making rural investments, and should be abolished.

In other LDCs mobile pre-paid services emerge as the main telecommunications solutions in rural areas. The situation in Nepal in 2003 is that mobile services as a whole cover only some population centres, and pre-paid services cover even less.

⁴ The very rough calculations assume that the required investment per urban or rural user are the same. In reality rural investments per user are higher, increasing the portion of rural investments.

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3.4 Licensing

During the project a proposal for a new licensing regime has been developed. The proposal is based on the experience in Nepal as well as elsewhere. The key rationales for the proposal are the following:

Experience	Conclusion
NTC has not been able to meet the demand, not even in Kathmandu for fixed services. The mobile service is close to a failure compared to other countries, in particular LDCs, where the number of mobile phones has exceeded the number of fixed telephone connections in one or two years after introduction	Abolish monopoly and introduce competition as soon as possible
Issuing only one new mobile or WLL licence at a time (licences based on scarce resources). The outcome in Nepal has been a number of failures, as in many cases the selected one operator has withdrawn.	Issue several licences at a time, preferably as many as technically possible
Issuing an unlimited number of licences for small service providers. The experience has been good in these services, showing that new technologies and improved services have been introduced, at reasonable prices. Unsuccessful licensees have gone out of service, but it has not damaged customers significantly	Issue unlimited number of licences when not limited by scarce resources
Granting exclusivity (limited competition for the next 5 years or so), expecting the operator to quickly expand its service. The exclusivities that have been issued have not worked, and are a hindrance for further development of services until exclusivity expires, as experienced during the policy work	No further exclusivity should be granted, existing and promised exclusivity should not be extended, and withdrawn if possible
Inclusion of restrictions of allowed services and allowed technologies in licences by specifying the allowed type of services and technologies. The outcome is that the same operator or service provider needs one licence for each service or group of services. The restrictions have not resulted in better service provision, better quality and / or cheaper prices, but it has resulted in unnecessary and fruitless disputes.	Licences should not include restrictions of allowed services and allowed technologies
Lack of a defined time for NTA to decide on a licence application. The outcome is that decisions on routine licence applications are delayed for months without a valid reason, and operators cannot start	Include time limits for decisions in legislation, with enforcement for the applicants. This should be combined with the rights of the Chairman to alone decide on simple application cases

Table 1. Summary of experience of licensing in Nepal.

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The experience is clear:

- issue several licences at a time when scarce resources are involved;
- issue an unlimited number of licences when not limited by scarce resources;
- no further special rights should be granted;
- licences should not restrict services or technologies;
- ensure that applications are handled promptly.

The experience supports immediate implementation of full liberalisation as stated in the National Telecommunications Policy of 1999 (section 5.1.a.3). The project has developed an Open and Technology Neutral Licensing Regime to implement the full liberalisation. The regime is based on two different types of permits:

- (i) *Standard Licences*⁵, to be issued on demand to anybody meeting prescribed minimum requirements; and
- (ii) *Individual Licences*, when scarce resources limit the number of licences, to be tendered.

Both will be granted either for a long duration, say, 20 - 25 years, or until further notice (no expiry date).

Standard Licences as well as Individual Licences should be short, and only include terms and conditions related to the individual licensees. Terms and conditions common to relevant operators should be included in mandatory rules and regulations.

Individual Licences will be tendered. Tenders will result in obligations of HMG as well as of the licensees. Such obligations expire in a few years, and should preferably be included in separate contracts or annexes to the Individual Licences.

In addition, other permits and assignments will be granted as required. Such permits and assignments include mobile spectrum (initially as the outcome of a tender), other spectrum assignments, e.g. for microwave links.

All licensing procedures should be published and include time limits for NTA to decide on applications. Applicants should have some rights to enforce timely decisions. The NTA Chairman should have the right to decide on simple and straight-forward applications within limits set by the Authority (Board), which will speed the procedures. The Chairman could report to the Board on granted licences. This change would also alter the focus of the Board from operative matters to strategies.

3.5 Taxation

Present general taxation of business is VAT 10 %, + some sector specific taxes, and in addition profit tax. Some exemptions to taxation exist. Taxation of telecommunications is higher than for normal business, for several reasons:

⁵ The Nepalese translation will use the form General Licence.

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- telecommunications has been considered a luxury;
- telecommunications (read: NTC) is easy to tax; and
- HMG urgently needs funds.

The most important special telecommunications taxes when writing this report (October 2003) are⁶:

for new connections:

- Rs. 1500 ownership charge for new telephone connections; except
- Rs. 50 ownership charge for pre-paid mobile connections.

for usage:

- 4 % royalty (included in call charges, not shown on telecom bill);
- 15 % Service Charge, also on Royalty; and
- 10 % VAT, also on Royalty and Service Charge.

The total tax added upon operator usage charges exceeds 30 %, which can be considered high compared to normal business taxation in Nepal as well as other countries. Imposing tax1 upon tax2 upon tax3 (the present situation in Nepal) is usually not considered appropriate. Taxation type radio spectrum charges for telecommunications should be added to the present taxation.

Royalty and Service Charge as well as the charge for the Rural Telecommunications Development Fund is at present levied twice for interconnection charges, the full amount to both operators, which is not the purpose of such taxes and charges, and not reasonable.

3.6 Information and Communication Technologies ICT

Characteristics of ICTs

We consider the full range of these technologies. The most important types of end-user device are shown in the figure below, along with some of their basic characteristics.

Terminal device	Cost	Operating modes			Content types		
		Stand-alone	One-way	Two-way	Speech	Pictures	Text
Paper	very low	yes	yes	yes	no	yes	yes
Radio set	low	no	yes	no	yes	no	no
Television set	mid	with VCR	yes	no	yes	yes	yes
Telephone	mid	no	yes	yes	yes	no	no
Computer	high	yes	yes	yes	yes	yes	yes

We note that different ICTs have very different characteristics and that it is important to choose the right ICT for each application.

⁶ The 2 % charge for the Rural Telecommunications Development Fund is not considered a tax, as it is returned to the sector as subsidy.

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By “service delivery” we mean reaching users of any service for which Government has responsibility, though the work may be shared with NGOs and the private sector. “Delivery” is not a one-way process - it includes feedback from and often dialogue with users. Important examples are shown in the figure below.

Application	Indirect target audience	Direct target audience
Education	Teachers	Students
Health (prevention)	Extension workers	Everyone often
Agricultural advice	Extension workers	Farmers
Income generation (advice, commerce)	Extension workers	Small business people
Postal service	Postmasters	Everyone sometimes
Official certificates etc	Local officials	Adults occasionally
Infrastructure (roads, water, electricity)	Local officials	None
Planning	Local officials	Many people sometimes

We see that all the services considered require communications with the staff involved in their provision, but their direct target audiences vary considerably.

Choice of Information and Communication Technologies

In the context of Nepal, vital points to take into account in choosing the right ICTs for rural end-users to use directly include:

- Actual availability. Nearly half of rural Nepalese households already have a radio set, while less than 1% have a telephone.
- Low cost, together with suitability for shared use, which further reduces cost.
- Usability by people with little or no education. Internet requires a high level of literacy, which is probably possessed by less than 5% of Nepal’s population.
- The target audience for the specific application, the importance of the application to them and the frequency with which they use it

All these considerations point to the broadcast ICTs (radio and television) and telephones being more suitable than Internet in the short and medium term for reaching most rural people directly for most applications.

Lessons from international experience

There is now a great deal of specific experience available of rural ICT projects in developing countries. Successful rural ICT projects, like any other projects, need to be well managed. Among other things, this means careful planning, local support and preferably local leadership, co-ordination and integration with other projects, properly trained staff and adequate resources.

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Novelty and glamour have sometimes led to ICT applications being "over-hyped" and pursued for their own sake. But for the most part, ICT is valuable as a development tool rather than as an end in itself.

Internet has become an essential part of nearly all development projects, with huge benefits in both efficiency and effectiveness. The question is not "Can the project afford Internet access?" but "Can the project afford to proceed without Internet access?"

Where rural people have direct access to ICTs, people who benefit the most tend to be younger and better educated.

Conclusions relating specifically to rural telecentres include:

- Sustainability of rural multipurpose telecentres presents a major challenge. Telephony is well used, but often there is little demand for more advanced services, especially if they are priced at a commercially realistic level. The location of rural telecentres is critical, preferably an otherwise busy location.
- Another critical success factor is the involvement of local people in deciding details like the services to be supplied by their telecentre (e.g. should it have a photocopier?), opening times and charges.
- A "cluster" of telecentres in a small area, enabling staff to share problems and experiences, supports the success of each individual telecentre.

Current developments in Nepal

The Figure below illustrates some major current and planned uses of electronic ICTs for rural service delivery that we have become aware of. It is not comprehensive.

Education	Computers provided to 100-150 secondary schools. Primary teacher training uses daily radio broadcasts. Plans for Open University within 3 years using broadcasts.
Health	Regular radio broadcasts. Healthnet online database for professionals.
Agricultural advice	Regular radio broadcasts. Online access to market prices.
Postal service	Plans for e-post between 18 Post Offices in 5 years.
Official certificates etc	Mainstay of "e-governance" pilots - telecentres being installed in 9 municipalities and 8 rural market centres, plan to extend to 33. Land records computerised in one District.
Planning, general	Computers now in all District Headquarters for general development, health, education; some are linked to Internet. Geographic Information Systems producing detailed maps using bottom-up data in Kathmandu and several Districts. Successful community radio stations in a few places. Satellite radios working in 38 VDCs. Rural telecentre pilot - 2 out of initial 15 are (near) operational, plan for 1500 to follow.

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We observe that there is quite a lot of relevant activity, but little co-ordination and no overall planning for provision of electronic ICTs for rural service delivery. Facilities provided do not necessarily match with priority needs.

Key findings

Given Nepal's difficult terrain, electronic ICTs have a very important contribution to make to its economic development. But they need to be introduced with specific applications in mind and as part of properly managed projects, not as ends in themselves.

It is important to choose carefully the best ICT for any given application from the wide choice available. Indirect applications of ICTs may often be a cost-effective way of improving rural service delivery.

The postal service is the only two-way communications service available to the vast majority of rural people. It is especially important given the large number of migrant workers and their need for money transmission. However, postal services are generally slow, inefficient and running at a large loss.

Despite having many shared objectives, the various current projects have little mutual contact. Co-ordination and co-operation will be highly beneficial, which may need that ICTs are under one single ministry. The lessons available from pilot projects must be shared before larger commitments are made.

Conditions vary widely among different Districts. Bottom-up participatory planning will be essential to ensure that the ICTs provided suit local conditions. Top-down planning by outsiders without local consultation may well lead to expensive mistakes.

Although our focus is rural development, locating early telecentres in towns may be a good way to reach rural people. Rural market centres are particularly promising locations because many rural people visit them regularly.

The lack of power infrastructure is a major obstacle to providing rural ICTs. Solar power may be used, but it greatly increases the cost of any installation.

The take-up of computers and the Internet by Departments of central Government is very patchy. General use of these tools by central Government is a prerequisite for their effective use in rural service delivery (whether indirect or direct). It is also a major step towards more open governance.

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4. FUNDAMENTAL RECOMMENDATIONS

4.1 Universal Access and development of rural services

Coverage of telecommunications is proposed to be improved using a four step programme:

- existing operators will extend their coverage and service provision without subsidies;
- several mobile operators will be selected through tenders on the basis of maximum rural coverage to achieve and define maximum coverage without subsidies;
- the Eastern Development Region will receive service through the Least Subsidy Tender issued in year 2060 (2003); and
- remaining areas will receive service through Least Subsidy Tenders, to be financed from the Rural Telecommunications Development Fund.

The programme should be implemented by FY 2062 (2006). The programme aims at full coverage of telecommunications services.

The order of implementation is important. The country should first have several major operators established in the country before issuing further Least Subsidy Tenders. Such tenders are very different if the competition is between operators already established in the country, with headquarters and a working network. A tender based on the expectation that new operators will establish operations in the country based on rural services alone, without the right to also cover urban areas, is rather unrealistic.

Once coverage is available, Universal Access should be implemented by promoting shared telephones - either fixed or mobile - and other shared facilities such as Internet access. The total demand for shared phones in rural areas is estimated to be half of all phones, possibly even more. The estimated demand for rural shared phones is 100,000 to 200,000 connections. The demand pattern requires operators to establish an efficient call resale system, rather than focus on sole users. Tenders for new operators should include some requirements for a resale approach, even if not enforceable.

Shared phones are impossible to regulate, and any attempt to regulate such phones by requiring licences, registration or regulating prices would hamper call resale and thus Universal Access. For the same reasons no discounts or subsidies should be included, with some exceptions for remote areas.

Universal Access and related topics are included in the draft Policy and annexes on Universal Access and mobile licensing with maximum rural coverage.

4.2 Open and technology neutral licensing and transition

Nepal should create a new telecommunications licensing regime based on no limitations for offering service, no technology restrictions, and the right for anybody to obtain an authorisation when meeting minimum requirements. The only limitations would be due to the need for scarce resources such as radio spectrum or similar.

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The proposed Open Licensing Regime includes two types of permits:

- Standard Licences, to be issued to anybody meeting the minimum requirements; and
- Individual Licences, related to scarce resources, to be issued based on public tenders.

Licensing procedures should be publicly available, which is not only common sense but also a WTO requirement.

When tendering for Individual Licences, the tender and the criteria for selecting operators and subsequent performance obligations may be related to technologies and other matters that are not to be included in Individual Licences. Such terms and conditions may possibly be included in a schedule to the Individual Licences or in separate performance contracts. The tender may e.g. be based on GSM or CDMA radio spectrum, but the Individual Licences will not specify the technology. The only possibility to implement the required coverage will nevertheless be the relevant technology for that spectrum.

The principles of the Open Licensing Regime are included in the draft Policy. A detailed proposal for the Open Licensing Regime is submitted as an annex.

4.3 New operators requiring scarce resources, mobile and others

The radio spectrum plan for mobile spectrum should be analysed and planned for a maximum number of operators. When planning, the number of operators is final, and cannot easily be increased within the same spectrum band. Thus, if planning e.g. the GSM spectrum for only two operators and the spectrum is assigned to two operators, a third operator cannot be licensed unless major changes are made in the existing networks, possibly including compensation to be paid to the two existing GSM operators. Using dual band spectrum assignment, the GSM band could accommodate four operators. Similar principles should be applied to CDMA spectrum.

New mobile operators should be tendered based on maximum coverage, not on maximum licence fees.

The Draft Policy includes a proposal for inviting an operator specialised in corporate services, based on a Standard Licence. The operator would provide corporate services, e.g. duct capacity, leased lines to corporate customers and to operators, as well as various data services to major customers. The Standard Licence would not restrict other services. The operator could be e.g. jointly owned by existing small operators and / or the new mobile operators to be licensed.

Details about the proposed mobile tender are included in an annex Mobile licensing with maximum rural coverage.

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4.4 NTC

HMG has decided to convert NTC to a company, and furthermore sell shares of the company to the general public in Nepal, to be implemented by the end of 2003. Both steps are welcome, ensuring that NTC will become more competitive.

However, neither is a precondition for further development of telecommunications in Nepal. The key area is liberalisation, licensing more operators, which is a necessity, and will ultimately create pressure on NTC to become more commercial and responsive to market demand.

The report includes a summary of possible steps, with proposals and alternatives for commercialisation and privatisation of NTC. See annex Options for liberalisation and commercialisation.

4.5 ICTs for rural development

We assume that the proposals in the main part of the PS-2 project are implemented, which means that over half the population will be within mobile phone coverage by 2006, and a few hundreds of public Internet access points will have been provided in conjunction with mobile base stations.

We expect that the proposed approach will lead in the next five years to a situation in which:

- Almost everybody in Nepal can listen to the radio, watch television and make and receive phonecalls (or text messages) on a daily basis.
- Most people who are sufficiently educated to use computers and the Internet themselves will be able to do so by travelling to a town which they have other reasons to visit (say, on a weekly basis).
- All District Headquarter towns, and in more advanced Districts several towns, will have multipurpose community telecentres where qualified staff will help anyone who needs help to use a computer or the Internet.
- All agencies of government with responsibilities for service delivery to rural areas will be in a position to take advantage of these new access possibilities. They will use the networks to communicate with their own staff and with the public. They will be producing appropriate content to support service delivery, mainly for broadcasting but also, increasingly, for computer and Internet distribution.

Proposed actions: ICTs for rural end-users

Enable local communities to assess the full range of ICTs available to them (for example, by training officials and providing illustrative materials for Community Organisations).

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Encourage all Districts to include an informed assessment of ICT requirements in their development plans.

Include planning for publicly accessible phone and Internet service in Rural Market Centre development plans. An achievable target may be to reach 150 rural market centres by 2005.

By the end of year 2007, ensure virtually universal access to national radio and television broadcasts (using satellite transmission where terrestrial coverage is uneconomic, and providing publicly accessible television sets and radio receivers in all VDCs).

Provide training for telecentre staff (including "Internet scribe" skills where needed).

Remove any obstacles to private enterprise providing publicly accessible ICT facilities on a commercial basis.

Provide e-post and secure electronic funds transmission at all Post Offices in places where power supply and telephone connection are available by 2005.

Proposed actions: ICTs for rural development professionals

Under a single Ministry with overall responsibility for information and communications infrastructure, build the strength and capabilities of the National Information Technology Centre (NITC), to enable it to become the focal point for co-ordination, planning and support for all development projects using ICTs.

Proposed actions: all ICT applications

Connect all Departments of central Government to the Internet. By the end of year 2004, all Departments will provide informative websites including all important published documents. By the end of year 2005, in those Departments with responsibilities for service delivery to end-users (e.g. Agriculture, Health, Education, Post), all staff whose jobs require completion of secondary education (or above) will be Internet- and e-mail-literate and will use e-mail for internal and external communications.

Set up local ICT co-ordinating committees in Districts, including representatives of the VDCs, the different Government offices, NGOs active in the area, private entrepreneurs and any other interested parties.

FINAL REPORT**5. SUPPORTING RECOMMENDATIONS****5.1 Policy and legislation**

The draft Policy has been developed under the guidance of a high level Policy Team, and is intended to be the basis for an updated National Telecommunications Policy. The Policy is expected to be approved by the end of 2003.

The Policy is furthermore intended to act as guidelines for updating the present Telecommunications Act. The legal work needs to be done in two parts:

- short term amendments to enable implementation of the immediate actions to implement the Policy, in particular to license new mobile operators based on maximum coverage rather than maximum licence fee as stated in the present Act, aiming at a time span of around one to two years; and
- a new Act, to be the basis for a stable and liberal regulatory regime as outlined in the Policy and the Annexes.

The main part of the short term amendments is done as part of this project. See separate Legal Report. The legal amendments will furthermore be refined as one outcome of the on-going licensing project for NTA.

5.2 Licence fee structure

The present licence fee structure is based on one-time fees for a number of years, rather independent of the operator's size. The fees are designed for the estimated size of the business, which is a rather arbitrary way.

The proposed new fee structure is based mainly on annual fees, in arrears, based on total revenue (X % of total revenue) but independent of service or technology.

In addition an upfront fee for issuing an Standard Licence would be imposed. The upfront fee should cover the immediate cost of issuing the document, so that the fee is not a hindrance for starting even small business. The upfront fee should be the same for everybody⁷.

The various one time fees for participating in a tender for an Individual Licence should cover the cost of that particular tendering. The one time fees normally include fees for officially buying the tender document, possible bid fees, and the upfront licence fee. All of these can be decided upon separately for each tender.

The proposal is to create a new fee structure, and it is included it in the amended regulation (see Legal Report). With an increased number of operators and with operators buying

⁷ A Standard Licence is intended to be similar to a driving licence. The fee for issuing a driving licence is the same for rich and poor.

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services from each other, calculation of the fees should be based on a value added principle to avoid double fees, which is included.

5.3 Rights of Way

Rights of Way (RoW) essentially include the rights to dig streets and roads and install cables, ducts and poles. These rights are unlimited in the present Act (any licensee has RoW), but virtually no licensee except NTC has used that right. Also in industrialised countries such rights are usually granted to any operator. The experience is similar, not many new operators use the rights. The reason everywhere is financial: digging is expensive. The present legislation is considered suitable, but implementation may need improvement.

Rights of Way involves many parties: street and road authorities, local authorities, UNESCO (for protected sites), water, sewage, electricity, cable television, in addition to telecommunications.

The proposal is to establish a small project sorting out the principles and procedures for Rights of Way to ensure that the needs of all parties are reasonably taken into account. The project should preferably be completed before issuing the mobile tenders proposed in the Policy.

5.4 Use of international experience

When making the international comparison, it was frightening to see that Nepalese professionals had very limited knowledge of what happens elsewhere in the world. The almost sole reference used is India, which is not a world-wide forerunner in almost any respect. Nepal definitely needs to know about what happens in India, but more important is to know and understand what happens elsewhere. The present situation is a major risk for the country, likely to result in wrong policy decisions. E.g. the failure of the Nepalese mobile service supply is obviously partly due to lack of knowledge of what happens elsewhere.

The Consultants recommend using several means to obtain and use international experience:

- obtain literature (PS - 2 has submitted a number of various reports on telecommunications to MOIC and NTA, to be available in a small library);
- participate in international meetings⁸, within Asia as well as world-wide, with a concept of learning by doing, as well as representing the country; and
- participate in relevant training.

⁸ Such meetings should include participation in Asian countries establishing common Asian opinions on world-wide issues within the ITU, regional meetings between policy makers and regulators, and properly organised visits to other countries to learn what other countries have planned or done.

FINAL REPORT**5.5 Clarify dispute resolution and role of regulator**

In some cases NTC has assumed the role of a regulator, acting by not supplying services to other operators or even disconnecting services or changing services necessary for other operators. The reason has been that NTC accuses other operators of providing services not included in the licences of such operators. The task of overseeing the sector is given to NTA, and only NTA should intervene, if needed.

Such behaviour shows disrespect for law and order, and should be discontinued. In the short term NTA should take actions against NTC if repeated, and amendment of legislation should be clearer on this point. NTC (or any other operator) should be held responsible for loss of other operators due to such illegal actions.

5.6 Taxation

Present taxation of telecommunications includes a one time fee (Ownership tax) on new connections, and royalty and Service Charge on usage charges. The taxation system includes double taxation features, which is usually not acceptable.

Royalty and Service Charge are added to the operator's internal charge. Finally the general Value Added Tax (VAT) is imposed, which means that VAT is imposed also on royalty and Service Charge. The overall taxation exceeds 30 % when calculated as addition to operator charges before adding tax items.

When operators buy services from each other (interconnection or other arrangements), the selling operator includes royalty and Service Charge. When the buying operator sells services using such interconnection services or similar, it adds royalty and Service Charge on the entire amount. The outcome is multiple taxation for those operators that buy interconnection services, which results in discrimination of such operators (usually small operators). The Consultants recommend introducing a value added type calculation basis for these taxes to avoid discrimination of some (small) operators. The legal amendments include these concepts.

The international best practice is that telecommunications should be taxed in a neutral way, it is just one business among others. Only a few countries impose special taxes on telecommunications. The present legislation includes the right to exempt operators from taxation, which is opposite to the heavy present taxation.

In the present situation it may not be realistic to expect HMG to reduce the overall taxation level on telecommunications. In the long run a reduction is recommended. PS - 2 has proposed a staged reduction related to increase in sector revenue, to retain total collection at least at the present level (see annex on taxation).

No additional tax or increase of tax rates should be imposed. Radio spectrum fees should be set on a level roughly covering the administrative cost of the radio spectrum administration, but not be used as one more tax.

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6. ANNEXES

This Final Report has two annexes:

- Draft National Telecommunications Policy;
- Explanatory document to National Telecommunications Policy; and

National Telecommunications Policy

Draft National Telecommunications Policy

Draft National Telecommunications Policy

DRAFT NATIONAL TELECOMMUNICATIONS POLICY

1. BACKGROUND

Political, economic, and social changes that have taken place since the restoration of democracy in Nepal 13 years ago have not met the expectation of the overwhelming majority of the people despite the fact that policies appear to have moved in the right direction. Although the country has made significant gains in education, health and other social sectors, particularly in the last decade, the level of human development in Nepal remains among the lowest in the world. Even now large portions of our population still remain below the poverty line. Nepal has therefore embraced poverty reduction as a principal goal of National Development. The Government's Poverty Reduction Strategy includes an overall economic development framework, broad based economic growth, social sector development, targeted programme and employment generation, reform in public expenditure management, good governance, assessment of poverty and a monitoring system of programmes. In this context, His Majesty's Government considers that the telecommunication sector has a very important role to play.

His Majesty's Government had already accorded to telecommunication its appropriate place as a prerequisite for the development of the country. The Government had expressed its commitment to full liberalisation of the telecommunication sector through the Telecommunications Policy - 1999 in providing and expanding telecommunications services throughout the country by creating a favourable environment for private sector participation. In the context of the geography of Nepal, telecommunications is a more important infrastructure than any other. The fast technological development and dynamic changes taking place in the telecommunications sector have opened up new opportunities. Nepalese users, therefore, have the right to obtain the benefits of technology development and lower cost of telecommunications. In this backdrop, Telecommunications Policy 2060 (2003 A.D.) is being implemented to harness the benefits of the sector gains and the future opportunities it promises to bring to the people of Nepal.

2. NEED FOR THE TELECOMMUNICATIONS POLICY

The Telecommunications Act (1997) and the National Telecommunications Policy (1999) have already contributed to some success in the telecommunications sector. It has helped in creating a favourable environment by improving provision of various telecommunications services. Nepal has to bridge the Digital Divide urgently and efficiently, in order to enter the Information Society. The very fast development of technology, the recent positive experience of development of the telecommunications sector structure and service provisioning elsewhere, the recent mixed experience of Nepal, and the commitment of the Telecommunications Policy 1999 to fully liberalise the sector from 2004, have all created the need for a new telecommunications policy. The need to implement Telecommunications Policy 2003 also arises due to our commitment as a member of WTO.

Draft National Telecommunications Policy

3. OBJECTIVES

3.1 Main development objective

The main objective of the Telecommunication Policy is to create a conducive environment resulting in a variety of reliable telecommunications services being readily available to all people in all areas of the Kingdom, at reasonable costs to the user, to contribute to the social, political and economic development of the country.

3.2 Detailed objectives

The main development objective is further broken down in the following:

- 3.2.1 To ensure provision of Universal Access to the most common telecommunications services in all urban and rural areas of the Kingdom, with telephone service available at a shouting distance in the inhabited areas. In addition, provision of Universal Access shall focus on affordability, thus ensuring that the portion of population that can afford the service is as large as possible.
- 3.2.2 To ensure that all telecommunications services are available on demand in the urban areas of the Kingdom, including corporate telecommunications services to the business community.
- 3.2.3 To ensure a choice of services from several providers to the users in urban areas, and to some extent in rural areas.
- 3.2.4 To ensure availability of all appropriate Information and Communication Technologies (ICTs) in support of rural development and poverty alleviation, in line with the national policy, drawing on the full range of options - including, for example, radio, television, video cassette recorders, and stand-alone computers, fixed and mobile phones as well as the Internet etc.

4. NATIONAL TELECOMMUNICATIONS POLICY

- 4.1 Provide Universal Access, which means that all users have reasonable access to telecommunications services such as a shared telephone or a Public Call Office, and other ICT services as reasonably required and determined by the MOIC.

Universal Access

- shall be provided for outgoing as well as for incoming calls;
 - can be provided using any suitable technology, e.g. fixed, mobile or satellite; and
 - is made available in urban as well as in rural areas.
- 4.2 Apply service obligation, which means that any dominant service provider is obliged to provide telecommunications services on demand in urban areas to any customer ordering such services.

Draft National Telecommunications Policy

- 4.3 Develop corporate services, which means leased lines, data services and other similar services, for the public and private business sectors, and ensure that such services are provided by more than one operator in major urban areas.
- 4.4 Liberalise the telecommunications sector fully, which means that the telecommunications sector is open to new operators without restrictions, except where radio spectrum limits the number of operators. Operators shall arrange for jointly provided services such as directory services, which must cover all customers in the country.
- 4.5 Introduce Open Licensing regime, which means that the new licensing methods are applied to open the sector to new operators in a transparent manner, and create a level playing field.
- 4.6 Promote private sector participation in operation of telecommunications, which means that MOIC and NTA keep the private sector informed of sector reform development and licensing opportunities in a transparent way.
- 4.7 Open the doors of the Information Society, which means creation of the telecommunications service provision outlined in this Policy, and implementation of other required issues such as cyber legislation.
- 4.8 Ensure that appropriate ICTs are available in rural areas to meet end-user needs, which means at first mainly radio, television and telephones, as these do not require special training or literacy for people to use them.
- 4.9 Foster the full use of appropriate ICTs by workers in both government and NGO rural development and infrastructure projects, which means spreading Internet availability and human capability to use it as fast as is practicable down to District level and beyond.
- 4.10 Commercialise of the incumbent and reduce HMG's ownership, which means that NTC will be converted to a company, restructured to meet increasing competition, and eventually HMG will reduce its ownership.
- 4.11 Ensure successful implementation of the policy, which means supporting the MOIC and the NTA in implementation, and developing their human and financial resources. This Policy is expected to result in major positive changes in the telecommunications sector, to the benefit of the entire Nepalese society. MOIC and NTA manage these changes. Policy development, the need for cyber legislation, as well as technology development, require that ICT be managed by MOIC.
- 4.12 Promote economic efficiency in provision of telecommunications services, which means promoting fair competition among operators and service providers, and applying normal business taxation to telecommunications. Telecommunications is a necessity for economic development.

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5. STRATEGIES

5.1 Provide Universal Access

5.1.1 Pursue country-wide telecommunications coverage and service provision through a programme comprising four components. The intention is to implement the programme by FY 2063 (2007):

- existing operators will extend their coverage and service provision without subsidies;
- several mobile operators will be selected through tenders on the basis of maximum rural coverage which will define commercial coverage without subsidies;
- the Eastern Development Region will receive service through the Least Subsidy Tender issued in 2060 (2003); and
- remaining areas will receive service through Least Subsidy Tenders, to be financed from the Rural Telecommunications Development Fund.

If successful, the mobile tenders will result in 50 - 75 % of the population having the possibility to use a phone, either own or shared, in or near their homes.

The rural demand - mainly unmet - for telecommunications is estimated at some Rs. 4.7 billion, based on 2% of rural household consumption. If even Rs. 3 billion were generated, at an average annual user bill of Rs. 10,000, the programme will create at least 300,000 new telephone connections in rural areas. This will result in an average of about 75 lines per VDC. More than half of these lines are expected to be shared.

5.1.2 Implement Universal Access by ensuring access to shared telephones and other shared telecommunications access points. Sharing telephones and any resale of calls will be encouraged to make maximum use of existing facilities.

5.1.3 Finance Least Subsidy Tenders from the Rural Telecommunications Development Fund (RTDF), which the NTA administers. The RTDF will receive its capital from

- mandatory contributions from all licensed service providers on an equal basis (rural development fee);
- from His Majesty's Government; and
- from other sources.

All payments from the RTDF shall be based on competitive public tenders. Payments shall be one-time subsidies unless exceptional circumstances require continuous subsidies. The NTA shall determine timing and scope of the tenders and the maximum subsidies, and implement the tender.

5.1.4 The NTA will develop the principles, processes and procedures for administration of the RTDF in 2004. The NTA shall determine the rural development fee on an annual basis. The RTDF shall be terminated once the main objectives are achieved.

5.1.5 Exempt small rural operators [with less than X million rupees annual revenue] from some taxes [VAT, royalty, service charge] and / or regulatory fees such as [licence and numbering fees, rural development fee], to promote local investment in rural areas. This

Draft National Telecommunications Policy

provision is expected to generate small business entrepreneurs at the local level to expand telecommunications services as the big operators will have the disadvantage of higher operational overheads in widely dispersed operations. Exempted rural operators will not receive subsidies from the RTDF.

5.2 Service obligation

- 5.2.1 Apply service obligation by mandating any dominant service provider to provide telecommunications services in all urban areas on demand to all users ordering such services. A dominant service provider will not have the right to refuse to provide services. The NTA shall define dominant service providers in line with legislation.
- 5.2.2 Apply service obligation by mandating any dominant service provider to provide telecommunications services in all urban areas on demand to all telecommunications operators ordering such services, at a higher priority than normal users. The dominant operator shall, within one month, either provide the service, or advise the ordering operator when the order will be delivered, and when doing so, specify the reason for the delay in delivering the service ordered. The dominant operator shall compensate other operators for unreasonable delays in delivery, interruptions in service, or essential changes in services with insufficient notice, causing loss to other operators.

5.3 Develop corporate telecommunications services for corporate customers

- 5.3.1 Promote introduction of at least one more operator specialised in providing infrastructure and corporate services, apart from NTC. Corporate services include leased lines, various data services for connection of corporate data networks, broadband services, PABX networks, etc.
- 5.3.2 Oblige NTC to provide broadband services, including ADSL technology. NTC possesses the largest fixed network, which is best suited for broadband services.
- 5.3.3 License cable television operators for the purpose of providing broadband access to Internet and other data services.
- 5.3.4 The Open Licensing Regime allows any operator to provide corporate services, unless limited by the scope of assigned scarce resources.

5.4 Liberalisation of telecommunications sector

- 5.4.1 Introduce a multi-service and multi-operator environment, which means that any operator can offer any service, and each service can be obtained from a number of operators. The only restrictions are due to radio spectrum and similar scarce resources, which cannot be granted to every operator. Other operators can resell such services.
- 5.4.2 Ensure that the regulatory regime is stable, predictable, transparent, and in favour of investments, which means that:

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- the legal basis is appropriate;
- licensing principles and regulations are suitable, published and observed;
- procedures are simplified; and
- a level playing field is created,

to boost confidence in the investor community.

- 5.4.3 Secure fair interconnection, which means that new operators will have a fair basis to establish smooth operations. Interconnection regulations will follow the international best practices as stated in the WTO Reference Paper, including requirements that major operators offer interconnection under non-discriminatory and published terms and procedures, timely, and with a dispute resolution mechanism. New operators have reasonable rights to obtain leased lines from dominant operators.
- 5.4.4 Apply price regulation only when required, which means that price regulation will be applied only to dominant operators. Even then price regulation will not be applied when the particular market is deemed sufficiently competitive. NTA shall annually conduct and publish a study on the tariffs in various markets, including international benchmarking, and in that study propose those tariffs requiring regulation. After receiving comments on the proposals, NTA will decide on price regulation for the following year. The preferred form of price regulation will be price cap.
- 5.4.5 Ensure that all operators are subject to the same taxation rules, which means that no exemptions to normal business taxation should be granted, and any special taxation should apply to all operators. Taxation rules may, however, include tax exemptions for small rural operators.
- 5.4.6 Ensure that HMG shows its commitment to liberalisation, which means that HMG entities use the services of several operators based on price and quality assessments. It is also a practical test of the performance of the operators and e.g. interconnection arrangements.
- 5.4.7 Apply neutral classification of telecommunications services, which means that services are named "fixed", "mobile", "Internet", "international", or similar, but not classified using names such as "basic", "value added", or other terms indicating different status or official preference of services. Different users have different needs, and users should have the right to select services as they wish.
- 5.4.8 Set various licence fees, including numbering fees and radio spectrum fees for telecommunications purposes, to cover the cost of the organisations handling those matters (NTA, FMD). Licence and spectrum fees will not be used as a taxation mechanism.

5.5 Introduce Open Licensing regime

- 5.5.1 Introduce Open Licensing regime for new operators. The Open Licensing Regime includes Standard Licences, available to anybody, and Individual Licences, which will be tendered. In addition to Standard Licences and Individual Licences, separate assignments or licences will be granted upon application for radio spectrum (e.g. for microwave links and similar),

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and numbering capacity. Tenders for Individual Licences will include the rights to scarce resources such as major radio spectrum capacity (e.g. for mobile telecommunications, WLL and similar).

- 5.5.2 Apply the same rules for licence fees for all operators in the Open Licensing regime. The main fee will be X percent of the annual revenue, which has to be certified by a registered auditor acceptable to the NTA. NTA will set the value of X annually.
- 5.5.3 Existing licences will be converted to the new regime.
- 5.5.4 Grant a Standard Licence to any applicant meeting prescribed minimum requirements. A Standard Licence will give the right to offer any services, but do not give automatic right to any scarce resources. Operators with Standard Licence will be granted numbering capacity and some radio spectrum, such as frequencies for microwaves and other spectrum that is not very limited. A Standard Licence gives the right to offer e.g. mobile services, provided the operator can agree with another operator with a mobile spectrum (resale, service operator or virtual operator arrangement).
- 5.5.5 Tender Individual Licences. The most important activities to be tendered will be mobile telecommunications and WLL. The NTA will decide on
- (i) when a tender will be issued;
 - (ii) the scope of the tender;
 - (iii) the number of licences to be tendered, and
 - (iv) the criteria for selecting operators.

The tender is for a package with the Individual Licence, including radio spectrum, and in addition the commitments that the successful applicant promises in its application. These commitments (e.g. coverage) will be included in a schedule to the Individual Licence or a separate contract. An operator with an Individual Licence will need a Standard Licence for providing services that are not subject to tender.

- 5.5.6 Use maximum coverage and other similar criteria for selecting operators for Individual Licences. Maximum licence fees will not be used if a better method can be used when tendering for an Individual Licence.
- 5.5.7 Apply technology neutrality in the Open Licensing regime, which means that any operator can use the technology of its choice. No technology restrictions will be included in Individual Licences or Standard Licences. This will ensure that Nepalese users receive the advantage of new or cheaper technologies. The only restrictions are that equipment shall be new and meet relevant international specifications. Operators with existing licences will have existing technology restrictions until converting to the Open Licensing regime.

5.6 Promote private sector participation in operation of telecommunications

- 5.6.1 Promote private sector participation to ensure sufficient investment.

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- 5.6.2 Prepare a publicity and information dissemination plan for the on-going sector reform, and regularly issue press releases regarding the overall reform and its implementation steps. Disseminate information on the MOIC and NTA web sites, including studies on the telecommunications sector and the on-going sector reform programme.
- 5.6.3 Arrange seminars and other events for the private sector focussing on open and technology neutral licensing, licensing arrangements, and other essential topics.

5.7 Open the doors of the Information Society

- 5.7.1 Open the doors of the Information Society, which means that needed infrastructure will be ensured, and other topics such as cyber legislation will be introduced. The infrastructure required is addressed elsewhere in this Policy. Cyber legislation will be enacted in co-operation with other ministries and other relevant bodies.

5.8 ICTs for rural end-users

- 5.8.1 Enable local communities to assess the full range of ICTs available to them (e.g. by training officials and providing illustrative materials for Community Organisations). Encourage all Districts to include an informed assessment of ICT requirements in their development plans. Support the fulfilment of these plans by providing facilities, equipment, training and personnel where needed to complement those that become available commercially. Supply external matched funding in more favourable ratios to projects that cater for disadvantaged groups.
- 5.8.2 By the end of year 2004, ensure virtually universal access to national radio and television broadcasts (using satellite transmission where terrestrial coverage is uneconomic, and providing publicly accessible television sets and radio receivers in all VDCs). Give high priority to producing programmes which will inform people on development issues while remaining attractive. Foster the development of local and community radio and television stations, which will carry these national programmes as well as locally-produced material.
- 5.8.3 Remove any obstacles to private enterprises providing publicly accessible ICT facilities on a commercial basis. Consider positive incentives, such as loans to enable under-employed youths to buy computers.

5.9 ICTs for rural development professionals

- 5.9.1 Connect all Departments of central Government to the Internet. By the end of 2004, all Departments will provide informative websites including all important published documents. By the end of 2005, in those Departments with responsibilities for service delivery to end-users (e.g. Agriculture, Health, Education, Post), all staff whose jobs require completion of secondary education (or above) will be Internet- and e-mail-literate and will use e-mail for internal and external communications. This is necessary both to provide open Government, and to facilitate the use of Internet and e-mail by rural development projects.

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5.9.2 Build the strength and capabilities of the National Information Technology Centre (NITC) or a similar institution, to enable it to become the focal point for co-ordination, planning and support for all development projects using ICTs. It will encourage outside investment in such projects by assisting choices of ICTs that are appropriate to local conditions, and facilitating sharing of what is provided among different Government Departments and different projects. An essential tool for this will be an up-to-date, publicly available database of all such projects. NITC will also run a library of appropriate content, which can be made available in different formats as required (e.g. on CD-ROM as well as over the Internet).

5.10 Commercialisation and privatisation of NTC

5.10.1 Convert NTC into a company. The Government has initiated the conversion, and intends to complete it by the end of year 2003. The purpose is to strengthen NTC when facing new competition as an outcome of this Policy, and to add shareholder value.

5.10.2 Restructure NTC's operations aiming at improved efficiency and effectiveness, improved service delivery and productivity.

5.10.3 Scale down HMG's ownership gradually with the view of increasing private ownership of NTC.

5.11 Ensure successful implementation of policy

5.11.1 Ensure that the MOIC and the NTA are capable of implementing the policy and that they possess adequate staffing, skills and resources urgently needed for the next few years. Improve policy and regulatory planning and implementation, and allocate necessary staff and other resources to the MOIC and the NTA.

5.11.2 Maximise the greatest positive impact and power by distributing relevant information properly in a timely manner. NTA shall publish an annual statistics publication of Nepal, including details of service provision, user prices, quality of service and benchmarks, international comparisons and other relevant information. NTA and MOIC shall publish various studies and other relevant information in printed form as well as on their web sites.

5.11.3 NTA shall implement consumer protection, including publishing guidelines for operators and consumers, implementing dispute resolution mechanisms, and other relevant activities.

5.11.4 Clarify the roles of MOIC, NTA and operators to ensure that sector management, policy making and implementation of policies is smooth, clear and transparent.

5.11.5 Make sure that MOIC and NTA are effective and efficient, even though possibly small. The terms and conditions of employment must be attractive to high quality professionals. Both MOIC and NTA should be a good example for the least developed countries.

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- 5.11.6 Transfer radio spectrum management from the MOIC to the NTA as required, with the target of having all regulatory matters in one organisation.
- 5.11.7 Implement the WTO requirements for international best practices in telecommunications, including competitive safeguards, interconnection, Universal Service, public availability of licensing criteria, independent and impartial regulators, and allocation and use of scarce resources.

5.12 Promoting economic efficiency and fair competition

- 5.12.1 Promote and enforce fair competition, which will improve economic efficiency. Fair competition legislation will initially be included in telecommunications legislation, until general competition legislation is enacted in due course of time. Fair competition elements are also included in WTO requirements for telecommunications, including prevention of major operators using anti-competitive cross-subsidisation and predatory pricing, abusing information from competitors, and withholding information relevant to competitors.
- 5.12.2 HMG will undertake a review of the tax and duty regime with a view to increasing access to services and undertake a phased change of the tax and duty regime towards normal business taxation rather than luxury type taxation.

6. LEGAL AMENDMENTS

In order to implement the measures included in this Policy, necessary legislation will be enacted. This will be enacted in steps, beginning with urgent temporary measures to ensure that the most urgent policy steps can be implemented with a sufficient legal basis, to be enacted early 2004. Further amendments will be enacted as required.

7. AMENDMENTS OF POLICY

This Policy is a continuation of the Policy of 1999, including further development of that Policy and its implementation strategy. It is based on the experience and understanding of the sector at the time of its preparation, which includes implementing the Policy of 1999. Considering the fast development of telecommunications, the Policy should be reviewed every three years, which means in 2063 (2006), 2066 (2009), etc. The annexes to the Policy will be reviewed annually.

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8. IMPLEMENTING AGENCIES

The following agencies will have the main role in implementing this policy:

His Majesty's Government, Ministry of Information and Communications	Policy formulator / Co-ordinator for communications topics and for part of ICT topics
His Majesty's Government, Ministry of Science and Technology	Policy formulator / Co-ordinator, for part of ICT topics
Nepal Telecommunications Authority	Regulator, Promoter and Licence Provider
Frequency Management Division FMD	Regulator for radio spectrum
Telecommunications Operators, including Nepal Telecommunications Corporation	Provision of services by obtaining licences

Telecommunications Operators will provide various types of telecommunications services. The Operators shall be responsible for developing required skills and carry out research and development to the extent needed.

ANNEX 1: KEY INDICATORS

These indicators are proposed for monitoring achievements in implementation of the policy.

Year	Indicator
2003	<ul style="list-style-type: none"> • NTC converted to a company
2004	<ul style="list-style-type: none"> • licences issued for mobile operators, corporate services operator • Standard Licences issued • amendment of the Telecommunications Act and Regulation enacted
2005	<ul style="list-style-type: none"> • cyber legislation enacted • HMG ownership of NTC reduced • roll-out of mobile operators completed
2006	<ul style="list-style-type: none"> • roll-out of rural least subsidy operators completed
2007	
2008	<ul style="list-style-type: none"> • Nepal has improved its overall telecoms ranking in Asia by 4, measured by total telephone penetration (fixed + mobile) years 2002 - 2007

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ANNEX 2: ACTION PLAN

Liberalisation	2003	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1-2	2005 Q3-4	2006	2007	2008
New mobile operators			tender		licences		roll-out done			
Operators for corporate services				Standard license						
Rural least subsidy tenders			plans		tender	licences		roll-out done		
Standard Licences			first licences issued							
Commercialisation	2003	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1-2	2005 Q3-4	2006	2007	2008
Convert NTC to company	done									
Restructure NTC			plans		first phase		second phase		third phase	
Reduce ownership	2003	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1-2	2005 Q3-4	2006	2007	2008
Action plan			options developed		strategy adopted	implemen- tation				
Legislation	2003	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1-2	2005 Q3-4	2006	2007	2008
Urgent amendment of legislation	draft completed	enacted								
New rules & regulations	plans				done					
Cyber legislation		plans	done							
Regulation	2003	2004 Q1	2004 Q2	2004 Q3	2004 Q4	2005 Q1-2	2005 Q3-4	2006	2007	2008
RTDF					manual done					
Introduce Open Licensing			introduced							

**Explanatory Document to
National Telecommunications Policy**

***Explanatory Document to
Draft Telecommunications Policy***

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EXPLANATORY DOCUMENT TO DRAFT POLICY

1. BACKGROUND

This document is an explanatory document to the draft National Telecommunications Policy. The numbering of this document follows the numbering of the Policy.

The Policy is drafted as a governmental decision including rather complete instructions for drafting necessary legislation. This is the reason for going into detail in a number of issues. Nevertheless, legal drafting will necessarily result in some changes such as terminology.

2. NEED OF THE TELECOMMUNICATIONS POLICY

Self-explanatory.

3. OBJECTIVES

3.1 Main development objective

The main objective of the Policy is intentionally short. All the objectives are related to service provision and users' choice of operators.

Government provides the environment, but not the services.

The point of view is the user, which is very important. Telecommunications operators (including NTC) are merely a means to implement these services, operators are not an independent objective in their own right. Thus telecommunications operators are not mentioned in the main objective. The main objective as such is not a major change from the previous policy, but implementation strategies include major changes.

Variety of reliable services readily available should be understood that users have the right to obtain the service that they wish. No service should be classified as basic. Abolishment of the term *basic* is a major change, switching the choice of preferred services from policy makers to users.

Telecommunications as a whole is a minor service sector, compared to other services such as transport, health, education, etc⁹. For that reasons users should pay reasonable charges, and charges are mentioned in the main objective to clarify that the policy is based on users paying their charges.

⁹ Telecommunications is about 1 % of GNP, being part of transport, communications and storage (9%), while electricity, gas and water is 2 %, finance and real estate 11 % and community and social services 10 % (source National Accounts of Nepal 2002). Demand is much higher than supply.

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Subsidies should not be used, except where no services would be reasonably offered on a commercial basis, in particular remote areas. Subsidies are - and should be - marginal, and are thus not mentioned in the main objective.

3.2 Detailed objectives

The detailed objectives express the main objective in some more detail, using different points of views reflecting differences in geographical areas and user types.

Urban areas, in particular Kathmandu, should have services available on demand. It is realistic to recognise that urban areas need a larger variety of services than rural areas. No significant waiting lists should be accepted in urban areas. Residential users should have the most common services (fixed and mobile telephony, also broadband Internet access in dense urban areas) available anywhere. Corporate users (private businesses and HMG) should have a variety of services (leased lines, data services, etc.) available on demand so that Nepalese businesses become competitive in the international market in terms of telecommunications access. Broadband Internet access is needed for higher income residential users as well as for corporate users, and broadband services should be available. In the 1999 policy corporate services were not mentioned separately, and are not offered sufficiently even in Kathmandu's most busy business districts. Inclusion of corporate services is a major change to the Policy.

The majority of the population in urban as well as rural areas cannot afford their own connections, and thus they have to use shared access, called *Universal Access*, such as shared telephones, Public Call Offices, telephones in shops, etc. In order to answer incoming calls to a shared telephone, the telephone should be close, which is defined as *shouting distance*. If the distance is larger, the call cannot be answered immediately, and the caller has to call again, once the called person has arrived close to the phone, which is not practical. The objective is realistic if operators actively support also users with lower annual usage, in practice most likely pre-paid mobile accounts. *Shouting distance* is a major change to the 1999 Policy, which called for only two shared (fixed) telephones per VDC as a minimum. Two shared phones per VDC means an average of 2500 inhabitants per phone, which is not sufficient to be called coverage¹⁰. The implementation strategy of this policy aims at a level of 50 - 100 lines per VDC.

The needs of different users vary. For some advanced users Internet may be the most important service. Users should have the choice, not policy makers or regulators. This is also the reason that the term *basic service* is not used anymore. In the 2000's *basic service* may be fixed telephony, mobile telephony, Internet, or some other service, at the user's choice.

Users should also have a choice of operators for each service, so that they have alternatives if they are not satisfied with one operator. Competing operators adapt to the market and the

¹⁰ In the past coverage *objectives* for rural areas of African countries were set around 1 % (100 persons per telephone line). In 2001 China had some 12 persons per *installed* fixed telephone in rural areas (calculated from ITU statistics). The previous Nepalese minimum objective of 2500 persons per line (two lines per VDC) is too low and should be abandoned.

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needs of customers much better than monopolies, which ensures development. NTC is likely to develop faster in a competitive market than in a monopoly market.

It is realistic to assume that a choice of services and operators is smaller in rural areas. In the most remote areas even one operator may be a good situation. Provision of services in rural areas is not mandated on demand, which it should be in a normalised situation. Introduction of the requirement for providing services on demand could be introduced in the first revision of the Policy, tentatively planned for 2006, when rural coverage is implemented using Least Subsidy Tenders (see implementation strategy 5.1).

4. NATIONAL TELECOMMUNICATIONS POLICY

In a poor country like Nepal it is not realistic to assume that most households can afford their own telephone line or any other own service. Shared access is needed, and should in fact be the main issue in rural service provision. *Universal Access* is a term for providing service throughout the country, so that all inhabitants can reasonably access a shared telecommunications service, usually telephone for the poor and illiterate. A shared phone can be a Public Call Office, a telecentre, or just a neighbour's phone or a phone in a shop. The shared phone can be fixed or mobile, no technology restriction should apply. Shared Internet access can be a cybercafe, a telecentre, or a neighbour's Internet.

Access to telecommunications should be easy. It is not realistic to expect anybody, rich or poor, to spend considerable time and even money to reach a shared phone. For that reason the term *shouting distance*¹¹ could be used, even if it is a long term objective.

Payphones (card phones and similar) are used in rich countries to eliminate the need for a person to collect payment for calls. The expensive payphone (US\$ 1000 to 3000) thus replaces employment. In a poor country like Nepal, employment (in a PCO or similar) should be preferred to expensive imported equipment. A card phone also requires the user to pay for several calls in advance, which is not practical for a poor person, who has difficulties in paying even a small charge for one incoming call. Nepal should avoid card phones and similar expensive payphones. Even in Western countries the number of card phones is decreasing because most persons have mobile phones, making card phones unnecessary.

Shared access is particularly important in rural areas, where few households are rich enough to afford an own phone. The demand (willingness to pay) for telecoms in rural areas is larger for shared access than for non-shared access (see annex on Universal Access). Thus arrangements for shared access should be smooth and easy, and adapted to the particular environment. All technologies should be used, e.g. fixed and mobile. Shared access should cover outgoing as well as incoming calls. Incoming calls are important for the poor, as there is no operator call charge for normal incoming calls. A PCO or the owner of a shared phone may charge a small fee for incoming calls.

¹¹ A very common distance definition is *reasonable walking distance*, which usually means one or a few hours of walking. The Consultants' understanding is that such a distance is unreasonable for the poor as well as for the rich, if a shorter distance can be realistically implemented.

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Development of business is a prerequisite for economic development. Thus corporate services (leased lines, broadband Internet access, data services e.g. for interconnecting Local Area Networks, office data networks) are essential. The possibility of creating a strong IT or ICT industry for export, similar to e.g. India, depends on availability of such corporate services. The present situation is that corporate services are mainly not available, which alone hampers export business. E.g. broadband services are available mainly (or only) from ISPs, not from NTC. In the EU and the USA about one third of household Internet users already have broadband access (mid 2003). Dial-up access is not sufficient for professional use anywhere in the world. Internet contents, including important software such as virus protection, is designed almost solely for industrialised countries, which means that developing countries have the choice of either supplying bandwidth or be left behind in development.

Comparisons with countries at a similar stage of development clearly indicate that Nepal is increasingly lagging behind other countries. In ten years Vietnam, Cambodia and Laos have surpassed Nepal, and in 2001 in Asia Nepal was ahead of only Bangladesh, Bhutan¹², Myanmar and Afghanistan. One of the main reasons is that Nepal in practice is still a monopoly environment, while other countries have a multi-operator environment and corresponding faster development. Introduction of new major operators is necessary if Nepal wishes to regain its previous rating in comparison to other countries. Opening the sector to new operators is essential. Many countries, including India and Nepal, have found that a duopoly approach (two competing operators) is not sufficient for fast development, several operators are needed. There is no real reason to limit the number of new operators unless scarce resources set limits, in particular radio spectrum.

In order to get new operators, private sector participation is a necessity. The private sector needs information about the possibilities. MOIC and NTA should keep the private sector informed about development, not only of formal decisions but also of planned steps. It is particularly important that the Nepalese private sector is informed, to ensure that all local interested parties can take the necessary steps as early as possible. Official favouring of Nepalese parties, e.g. in tenders and regulations, is not acceptable.

ICTs are powerful tools for development, if applied properly¹³. ICTs do include traditional technologies, they are not only the newest electronic ones (read: Internet). A mix of suitable technologies is needed, to reach different target groups. Oral technologies are needed to reach the vast majority of the population, as most inhabitants are either illiterate or barely literate, and live in an oral society. Broadcasting (radio and television) and telephones are suitable means. The more educated layers of society - as well as donors and NGOs - can make beneficial use of advanced technologies such as Internet. A range of suitable and focussed ICT programmes is needed. It is easy to make mistakes, and the history of ICT projects world-wide is full of failures. Some of the failures are due to over-reliance on the literacy skills of the poor. Internet needs about the level of completed secondary education, other ICTs can be used with lower level skills.

¹² Statistics information varies, as some statistics sources state that Bhutan is well ahead of Nepal.

¹³ See ICT Report.

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NTC is still a corporation fully owned by HMG. NTC is being converted into a company, which will improve its possibilities to compete¹⁴. Once converted, it should also be internally restructured in order to make it more efficient. The ultimate step is that HMG dilutes its ownership, selling shares of NTC to the general public and / or to strategic investors. The Consultants expect NTC losing market share but to retain its position as the main telecoms operator, and do not see a need to protect NTC.

This policy will result in major changes in the next few years. The HMG bodies overseeing and controlling the changes are essential for success. MOIC and NTA need support and resources in order to build the capacity needed for the sector reform. Part of the support could be included in the on-going Telecommunications Sector Reform Project e.g. as a training component, part from other sources. Both bodies need stable staffing so that mainly the same persons can continue work until the main part of the sector reform is implemented. If Nepalese control is weak, external bodies or consultants get an unreasonably high informal power, which is not desirable.

Taxation should be amended towards normal business taxation, from the present luxury service taxation. The dramatic increase of demand resulting from introduction of pre-paid as well as lowering the initial deposit of post-paid mobile should be noted. They show that the perception of affordability to a large extent depends on initial charges, less on usage charges.

5. STRATEGIES

5.1 Provide Universal Access

Universal Service means that some defined services should be available to all households at an affordable price. Such an approach is unrealistic in a poor developing country such as Nepal. *Universal Access* means that all residents should have reasonable access to shared telecommunications facilities, usually telephone, possibly also fax or Internet. Universal Access should be implemented by encouraging shared use of any available telecommunications, ensuring that use of existing facilities is maximised. Shared use also means that price regulation of call resale and other sharing is not realistic. Some non-binding guidelines and advice can be prepared.

Demand for telecommunications is based on the assumption that the rural population could use 2% of their consumption for telecommunications. The estimate is based on the assumption that telecommunications is available close by, as it is not realistic to assume that even the poor will spend significant amounts of time just for travelling to a phone, for incoming or outgoing calls.

The strategy for Universal Access includes a four step programme for coverage¹⁵. Once the coverage is in place, Universal Access can be implemented.

¹⁴ See Annexes Report, annex *Options for liberalisation and privatisation*.

¹⁵ See also Annexes Report, annex *Mobile licensing with maximum rural coverage*.

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New mobile operators and similar should be selected based on maximum coverage, in particular rural coverage. The main need of the country is coverage and service supply, in particular in rural areas.

Tendering for maximum rural coverage - without subsidies - can be implemented for mobile operators using antenna towers as a yardstick. A high antenna tower with a working base station is expensive, but provides coverage over a large area¹⁶. Once the tower is up, the cost of adding a new subscriber is almost negligible. The foremost reason for using towers as a yardstick is the ease of verifying commitments. Other means for measuring coverage (e.g. population coverage) result in extensive, difficult and disputable calculations of radio coverage and population distribution in those radio coverage areas. A few additional metres of height of one single antenna may result in coverage of several additional settlements.

After tendering for maximum rural coverage for the entire country, the result is a reasonably clear definition of the areas that will be served commercially, without subsidies. After such tendering is completed, areas not served by any operator, or underserved (e.g. only a few telephone lines) will most likely not be served on a commercial basis. Remaining areas need another solution, Least Subsidy Tendering LST, similar to the ongoing tendering for the Eastern Development Region, with subsidies financed from the Rural Telecommunications Development Fund RTDF.

The order of first tendering for maximum rural coverage and only then tendering for subsidised coverage is intentional. The competition for subsidised coverage is then between operators already established in the country, and those operators compete for extending their existing network based on LST. No cost for a new headquarter or other initial establishment in the country is needed for the subsidised tender. In the case of non-established entrants submitting offers for subsidised areas, they have to include the cost of establishing and operating headquarters and other establishing actions, increasing the price of the offer.

Exempting small rural operators from some fees is an attempt to support such operators. Otherwise these operators should be treated equal to other operators, e.g. have normal interconnection etc.

The draft Policy does not include specific measurable **objectives** for rural areas. The 1999 policy did include several objectives, which may have contributed to the substandard performance. The previous objective of two telephone lines per VDC means an average of 2500 persons per telephone line, which is far below any level of decent supply. In 2001 China had achieved 12 persons per fixed telephone line in rural areas, not including mobile.

Achieving an objective should always be a significant step forward, deserving thanks and reward. For that reason the level of an objective should be in the optimistic end of the range of realistic possibilities, not in the pessimistic end.

¹⁶ Handset coverage could be 100 - 400 sq. km, and significantly larger coverage is possible when handsets are connected to fixed antennas (similar to TV antennas), provided line-of-sight to the antenna tower is available.

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The Consultants' **estimate** for the outcome of the mobile tenders and LSTs (within a few years from introduction of telephony) is 50 - 100 lines per VDC, either fixed or mobile, which means 50 - 100 persons per line. The objective two lines per VDC was originally established as an interim minimum step, with further lines installed on demand. The objective of *minimum two lines* may in reality be interpreted as a ceiling, which would mean that the too low *objective* becomes an *obstacle*. E.g. the RTS tender for the Eastern Development Region rewards the operator with reduced competition if achieving the 2 lines objective¹⁷.

The other specific objective in the 1999 policy was that operators shall invest 15 % of all their investments in rural areas. This is too low. The Consultants estimate that the portion of investments needed in rural areas is 50 - 80 %, as the rural demand appears to be almost equal to NTC's present revenue, and 88 % of the population lives in rural areas. The 15 % objective has later on informally been understood as a ceiling, *no more is needed*. Also in this case the objective may in reality be an obstacle. The overall result is the present status with severely underserved rural areas.

The Consultants' proposal is to abandon the objectives of 2 lines per VDC and the 15 % requirement for rural investments. Tendering for maximum rural coverage is likely to result in better achievements, but it is impossible to give a good advance estimate for the outcome of the tenders. The 15 % objective still remains in the legislation, but is expected to be ineffective.

For these reasons the policy includes an **estimate** for rural penetration, 50 - 100 lines per average VDC, but no specific **objective**. Not all of this will be achieved immediately, but can be expected within a few years from implementation.

5.2 Universal Service Obligation

Universal Service means that virtually all households can be offered an own connection, at an affordable, but approximately cost based, price. This is not possible in a developing country.

Service provision obligations can be imposed so that dominant operators have to provide service to customers at normal rates in the areas where such service is offered, and do not have the right to refuse service. Full implementation of such an obligation is a long term objective, but is included in the proposed policy. For the time being the obligations are proposed only for urban areas, but may be extended to rural areas in a review of the policy.

It is proposed that service provision to other operators be on higher priority than services to customers. Service provision to other operators is proposed to be mandated in one month as a main rule.

¹⁷ See Section 9 of the Request for Applications for the Rural Telecommunications Services for the Eastern Development Region.

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5.3 Develop corporate telecommunications services for corporate customers

The special needs of corporate customers have not been met so far¹⁸. Good corporate services are needed for the more advanced business community, also for the planned IT export industry.

In order to improve the situation, one or more operators should be introduced to serve the business community. A Standard Licence is sufficient to provide such services, but an encouragement exercise would probably be needed to create such an operator with a specialisation in corporate services and facilities provision to other operators.

Internet is developing so that broadband access is a necessity for professional users and advanced business users. For that reason broadband access should be offered. The mainstream technologies elsewhere are ADSL and cable television modems. ADSL is possible only on existing fixed telephone lines. NTC should be obliged to offer ADSL, not only to users but also to ISP's for resale.

5.4 Liberalisation of telecommunications sector

A stable and predictable regulatory regime means that operators know that major changes are not likely, and that the required changes are known well in advance. Once the Open Licensing Regime is implemented, further changes are likely to be small. All legislation, rules and regulations should be published and readily available¹⁹, in addition also the application of legislation. Legislation should also be enforced, otherwise it is not needed.

The legislation should be updated to correspond to the approved policy and to give a good basis for policy and regulatory work²⁰. The framework should provide an environment where operators can focus on business rather than on regulatory matters or various disputes on the rights included in various licences.

The key document for the recommended liberalisation is the annex *Open and technology neutral licensing*.

No significant minimum requirements for getting a Standard Licence should be introduced. No technical or financial requirements are needed.

Technology neutral licensing means that no technology will be specified in licences or even in radio spectrum permits. Thus disputes e.g. about IP telephony will not occur, as any operator may use IP telephony. The main purpose is to ensure that any new technologies can be made available to the Nepalese users, without undue delay or licensing bureaucracy. Nepalese users have the right to benefit from technology development and lower cost.

¹⁸ By March 2003 NTC had provided a total of 52 leased lines (source: Management Information System, NTC). If properly provided, the number should perhaps be in the thousands. In 1999 India had 58,000 leased lines, Maldives 164, Sri Lanka 1500, and Korea (Rep.) 500,000 (source: ITU).

¹⁹ Already in use, see e.g. NTA's web site <http://www.nta.gov.np/>.

²⁰ See Legal Report.

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A separate project may be needed to sort out Rights of Way. RoW is needed for water, sewage, electricity, telecommunications (several operators), cable television (several operators), and perhaps some other sectors. Road and street authorities as well as municipal authorities are parties, and UNESCO for the key protected areas. A long term objective should be to put most of the overhead cables underground to beautify the urban areas. Once underground, digging up streets and roads needs some permits and advance location of underground cables and other facilities to avoid damage. All of these matters need co-ordination and reconciliation, and should be sorted out before issuing the mobile tenders. Rights of Way are not included in the official telecommunications policy, but should still be clarified.

Interconnection is a necessity for new operators. Interconnection should also include some provision of network facilities to other operators. NTC has been able to construct its network protected by a decades old monopoly. This is the commonly used reason for requiring incumbents to offer network facilities to entrants.

The opinion of the Consultants is that the present user price level is about reasonable. If new operators enter Nepal and compete with NTC, they will most likely set their prices at these levels or below. If the efforts to bring in several additional operators are successful, competition will take care of prices and little regulation will be needed. Competition is likely to quickly lower international prices, once competition is introduced. Country-wide mobile services compete with fixed long distance services. The recommendation is that new mobile operators should not be price regulated until they are large, and possibly not even after that.

All operators should be subject to the same taxation rules, to ensure a level playing field²¹.

5.5 Introduce Open Licensing regime

The chapter should be self-explanatory. For a more detailed description see annex *Open and technology neutral licensing*.

5.6 Promote private sector participation in operation of telecoms

Private sector participation is a prerequisite for improved service provision. HMG should promote private sector participation, domestic as well as foreign.

After WTO membership, HMG does not have the right to officially favour domestic parties. Some features in lower level legislation and documents may be used to favour either Nepalese or foreign parties. Favouring foreign parties should be out of the question.

The most efficient form of promoting private sector participation is to disseminate information to the private sector. Using Nepalese language is an acceptable form of promoting domestic parties. Each country has the right to use its own language. Some

²¹ See Annexes Report, annex *Report on Ownership Tax and Service Charge*.

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information should, however, be available also in foreign languages. Disseminating information should be systematic, and a publicity plan would ease such systematic work.

5.7 Open the doors to the Information Society

Self-explanatory. No specific objectives are included.

5.8 ICTs for rural end-users

Self-explanatory. See also separate volume *ICT report*.

5.9 ICTs for rural development professionals

Self-explanatory. See also separate volume *ICT report*.

5.10 Commercialisation and privatisation of NTC

Conversion of NTC to a company is on-going, and may be removed from the Policy if implemented before publishing the Policy.

Internal restructuring of NTC and selling shares of NTC may be retained in the Policy if desired, even after conversion of NTC to a company.

See also Annexes Report, annex *Options for liberalisation and privatisation*.

5.11 Ensure successful implementation of policy

Managing the major components of the upcoming telecommunications sector reform is an undertaking lasting several years. A major risk is if MOIC and / or NTA staff change significantly and new staff do not know either the sector or the on-going sector reform. For that reason staffing should be reasonably stable. In order to do so, some incentives are needed, such as training. MOIC and NTA should also have other required resources available, such as literature, statistics and other contacts. MOIC and NTA should also be aware of what happens elsewhere, participating in selected international conferences etc. When the sector reform advances, presentation of the Nepalese approach at international conferences is almost a must.

One tool for monitoring overall success of telecommunications development is usually an annual statistics publication including data on the telecommunications sector, to be used by all stakeholders. Many countries already have such a publication, issued by the regulator. Preparation of the statistics publication can easily be outsourced, either to the private sector or to the Central Bureau of Statistics, if they also undertake sector statistics work.

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5.12 Promoting economic efficiency and fair competition

Self-explanatory.

5.13 Topics in the 1999 policy not included in the proposed policy

Classification of services, which is not needed in the Open Licensing regime, and has caused unnecessary disputes in the past, when included in licences.

Number of operators. Standard Licences do not have any limit on number of operators, and Individual Licences will be tendered.

Technologies to be used. The Nepalese users have the right to benefit from new technologies and related lower cost. If operators in a competitive environment can use any technology, the benefit will be introduced without delay. The WTO rules also set some limitations on definitions of technologies. Also technologies have caused unnecessary disputes when included in licences. The proposal is not to include technology restrictions in licences.

Exact objectives for rural services. The 1999 Policy included requirements for one PCO and two lines per VDC. Such requirements have been used as a ceiling, and are far from demand. The Consultants believe that it is better to try to maximise service provision through tenders rather than set an objective that may be too low (resulting in underserved areas) or too high (unrealistic, not implemented). An indicative *estimate* is set, aiming at average about 75 telephone connections per average VDC, fixed or mobile. Time will show how realistic this is. It is an estimate, not an objective or requirement.

Specific obligations for NTC. Such obligations could be set when NTC is privatised.

Details about exemptions from licensing. Only the principle of exemptions is included, and will be detailed in legislation in due course of time. Exemptions will furthermore need to be updated more frequently than legislation or policies.

Payphones. Payphones (imported, price level US\$ 1000 - 3000 per set) are used for replacing a person collecting call charges. PCOs are recommended, offering employment.

Nepalese ownership. To the Consultants' understanding such ownership is included in other legislation and need not be repeated. It can furthermore be included in tenders.

Tariff rebalancing. Tariff rebalancing is mentioned in the 1999 policy to be completed by 2004, and should thus be finalised. If not fully done, remaining rebalancing will take place when competition opens in 2004. No administrative planning can fully estimate exactly what rebalancing is needed.

Details of interconnection. Details can be worked out in legislation and will anyway require improvement over a period of time.

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6. LEGAL AMENDMENTS

Self-explanatory.

7. AMENDMENTS OF POLICY

Specifies the expected time span of the Policy, and thus expected need for updates.

8. IMPLEMENTING AGENCIES

Mainly MOIC and NTA shall implement the policy.

ANNEXES TO THE POLICY

Self-explanatory