



Organisation Development Centre (ODC)
Developing Healthy Organisation Through People



Antelope Consulting



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For the

Ministry of Information & Communications (MOIC)

Report on Design of Pilot Project

For

**Study on Increasing ICT Access in Rural and
Peri-urban Areas of Nepal (PS-4)**

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1 Project status

This report has been written as part of the World Bank funded project PS-4 *Increasing ICT access in rural and peri-urban areas of Nepal*, for the Ministry of Information and Communications (MOIC). *The report is intended to fulfil the requirements of recommending the Design of the Pilot Projects*, an important part of Phase 2 of this 3-phase project¹. For the purpose of this study, Information and Communication Technology (ICT) is broadly interpreted to mean any electronic technology that can support information and communications. This includes not only fixed and mobile telephony and Internet, but also radio and television broadcasting, and stand-alone computers and other non-networked equipment such as audio and video recorders.

As required by the Terms of Reference, we have already produced three reports:

- *A Sector Overview*, which outlines the state of play in rural development and in the information technology, broadcasting and telecommunications sectors. It also summarises the outcome to date of efforts to provide rural telecentres.
- *A Review of International Experience*, which summarises recent experience in the rural telecoms and ICT sector in other countries, with particular emphasis on experience which may be relevant to Nepal.
- *A Strategy Report*, which sets out various strategies required in increasing the access to telecom infrastructure and other ICT facilities for rural and peri-urban communities. The main strategies described in the report consist of establishing appropriate institutions for managing the relevant projects and promoting the demand for rural ICT access to help communities in their economic and social development.

2 Task to be performed in the Pilot Phase

The work carried out and described in this report is to fulfil the requirements as given below in the Terms of Reference.

2.1 Terms of Reference

Following are the terms of the reference for the task **Design of the Pilot Project**:

The government wishes to conduct a pilot project as a first step in implementing the recommendations of the consultants. The consultants will support in the evaluation of the appropriate “zoning” of the country, evaluate the objective level of service in each region with a cost/benefit approach (according to the penetration goals established), and prioritize the projects, selecting the most promising areas to be served under the pilot project, bearing in mind the available budget.

The consultant will specifically analyze the possibility of expanding Internet Points of Presence in Nepal, installing a small number of commercially viable telecentres in select locations to be expanded subsequently on a commercial basis into a national network of telecentres and public Internet access points.

¹ Background material on the project, including the full Terms of Reference, is available at <http://www.ruralict.ftml.net/np/nepal.htm>

At the end of this task, the consultant is expected to prepare a methodology, terms of reference, sample survey and select a number of locations, in agreement with MOIC and NTA. These selected locations will represent samples of the target areas for the pilot project, in which a demand study will be conducted subsequently, which the consultants may conduct directly or may contract out to a local company.

2.2 Summary of the Report

This report builds on the work so far completed. Following reports have been delivered.

- The Strategy Report.
- Relevant recommendations of other reports which are reproduced in respective reports submitted to MOIC.
- Further desk research, interviews with a range of key people, and discussions within the project team and between the team and MOIC.

This report consists of 7 sections. These sections are summarised as below:

- Section 3: This section presents the targets for meeting the objective of telephone and Internet infrastructure outlined in the strategy report in terms of categories of districts created in accordance with population density, which reflects the topography or difficulty aspects of the district. Objectives and targets for PCOs are developed in substantial detail. Targets of other ICTs like computers for schools and Community radios are also presented. Estimates of subsidy requirement for the medium term are also given in this section.
- Section 4: This section presents basic consideration like purpose and scope of the pilot project, lessons learnt from the past ICT initiatives in terms of required preconditions, community involvement and central support for success of the projects, implication of security in implementation of ICT projects and consideration behind the selection of locations for the pilot project.
- Section 5: This section includes the detailed considerations of design for ICT project components for the pilot phase, their costs and time scheduled of their implementation.
- Section 6: This section describes the purpose of the demand study, TOR of the demand study, proposed methodology to be followed and field work to be carried out. Suggested locations for demand study in accordance with TOR are also presented in this section.
- Section 7: This section includes some important recommendation to NTA and work that is to follow pilot project design.

3 Medium Term Objectives Targets and Costs for ICT Projects

Objectives for telephone and Internet access points in rural areas have been established in Strategy Report. In the following paragraphs, targets for meeting these objectives have been presented *in terms of categories of districts created in accordance with population density*,

which reflects the topography or difficulty aspects of the district. In case of other ICTs like computers for schools, in general implementation is to commence first where electricity is available. In remote districts, as special cases, computer in schools could start with solar power even quite early. In case of Community Radio, more uniform coverage of the large part of population is to be aimed at. This section also gives the estimate of subsidies required.

3.1 Objectives for rural telephone service

For rural telephone service, as suggested in the Strategy Report, let us set the following national objectives, which are achievable and determine the extent of what NTA should plan for:

- **By mid 2007: Telephone service, at (or near) normal current NT PSTN rates, available within a week of request, throughout areas covering 85% of Nepal's population.**
- **By 2010: Telephone service, at (or near) normal NT PSTN rates as they will be then, available within a week of request, throughout areas covering 98% of Nepal's population.**
- **Continuing: At least one phone line (PCO) to be installed and available for public use in any community over 500 people, which is within an area of radio coverage for telecom service (e.g. within range of a CDMA base station), and requests this. If funds permit, this could be extended to communities over 200 people - working towards the eventual objective of "phones within shouting distance" for everyone.** In the absence of settlement data, to make quantification easier, this objective set earlier has been restated in terms of having one PCO close to each primary school location. This is accessed by 89.9% of rural population within 30 minutes, by 97.5% within one hour, 99.8% within 2 hours (NLSS II).

3.2 Targets for CDMA Wireless Network Coverage for telephones in rural areas.

The targets set for the entire country include the coverage expected from NTs CDMA network and also the additional telephone service coverage resulting from the work carried out with subsidies from proceeds of RTDF. *All these targets are subject to the condition that the security situation will permit the work to go on without much hindrance.*

3.2.1 Categorization of districts for estimates of coverage

In order to estimate the coverage of the population, the whole country is divided into 7 categories of districts in accordance with the range of population densities as given in Table 3.1 (for detail of the districts see Annex 1). The difficulty posed by topography is reflected in terms of population density. Building of terrestrial communication infrastructure becomes more difficult as we move from category A (with lowest density) to G (with highest density of population). Therefore, the estimates of percentage of population covered by NT's CDMA network (and similarly for entire network to meet the national objective) in each category has been estimated based on this degree of difficulty posed by topography and population scatter.

TABLE 3.1: CATEGORY OF DISTRICTS IN ACCORDANCE WITH POPULATION DENSITY

SN	Category	Population Density (psqkm) range	Number of districts	Mountain districts	Hill districts	Terai districts	Remarks
1	Category A	4-12	5	5	0	0	
2	Category B	33-65	12	9	3	0	
3	Category C	80-150	17	2	15	0	
4	Category D	151-196	16	0	12	4	
5	Category E	204-277	9	0	5	4	
6	Category F	319-817	14	0	1	13	
7	Category G	1895-2739	2	0	2	0	Capital
8	Totals	-	75	16	38	21	

Psqkm= persons per square kilometre

3.2.2 Population covered by NT's CDMA network

The population proposed to be covered with NT's CDMA network is given in Table 3.2. The targets of coverage are given in accordance with density of population which is also the indication of degree of difficulty the terrain imposes in covering the area. The CDMA network coverage ranges from 30% to 100 % of population by 2007 depending on which category of districts is being considered. The average figure for CDMA coverage of the whole country is estimated at 81% in the same period. By the year 2010 coverage ranges from 70% – 100% of the population.

TABLE 3.2: EXPECTED COVERAGE OF NT'S CDMA NETWORK

Category of District	Total population	Population density range (persons/ square km)	% of pop. covered by 2007	Pop. covered by 2007	% of pop. covered by 2010	Pop. covered by 2010
Category A (5 districts)	138,645	4 to 12	30	41,594	70	97,052
Category B (12 districts)	1,476,881	29 to 65	55	812,285	80	1,181,505
Category C (17 districts)	3,848,137	80 to 150	65	2,501,289	85	3,270,916
Category D (16 districts)	4,916,595	151 to 200	75	3,687,446	90	4,424,936
Category E (9 districts)	3,498,154	201 to 300	80	2,798,523	95	3,323,246
Category F (14 districts)	7,965,705	301 to 877	95	7,567,420	100	7,965,705
Category G (2 districts)	1,307,306	above 877	100	1,307,306	100	1,307,306
Total (75 districts)	23,151,423		81	18,715,862	93	21,570,666

3.2.3 Population to be covered by NTA with subsidy

Table 3.3 indicates the national coverage targets of the population and NTs estimated coverage for years 2007 and 2010. The difference of 5 % which is seen for the year 2010 is to be met by the subsidy. In absolute terms this difference is about 1,172,773 people by reference to the population census figures of 2001.

TABLE 3.3: NATIONAL AND NT'S TARGETS OF COVERAGE OF POPULATION CATEGORY WISE

Category of District	Number of districts	Population density range (persons/square km)	Total population	% of pop. covered by NT by 2007	Target % of pop. covered by 2007	% of pop. covered by NT by 2010	Targeted pop. By 2010 (%)	% pop. covered with subsidy	Pop. covered by 2010
Category A	5	4 to 12	138,645	30	55	70	90	20	124,781
Category B	12	29 to 65	1,476,881	55	68	80	93	13	1,373,499
Category C	17	80 to 150	3,848,137	65	75	85	95	10	3,655,730
Category D	16	151 to 200	4,916,595	75	78	90	98	8	4,818,263
Category E	9	201 to 300	3,498,154	80	83	95	100	5	3,498,154
Category F	14	301 to 877	7,965,705	95	95	100	100	0	7,965,705
Category G	2	above 877	1,307,306	100	100	100	100	0	1,307,306
Total	75		23,151,423	81	85	93	98	5	22,743,438

3.3 Targets for Public Call Offices (PCOs) by 2010

3.3.1 Objectives

PCO facility is located near primary schools so that about 98% of the population will have to walk less than one hour and about 90% of the population less than 30 minutes to reach a PCO facility.

The PCO Objective established in the strategy report for Public Call Offices is one PCO for settlements greater than 500. In absence of settlement data for quantification of PCOs required, this more tangible but roughly equivalent approach is now suggested. If public telephones are made available close to primary school locations, 91.4 % of the population could access public phones within 30 minutes and 97.9% could do so within one hour. In the rural area 89.9% of the population could access within 30 minutes, 97.5% would do within one hour. These figures of access % for primaries schools are taken from NLSS II of Bureau of Statistics.

3.3.2 Targets for PCOs

Targets for PCOs to be developed with subsidy network by NTA are given in the fifth column of the Table 3.4 per category of the districts, which ranges from 50% in category A to none in category G of the total required PCOs.

A large portion of PCOs would come in private sector, either franchised by NT or operating by them. In category A (mountain districts) about 50% may need subsidy while in the easier districts it will be as low as 10%, while category G which is capital city will not require any PCO with subsidy. In this study we have assumed that community requiring subsidy will require it in full for establishing the PCOs. However, we may find some communities even among these who could contribute something towards setup cost. This of course would reduce the total subsidy requirement but for the purpose of estimate this conservative approach is preferred.

PCOs under subsidy will be needed in the CDMA network as well as the network created by NTA with subsidy. The PCOs required under NTA created network are assumed to be in proportion to the population covered by that network and the rest in the CDMA network. This means, in Table 3.5, column 6 gives 50% of PCOs would require subsidy of which 20% (column 5 of the same table) will be in the NTA created network. The reason behind it is that, in more difficult areas not covered by CDMA, NTA will generally create VSAT network on the basis of one PCO per terminal.

3.3.3 Cost Estimate for Subsidy Requirement

Here it is assumed that the *network created with subsidy will be VSAT network and subsidy network is coming to the areas where population is to be covered by PCOs alone*. Being fringe area all PCOs will require subsidy is another assumption. One terminal is needed per PCO in VSAT network, subsidy for which is estimated at \$5000 (terminal or PCO). PCOs requiring subsidy to be located within NT's CDMA network, will only require terminal equipment (CDMA set) to be provided under the subsidy. This is calculated at \$250 per site. Table 3.5 gives all the details of these calculations. *Column 5 gives the % of the population covered by the subsidy network. Column 6 gives the total number of PCOs required for achieving the access objective. Column 7 gives the % of the PCOs that will require subsidy. Column 9 gives the number of PCOs that will be established in subsidy network {(column 7/ column 5) x column 6}. Column 10 gives the PCOs to be established in CDMA network (column 8—column 9). The total subsidy under the present assumption works out to amount about \$9.7 million. However, extending NT's CDMA network will be possible in most hilly areas by providing subsidy which will be less costly than VSAT. Therefore, appropriate action required can be determined at later stage when CDMA network is laid out by NT.*

**TABLE 3.4: NETWORK COVERAGE BY 2010 BY NT AND UNDER SUBSIDY,
& ESTIMATE OF PCOs REQUIRED UNDER SUBSIDY**

Category of District	Number of districts	% of pop. covered by NT by 2010	% of pop. covered in national target by 2010	% of pop. covered with subsidy network	Number of PCO locations	% of PCOs requiring subsidy	Number of PCOs requiring subsidy	PCOs under the network created with subsidy	PCOs under the network created by NT
Category A	5	70	90	20	529	50	265	118	147
Category B	12	80	93	13	2657	40	1063	371	691
Category C	17	85	95	10	6373	25	1593	637	956
Category D	16	90	98	8	5596	15	839	448	392
Category E	9	95	100	5	4320	10	432	216	216
Category F	14	100	100	0	4981	10	498	0	498
Category G	2	100	100	0	1282	0	0	0	0
Total	75	93	98	5	25738		4690	1790	2900
costs of PCOs in \$								8,949,721	725,026
costs of PCOs total \$			9,674,747						

Assumption

- Population % to be covered by subsidy network contains number of PCOs in proportion to population
- And all the PCOs are to be established by VSAT network.
- Each PCO requires one VSAT terminal

- IF NT is allowed to extend CDMA network under subsidy this subsidy requirement will decrease substantially
- VSAT terminal cost is assumed \$5000 and PCO in CDMA network is fixed wireless set and solar power=\$250

3.4 Public Internet Access Points

3.4.1 Background

There were 26 ISP licensees by July 2004. The number of Internet accounts in 2004 is estimated at about *50 thousand* and the number of users is estimated at 200 thousand. Kathmandu Valley has about 80% of all users and the rest are in other towns of the country. The use and reach of Internet beyond the Capital has been minimal. High dial-up access and international satellite backbone costs, lack of national content and local language, illiteracy, poverty have been inhibiting factors in the Internet growth. You could say that there is no rural Internet use at the moment. Demand for Internet service in rural Nepal is still very low.

A major factor limiting Internet demand outside main centres is high access cost. Only in the second half of 2004 has Nepal Telecom been able to establish dial-up access at a local fee in 55 district headquarters through their POPs or virtual POPs. Factors like low literacy, poverty, lack of applications useful for the rural communities, near absence of computers and Internet access in government secondary schools and absence of substantive government initiatives in this direction, and the affordability of computers and Internet access for the majority of Nepali population, do not favour any sizable deployment strategy for Internet access facilities in the present moment.

However, to a considerable extent, we expect that the roll-out of rural telephone networks as proposed above will also provide Internet-capable infrastructure. Where this is so, making public Internet access available “only” requires suitable end-user equipment, premises, and support – a significant challenge, but one which can be met in many different ways, using the demand-driven community-based approach described in the final strategy report. This would mean the connectivity will be widely available. Ways of making it affordable at least for the public Internet access would require a joint effort of NT and NTA. Computers for Secondary Schools will really contribute to the growth of Internet in rural communities.

Internet is needed in all District Headquarters for administrative reasons. In order to grow demand and make Internet service accessible to as many people as possible, we propose fostering public Internet access points (assumed to offer affordable rates) in selected Rural Market Centres (RMC). Between 1996 and 2002, the Department of Urban Development commissioned the Central Department of Geography at Tribhuvan University to carry out studies of small towns and market centres in 34 Districts. Based on scanning these, we estimate that it should be possible to “cater for” good proportions of VDC populations (say, half or three quarters) by providing Internet access at a few RMCs in addition to the District Headquarters. Our rough estimates for the number of RMCs which may be required in different terrain types are shown below.

3.4.2 Objectives for Public Internet Access Points

In view of NT’s CDMA network and district satellite communications infrastructure which provides for Internet connectivity to all DHQs in the time frame of 2006, draft objectives for establishing public Internet access points outlined in the strategy report need to be modified

a little with respect to target year as below. In view of the present experience of cybercafes coming up on their own in the private sector within some months of introduction of local dial-up rates in Internet access, experience shows that it is wise to wait for some time for private sector to come forward before employing incentives for establishing cybercafes by the private sector.

By 2006/2007: at least one public Internet access point in each District Headquarters town and in a municipality.

By 2008: at least one public Internet access point in each “first round” selected RMC.

By 2010: at least one public Internet access point in each “second round” selected RMC.

The “selected RMCs” will be identified so as to include the highest reasonable proportions of the local VDCs’ populations within their joint hinterlands. Identifying such RMCs is a detailed task beyond our immediate scope, but easily within the capability of local groups with central support.

The selected RMCs will often be Ilaka centres. Electrification will normally be seen as a higher priority than Internet, and adequate electricity supply will make provision of public Internet access much cheaper², so we expect that the roll-out programme for public Internet access will generally follow that for electricity.

Terrain type	To cater for 50% VDCs of District (“First round”?)	To cater for 75% VDCs of District (“Second round”?)
Mountains	DHQ + 0 or 1 RMC	DHQ plus 1 or 2 RMCs
Hills	DHQ plus 1 to 3 RMCs	DHQ plus 2 to 6 RMCs
Terai	DHQ plus 1 to 3 RMCs	DHQ plus 3 to 5 RMCs

By “cater for a VDC” we here mean “provide an Internet access point in a place which is commonly visited (for other reasons, e.g. buying goods or selling produce) by people from that VDC”. We expect this means that it will be possible for messages to be carried between people in the VDC and the Internet access point, say once a week, without anyone making a special trip.

We call this “Internet within walking distance”. This is not a high level of Internet access, but we feel that at the moment, no more than this can be justified as a universal provision. Of course, in many areas greater provision will be achieved by market forces.

We are deliberately not specifying the type of public Internet access point that should be provided. We expect this to vary from place to place. In some places, private entrepreneurs will open commercial cybercafes. Elsewhere, the Post Office may introduce e-post points; a school or college which has obtained Internet access may offer access to the public outside school hours; an Agricultural Information Office may include Internet access; a Community Radio base station may provide public Internet access; and so on. It is up to the DDC to monitor what is available and what else is needed.

3.4.3 Targets for achieving Public Internet Access objectives

3.4.3.1 Broad target for PIAPs

Public Internet Access Points shall be established wherever local dial-up rates are available for access in the following manner:

- In DHQs - by July 2006/2007.
- In first round of market centres - by July 2008.
- In second round of market centres - by July 2010.

3.4.3.2 Target for PIAPs based on category of Districts

The five mountain districts belonging to category A are sparsely populated and are likely to have one more market centre of prominence in each district apart from the DHQs, whereas the districts of Category B onwards are progressively more densely populated as well as larger in population size. Therefore, it is natural that they will have several market centres which will require Public Internet Access Points. Table 3.5 below presents tentative estimates of PIAPs. See Annex 1 for districts names under each category. Several DHQs, particularly bigger municipalities, already possess such PIAPs, called cybercafes, in general only a few, some in much larger numbers. *Table 3.5 contains the figures which include one PIAP per DHQ, except for Kathmandu and Bhaktapur which have been taken out in this estimate. In several of these bigger DHQs there are cybercafes already present which are not accounted for. PIAPs in RMCs are also known by Telecentres.*

TABLE 3.5: GROWTH OF PUBLIC INTERNET ACCESS POINTS IN DHQs AND RMCs

SN	Category	Population Density (psqkm) range	Mountain districts	Hill districts	Terai districts	By 2006 In DHQs	By 2008 in RMCs	By 2010 in RMCs	Total PIAPs per district	Total PIAPs
1	Category A	4-12	5	0	0	1	0	1	2	10
2	Category B	33-65	9	3	0	1	1	2	3	36
3	Category C	80-150	2	15	0	1	2	3	4	68
4	Category D	151-196	0	12	4	1	2	4	5	80
5	Category E	204-277	0	5	4	1	2	5	6	54
6	Category F	319-817	0	1	13	1	2	6	7	98
7	Category G	1895-2739	0	2	0	Several	Several	Several	Several	-
8	Totals	-	16	38	21	73 +several	124 +several	273 +several		346

3.4.4 Cost Estimate of Cybercafes in DHQs and Telecentres in RMC

The following table 3.6 presents estimate of total cost for Inter access facilities as estimated above in table 3.5. The unit cost applied in the pilot is based on the present suggestions where RUPP is suggested to one of the collaborating partner. The advantage of collaboration with RUPP saves lot of administrative cost which is not included in these estimates along with other cost in installation and post installation supervision and support as well. Therefore, the cost beyond pilot project includes slightly higher per unit figures. The total cost of the Internet access facilities is estimated to be Rs.82, 980,000.

TABLE 3.6: TOTAL COST ESTIMATES OF CYBERCAFES AT DHQS AND TELECENTRES AT RMCs

Description	Unit price	Cost of cybercafes at DHQs and Costs of Telecentres at RMCs all in Rs.					Total cost
		Numbers	pilot project cost	Cost in 2006/2007	cost added 2007/2008	Cost added 2009-2010	
1.0 Cybercafes by in DHQs							
1.1 in private sector (training on management +computers)	33,000	15		495,000		-	
1.2 in private sector but more assistance including training	60,000	24		1,440,000		-	
1.3 No help required	-	10		-		-	
1.4 pilot	21,000	3	63,000				
2.0 Telecentres by 2008							
2.1 Telecentre establishment & one year cost	298,000	113			33,674,000	-	
2.2 pilot lump for 11 telecentres	2,906,000	11	2,906,000				
3.0 Telecentres added by 2010							
3.1 Telecentre establishment & one year cost	298,000	149				44,402,000	
3.2 Support costs							
			2,969,000	1,935,000	33,674,000	44,402,000	82,980,000

Assumption :

1. training costs are higher in future because it will be little more than what is included in pilot
2. Telecentre training costs are also slightly higher if RUPP is not assisting after pilot beyond pilot

3.5 Computers and Internet for Schools

Introducing computers in higher secondary schools is extremely important for bridging the digital divide. The students have to learn to use computers and also obtain information and knowledge by using computers. The strategy workshop also emphasised that introducing computers in schools was going to be single most important step in the direction of building capability to use and benefit from ICTs in rural areas. There are schools which are fully aided and some completely unaided by the government. Unaided schools are run by donations of the community and could also be through some contribution from VDCs and small sums they raise from the fees. Therefore, the project will support these schools. Currently MOES's figure for the year 2004 gives the total numbers of secondary and lower secondary schools as 3258 and 5664 having 509279 and 1296295 students respectively. Following is the long-term (10 year) objective for this project:

TABLE 3.7: SECONDARY AND LOWER SECONDARY SCHOOLS (2004)

Types	Secondary school (ss)	students	students/ss
Aided	2291	429978	188
Unaided	967	79301	82
Total	3258	509279	156

Institutional (private schools)	1289	34485	27
		Lower secondary	
Aided	3759	1042617	277
Unaided	1905	253678	133
Total	5664	1296295	

3.5.1 Objective

Provide 80% of lower secondary schools and 100% of higher secondary schools and above with computers and Internet by the year 2015.

3.5.2 Targets

Unless some concerted effort is made, no results can be achieved. On the basis of work going on to bridge the yawning digital gap between countries and within the communities of countries themselves, some action programmes must be drawn up for implementation in the particular area of building the capabilities of the youth in this direction. These targets and objectives will certainly stimulate discussion which will result in proper strategy for implementation:

1. **Target 1:** Provide computers to secondary schools or higher, for learning to use computers, wherever there is electricity supply and local competence and interest by 2007. These are further divided in to sub-targets as below:
 - a. **Sub Target 1.1 (Pilot phase)** – In the pilot phase, the projects for the high schools will generally be taken in those districts where cyber cafes are being established in the DHQs and market centres are being provided with PIAPs. About 20 schools in each District will be taken up. This will be implemented within a year (2005-2006)
 - b. **Sub Target 1.2 (year 2006)** - 160 schools under the pilot project
 - c. **Sub Target 1.3 (year 2007)** - 320 schools under the normal project
 - d. **Sub Target 1.4 (year 2008)** - 640 schools under the normal project; the major part of this will be in Kathmandu Valley.
2. **Target 2:** Provide Internet access to schools already equipped with computers and requesting it by 2008. The implementation of this target will take place simultaneously as computers are installed in schools where Internet is available, or Internet will follow as Internet connectivity becomes available.
3. **Target 3:** Provide computers and Internet access to 25% of secondary schools, using solar power where no electricity is available, by 2009. Between years 2008 and 2009 this target is to be fulfilled.
4. **Target 4:** Provide computers to 90% of secondary schools by 2012. By the year 2012 secondary schools will have more than originally provided to have better coverage. Adding more computers means more teachers will have to be trained.
5. **Target 5:** Cover secondary schools 100% and lower secondary schools say 80%, with computer and Internet by 2015. By the year 2015 nearly all schools down to lower secondary level students should have access to computers, for learning to use computers and for other educational purposes.

Talking about **Target 1**, the number of house holds in the country using electricity is about 40%. As the population using electricity is more likely to have a larger proportion of higher secondary schools, this would translate to at least 1300 higher secondary schools (40% of 3258) needing computers. We need to initiate this particular part of the project as soon as possible. We need to provide computers to over 400 secondary schools per annum. Experience has shown that schools are able to raise reasonable sums through VDC and DDC. Therefore, the amount of subsidy requirement will vary depending upon the capability of the communities to bear a portion of the total cost. As we go into less developed areas the subsidy may increase. Currently about 68 secondary schools have enjoyed this benefit through COPPADES (an NGO). COPPADES has provided refurbished computers to schools obtained from computer donors overseas. COPPADES has a plan to provide 80 additional schools this year (2005). Basic requirements for this implementation are:

1. Creating demand from schools/ communities
2. Creating capabilities within the districts to install and support equipment - local NGOs and enterprises
3. Creating training capabilities in the regions and the districts
4. Training of higher secondary teachers
5. Supervision and installation
6. Mobilising some internal resources from schools
7. Obtaining free used computers refurbished or to be refurbished to keep the project cost down.

3.5.3 Strategy

1. In initial years provide computers from donations, from abroad and within the country.
2. Motivate NGOs and social organisations to assist in these projects.
3. Build capacity of local NGOs and local entrepreneurs (in DHQs) - this applies for all computer related implementations.
4. Initial provisions will be limited to 5 computers in each school, but later years will have to add 5 or more computers.
5. This is going to be a major project item. So the unit which handles this particular project could move into the new body, once such a body is created.

3.6 Community Radios

3.6.1 Background

The number of radio licensees are 56 including Radio Nepal, out which 46 are operational. 36 of these stations are commercial whereas 16 are Community radios. Region wise, stations are 8 in the Eastern, 22 in the central, 16 in the Western, 8 in the Mid-West and 2 in the Far Western Development Region. The number of districts with FM stations is 21. From the ownership point of view, the majority of CRs are owned by NGOs and cooperatives. Areas served by CR of Madan Pokhara (CRM) have focussed on 23 VDCs and one municipality, but service covers 65 VDCs. Estimated listeners of CRM are about 500,000. People's

participation is extensive in CRM. General assembly of a community radio (e.g. CRM) comprises representatives of listeners, Community and grassroots organizations, professional organizations, friends of CRM, life-members, intellectuals.

The programmes include discussion on local issues, and development news of local interest. Entertainment and promotion of local culture are also main objectives. The community radios play a very important role in local development and awareness building of the communities. Combined with Internet, its role could be further enhanced in providing information the local people want.

Community radio has proved a very powerful, effective and appropriate and cost effective local media for social and cultural development, poverty alleviation and empowering of rural people, especially disadvantaged groups. Community Radios could be made capable to access Internet and make information available to the people by answering the letters received seeking information, which suites the aural society better. The station could also be the site for a local telecentre.

3.6.2 Objective of Community radio

25 Community Radio Stations to be added in the country, insuring reasonable geographical distribution to cover the population throughout the country by 2010.

3.6.3 Target

Five community radios should be established each year for the coming five years i.e. by 2010. Piloting of this item is not necessary. It is recommended that NTA work with Association of Community Radios for this implementation. Criteria for selection and providing assistance and monitoring of the entire project can be easily developed with the assistance of this association or community radio support unit of NFEJ.

3.6.4 Cost

The projects can be implemented on a cost sharing basis. A contribution of about \$25,000 from the project per community radio station will be required. The total cost to the subsidy would be about \$125000.

3.7 ICT Programme Subsidy Estimate for years 2005 to 2010

In this section the summary of the subsidies which may be required in the next five years are presented. Computer and Internet in schools project though depends on the contribution of schools for almost the half of the cost in the early part of the project, we will find more and more difficult to find schools contribution at the later part of the project as we go into the more difficult and unaided (by Govt.) schools. Therefore more subsidies are foreseen in later years for the schools.

TABLE 3.8: SUBSIDY REQUIREMENTS IN THE NEXT 5 YEARS FOR ICT PROGRAMME

Description of the ICT component	costs for (2005-2010) Rs.	costs for (2005-2010) \$
Subsidy for PCO and Network	686,907,037	9,674,747
Public Internet access points (Cybercafes in DHQs & telecentres in RMCs)	83,456,000	1,168,732
Computers and internet in schools	106,261,570	1,496,642
Community Radios	35,500,000	500,000
Regional Internet switching	613,800	8,645
Content development	71,000,000	1,000,000
Total ICT activities	983,738,407	13,855,471

4 Basic Considerations for Pilot Project Design

This section presents basic consideration like purpose and scope of the pilot project, lessons learnt from the past ICT initiatives in terms of required preconditions, community involvement and central support for success of the projects, implication of security in implementation of ICT projects and consideration behind the selection of locations for the pilot project.

4.1 Purpose of the pilot project

There is a variety of possible ways in which the pilot project may contribute to a longer-term strategy. For example:

- Demonstrating a variety of successful ICT development paths (such as some of the illustrations in Section 6.2 of the strategy report, or others).
- Building awareness of ICTs and their applications in rural Nepal.
- Devising criteria to help the authorities to allocate limited subsidy funds fairly and appropriately among deserving projects.
- Producing initial working drafts of support materials for applicants for funds, as well as the procedures needed by people who are responsible for disbursing funds.
- Quantifying appropriate subsidy levels for different types of activity.
- Boosting ICT demand in certain areas, which will encourage non-subsidised provision of infrastructure.
- Piloting institutional structures.
- Testing certain business models or technologies.

These possible objectives are in roughly what we understand to be MOIC's current order of priority. Management capability is the stronger constraint than funding – the whole thing must be manageable by NTA may be with some consultant support. It is therefore probably over-ambitious to aim to achieve all of these; in particular, we expect that the pilot will use proven technologies.

4.2 Scope of the Pilot Project

The scope of the pilot project includes description of ICT project components to be included in the pilot phase of implementation. In the beginning, reasons of not including telephone and Internet infrastructure implementation in the pilot phase are presented.

4.2.1 *Rural Telephone and Internet Access Network not included in the Pilot Phase.*

As already outlined in the *Strategy Report*, the rural telecommunication access infrastructure being built by Nepal Telecom (NT) under its CDMA Network Project (wireless access for telephone and Internet) is to provide radio coverage to almost 93% of the population of the country by the year 2010. This figure of coverage has come from the discussion carried out between the team members of the consultant and NT's senior staff. The national objective of 98% radio coverage of population has been recommended in the Strategy Report, the additional 5% being supported by non-commercial funding in a move towards Universal Access. *The implementation of CDMA network is very much dependent on the security situation of the country and this is particularly true for the coverage of hilly areas.* Therefore, the population coverage objectives in percentages are very much dependent on security situation.

The CDMA Project has started receiving early shipments. However, the CDMA wireless coverage details are yet to be worked out in detail by NT. The Consultant has attempted to analyse how this coverage would materialise in relation to topography and population density of the country. This is presented in section 3. As the CDMA network appears to take care of the major part of the objective presented in the Strategy Report, NTA is required to determine the gaps not covered to plan for further telecom network under subsidy to meet the national objective. As the CDMA plan is just underway and is proposed to cover the larger part of the country, NTA is strongly advised to determine the details of the gaps throughout the country so that it could plan to cover them in a timely fashion. *This task may not look very urgent, yet the sooner it is started, the better it will be for planning.*

As the activities for major work for rural area are already underway, and the cost of CDMA equipment seems to be very attractive for implementation in rural areas, any other network implementation is not recommended in the present situation. *Therefore, the pilot project will not embark on any telephone or Internet access project involving new network build.* Thus the pilot project will include only the components discussed below. These main components proposed in the pilot project have been already tried out. The lessons learnt from the past initiatives are being utilised to help these implementations to be sustainable.

4.2.2 *Major Components of ICTs for Rural Areas included in the Pilot Phase*

Apart from the telephone and Internet infrastructure, mainly following ICT components were identified for implementation in rural areas.

1. **Cybercafes in DHQs:** Primarily aimed at providing Internet access facility is proposed to be multifunctional private businesses from the point of view creating capability in providing computer related services in the district level and making it viable business in the small towns of DHQs. The cybercafes will provide computer hardware, software, and training in applications and use of computers. The reason to combine all these functions in one unit is that use of computers and Internet is in its infancy in small DHQs, and total demand for ICT related services is small. Without combining these functions it will be difficult to make a good business case. At the same time, the various ICT projects planned to be launched need these services.

2. **Public Internet Access Points (telecentres):** Telecentres aimed at primarily to provide Internet access in RMCs are proposed to be implemented by utilising useful lessons learnt from the earlier telecentre projects in order to make them sustainable.
3. **Computers and Internet for Schools:** The students in rural areas generally have to go to government schools which have no computer facilities. This is widening the gap between these poor students and their urban counterparts or richer rural students who could afford to go to urban private schools. This ICT component is proposed to address this gap as well as aimed introducing computer education and internet access to government schools which is very much required to produce the computer literate and informed manpower to avail them with job opportunities and employment in the information age.
4. **Regional Internet Exchanges Facilities under nPIX:** We are witnessing growing need of exchanging traffic among users of services of national ISPs locally. This project component is aimed at extending this peering arrangement among ISPs also in other major towns than Kathmandu.
5. **Community Radios:** Although the present study brought out very clearly the positive and constructive role the community radios play in the rural development at very reasonable cost in the context of Nepal, the prevailing situation is not conducive for its implementation, thus ruling out its inclusion in the pilot project stage and is strongly recommended for implementation.

Therefore, under the present situation, Pilot Project Design will include only the first 4 items described in the above list.

4.3 Basic Preconditions, Community Involvement and Central Support for the Project

All ICT components proposed for implementation must take account, as appropriate, of the following lessons from earlier experience.

4.3.1 Basic preconditions

- **Initial support:** Telecentres require handholding support of up to 2 years to bring to a reasonable level of maturity for the community to own and be able to operate with little help.
- **Security:** Though telecentres have not been directly targeted so far by the insurgents, the security situation must improve. Telecom has been an “off and on” target for attacks. How rural telecom sector is viewed under the conflict situation from both sides of the fence is going to affect the implementation of the telecom connectivity and hence telecentre projects.
- **Connectivity and Cost of calls to Internet:** Normal telecom connectivity with low access charge is essential for any telecentre project to succeed. In the planned network of NT, the local dial-up access charges now being in the districts are going to remove the past situation of costly access at trunk rates.
- **Mains power for telecentre:** Mains power must be available for a telecentre to be viable.

4.3.2 Community involvement

- **Info-mobilisation:** The establishment of telecentres must accompany regular info-mobilization initiatives whereby participating communities are mobilized to exploit ICTs to meet local development needs.
- **Inclusiveness:** All strata of the society must be represented in telecentre users committee. There has been low level of participation of women and dalits in telecentre users committees formed so far.
- **Early users:** Apart from local beneficiaries and community members, local level development workers, government extension workers, teachers and NGO's could also be target beneficiaries of the telecentre. School children also stand to benefit substantially from access to telecentre resources.
- **Local enterprise:** Opportunities exist at the local level to work out public-private partnership arrangements for the establishment and operation of telecentres.

4.3.3 Central support

- **Content production:** The rollout of telecentres should be accompanied by development and deployment of content, services and solutions that cater to local needs and requirements.
- **Off-line applications:** In the face of connectivity costs and difficulties and lack of technical backstopping support, strategies must also be in place for exploiting resourcefulness of ICTs when off-line.
- **Properly resourced co-ordination:** A central level institutional mechanism with clear mandate and mission to coordinate, facilitate and support telecentre related initiatives undertaken by various agencies is necessary. Therefore, NTA would require creating telecentre implementation cell and collaborating with various entities that share the common objective and can contribute in telecentre development before a new entity is created with above attributes.

4.4 Security Situation and Project Targets

The security situation may affect implementation of all ICT related projects in one way or another. Telecommunication projects located basically in interior areas of the districts, particularly in the hilly areas, are much more subject to problems of security. Several DHQs have their main terrestrial communication links damaged by insurgency resulting in loss of access to long distance telephone service for the customers. The telephone users in these areas have to visit a public phone booth (PCO) to make a long distance call. Enhanced satellite communication facilities to overcome this problem are proposed by NT by July 2006 in those problem areas. *The coverage of the CDMA network in rural areas may be affected unless the backhaul terrestrial links and base stations are protected, and also government permits their expansion without restrictions.* The rural hinterland is going to mainly depend on this CDMA network for telephone as well as Internet connection. Therefore, the availability of the CDMA network is going to determine the success of telephone and Internet implementation in the rural areas. *Experience has shown that community owned ICT projects like telecentres and computers in schools have been implemented with reasonable ease in the conflict situation.*

4.5 Need for NTA to work with other Cooperating Agencies in ICT Projects

ICT components other than telephone and Internet infrastructures are also to be implemented by NTA with the funds available in IDA Credit under TSRP project as required by the agreement with the World Bank. *Although the need for setting up new institutional arrangements is not urgent from the point of view of the ICT projects to be implemented under this credit, building up such an institution should commence as soon as possible so that it can start developing its operational procedures for large scale implementation and start receiving funds for projects from other donors. As content development is not included in this study, the new institution could start on this important aspect of ICTs. This would encompass health, education, and agriculture services for the rural areas. Even the task of accelerating projects like computer in schools could be carried out by this institution. Distance education programmes for radio and television could be studied in depth and piloted in view of Nepal's shortage of properly trained teaching staff.* NTA should not unduly burden itself with permanent employees for these activities as these projects will move to this New Agency.

The nature of ICT implementation has to be demand driven for sustainability and entails much decentralised processes of working with communities. Process and procedure in these project implementations require substantially different skills and capabilities from NTA's normal functions. Therefore, NTA is strongly advised to work in cooperation with agencies like DLGSP and RUPP, and well established NGOs like COPPADES, to implement ICTs for rural communities. Working through DLGSP and RUPP, NTA will have the advantage of implementing projects with communities through CBOs already established in municipalities, DDCs and VDCs by DLGSP and RUPP. ICT projects will also benefit by cooperating and coordinating with agencies like AEPC and REDP who support rural electricity projects.

4.6 Selection of Pilot Project Sites and Clustering of Pilot Projects

4.6.1 Clustering of project components district wise

A district is very important administrative unit equipped with government administration for delivery of services as well seat of district level of locally elected governing body (DDC) to oversee the development works of the district. With the decentralisation of authority of line ministries and devolution of political power the districts have become very important unit after the Centre. The implementation of all project components of ICT on district basis has the following purpose and the advantage:

- AS rural ICT projects belong to the district level, they have to fit in total scheme of concept of planning and implementation at district level in which DDC and VDCs are involved.
- By clustering ICT projects district wise, sizable work opportunity can be generated. This will be conducive for development of local entrepreneurship to provide computer related hardware software services. This will also create local employment and save cost of ICT implementation, thus contributing to sustainability to ICT projects.
- For projects to be sustainable, it is necessary that the operation, maintenance and supply of hardware and software services are close at hand for ICT projects and services. The logical location of such facilities for VDCs of a district is its DHQ.
- Districts are required to develop the capabilities for implementation, operation and support of ICT related projects in private sector, NGOs as well as in the public sector.

This is particularly lacking in the small DHQs. As far public sector goes in the districts, through DLGSP capacity of DDCs is being built to develop documentation and information centres at DHQs, which could be enhanced to make it able to plan and manage ICT projects in the rural areas with some effort. Similarly under RUPP, a number of partner municipalities have developed information centres at DHQ/municipal levels and telecentres at the RMCs. Therefore collaboration with RUPP in creating public Internet access facility at DHQs and RMCs by clustering on district basis will be very advantageous in reducing the cost and effort of implementation and supervision of the projects.

4.6.2 Selection of Districts for Pilot Project

Thus the districts chosen for pilot are eight in number, namely Ilam, Dhankuta, Gorakha, Dang, Bardia, Surkhet, Doti, and Kanchanpur. In the pilot project an effort will be to create demand for cybercafes in DHQs (municipalities) and telecentres in RMCs of these eight districts, however, the actual numbers in the pilot project will entirely depend on the interest of the communities concerned after info-mobilisation is carried out and expression of interest by communities emerges. *The number of communities expected to come up for the projects are about half.* These districts have been chosen to take advantage of Information centres and telecentre project management capabilities developed in the DHQs / municipalities under the RUPP in the pilot phase.

We are already witnessing birth of cybercafes in some DHQs since introduction of local dial-up rates in October 2004. *These cybercafes have emerged in several DHQs within about 4 months of local dial-up rates becoming available.* These sites also have some sort of computer training facilities and some hardware and software maintenance capabilities have also sprung up there. Such facilities currently exist in Kanchanpur, Ilam, Dang, Surkhet and Gorakha. Therefore, even if the cybercafes in DHQs component will not be in these 5 districts, they will still remain as good early candidates for telecentre in RMC and computers and Internet in schools in the pilot phase.

In the three districts (Dhankuta, Bardia and Doti), cybercafes have not come up in DHQs. In these districts, computer hardware and software operation and maintenance facilities have not developed yet, the project will include the objective of enhancing the private sector capability to manage such facilities and provide cybercafes. These districts will also be candidates for projects of telecentres in RMCs and computers and Internet in schools.

Availability of Internet access *with local dial-up rates in number of hilly districts since October 2004 being* a rather recent phenomenon, the momentum of Internet growth is yet to be seen. Cybercafes make business sense only when Internet starts catching up with people in the locality. *It may be wise to allow reasonable time for Internet usage to grow and for the private sector to come forward and establish cybercafes in DHQs*

TABLE 4.1: DISTRICTS WHERE CYBERCAFES AND TELECENTRES ARE PROPOSED

District	DHQ	Existing DHQ cybercafe	Pilot project DHQ cybercafe	Pilot project RMC telecentre
Ilam	Ilam	Yes	No	Early, if supported locally
Gorakha	Gorakha	Yes	No	Early, if supported locally
Dang	Ghorahi	Yes	No	Early, if supported locally
Surkhet	Birendra Nagar	Yes	No	Early, if supported locally

Kanchanpur	Mahendra Nagar	Yes	No	Early, if supported locally
Bardia	Guleria	No	Yes	Early, if supported locally
Doti	Silgadhi	No	Yes	Early, if supported locally
Dhankuta	Dhankuta	No	Yes	Early, if supported locally

The location of regional Internet switching facilities is proposed to be located at Biratnagar, Pokhara, Bhairahawa/ Butwal, and Nepalgunj. Another two sites that npIX may consider after further examination are Birgunj and Dhangadhi. This component is largely independent of the rest of the Pilot Project.

5 Design of ICT Project Components for Pilot Phase

This section includes the detailed considerations of design for ICT project components, their cost and time scheduled of their implementation.

5.1 Public Internet Access Points (Cybercafes) in DHQs

5.1.1 Purpose of the Cybercafes in DHQs

Lack of applications is one of the main reasons of low use of Internet or email services even in the Capital City where nearly 80% of the country's users are located. It is necessary that useful applications be developed, for which demand will rise as more people come to know their utility. In order to stimulate the demand and use of ICT applications throughout the country, it is necessary that government undertakes promotional activities. However, unless basic means for accessing services are present services also will not develop. Therefore, to start with, it is high time that at least DHQs have information accessing facilities like Internet.

As DHQs lack in supply and support of computer hardware, software and training facilities for use of computers, it is recommended that establishing of cybercafes in DHQ be combined with capability building of an entrepreneur who would develop to provide training, support and communication services to the people. This support mechanism will contribute expansion of provisioning of services to other projects like PIAP or popularly known as telecentres in RMCs and computers and Internet for schools. This will create IT jobs in the district and save costs by using local human resources.

Thus initial establishment of Cybercafes has a dual purpose – providing email and Internet communications, as well developing the embryonic entrepreneur to provide computer related supply and support including training. Combining of various service activities makes the project more viable, when total demand of such services in a district is rather small. A menu of likely services is given in the following subsection.

5.1.2 Scope of the Pilot Project

In general the project is intended to encourage entrepreneurs to establish cybercafes in DHQs. The first lot of these cybercafes in private sector will be tried in some of those 8 DHQs, where RUPP is involved, under the pilot project. As these DHQs are rather newly formed municipalities, somebody is likely to come forth to establish cybercafes.

In summary, the purpose of promoting establishment of cybercafes in the DHQs is:

- *Provide public Internet accessing facilities in DHQs.*
- *Create the first Cybercafes in DHQs as a first attempt to establish computer hardware and software support, and training in use of simple computer applications, as capability in the district for expansion of ICT services.*

5.1.3 Menu of Services offered by Cybercafes

As summarised in the previous paragraphs, following is the list of services that could be provided by the cybercafes established in DHQs. It is appreciated that such services will develop over the period. The computer projects for higher secondary schools will be implemented in these districts to develop private sector support. These services are more important in the hill and mountain districts, where obtaining such services from the nearby more developed urban area is going to be very costly.

1. Provide Internet and information services to the community (which would include e-governance and B-B ecommerce applications developed by RUPP)
2. Sending/ receiving e-mail
3. Sending fax
4. Chat
5. Voip calls PC to PC , PC to phone
6. Local calls/STD/IDD
7. Photocopying
8. Publications/ printing – page maker type etc.
9. Train students and others in operation of computer and use of applications
10. Supply computer related items – hardware and software
11. Maintain and operate hardware and software.
12. Provide any other service to people required by using ICTs

5.1.4 Service Area

Primarily the service area is the DHQ (municipality) and adjoining area. All government offices, NGOs, and private sector and other projects and people in general will benefit. However, the operation and maintenance of computer hardware and software applications could also include the whole of the district, where such services are required. DHQs are also sometimes convenient locations for obtaining service for rural areas of the adjacent districts.

5.1.5 Ownership of Cybercafes

It is economical to provide all above services, as the demand arises, through private sector in DHQs. The rural ICT development strategy should always include capacity building of the private sector, and local NGOs. This process is more viable than the government support structure to provide such service in DHQs. Private Entrepreneurs will have lots of flexibility in designing operations as required, outside the rigid and costly structure normally put in place in anticipation of demand by the government. Therefore, operations foreseen in the cybercafes in DHQs will be multi-service type, to make them more viable. The extent and variety of services provided will be basically determined by the demand and willingness of the entrepreneur to provide such services.

5.1.6 Business Plans

Business plans would include, as usual:

- **Costs** - both capital and running costs. Capital cost includes the facilities created which are durable. Running cost is annual recurring cost and includes salaries and wages, rents for accommodation and other recurring expenses. Occasional training costs for building up the capacity of the enterprise itself are also included.
- **Revenues** – these depend on services demanded by customers. The menu of services described includes many items. The entrepreneur will be engaged by the project, particularly the “computers in school” training, and support in DHQs that is required during the life of the project. Afterwards it could continue to provide services to the schools.

Much of what the entrepreneur wishes to do is his/her own decision but he will be guided to make an assessment as to what services are needed in order to design his services. He will be helped by the Project to prepare his business plan for the cybercafes and be trained in basic management of his small business.

5.1.7 Modalities of Working in establishing Cybercafes in DHQs

Following modalities could be adopted while working in collaboration with RUPP and DLGSP, in establishing cybercafes in DHQs and other ICT projects. Through RUPP/DLGSP NTA will be in position to establish working relationship with DDCs/VDCs/Municipalities/CBOs. Following actions are required in partnership:

- CBOs (Tole/lane) Municipalities/DDCs and likely entrepreneurs will be informed about the purpose of the cybercafes and basic requirements as to how it could function. The information will also include the longer term objective and strategies of ICT development in rural areas and how the entrepreneur could provide various services.
- The CBO/municipality/DDC will nominate an appropriate person who is a member of the CBO and is willing to undertake to build and run cybercafes in the Municipality (DHQ). After the pilot phase the cybercafes will be implemented in non municipal DHQs as well. In non municipal DHQs, NTA should work out collaboration with DLGSP/DDC.
- In the DHQs where cybercafes are proposed, private entrepreneurs have some capability to provide computer training, therefore, entrepreneurs or their staff will be trained in operation and basic maintenance of computer hardware-software and running of cybercafes in the pilot phase. *As there are only three such DHQs, a training facility close to each DHQ will be sought to provide training to the entrepreneur/staff of that DHQ?*
- If required, a small loan to the entrepreneur will be provided under the terms and conditions applicable in lending from the Fund instituted by the RUPP/DLGSP/MLD.
- Presently following steps are proposed to be taken up to motivate the private sector during the pilot phase.
 - Loan will be extended on social collateral or guarantee.
 - First training on computer hardware and software for operation and maintenance and running of cybercafes will be given to the entrepreneur or its staff.
 - All other training expenses will be born by the Project.

- After the pilot phase, depending on the district, in some smaller DHQs, entrepreneurs might require following training to build district level capability, and such training could be organised for a large group in some central location such as Kathmandu:
 - Computer hardware and software for operation and maintenance and running of cybercafes.
 - For providing training to trainers and computer users.
- RUPP/Municipality will monitor the progress of the project.

5.1.8 Monitoring of the project activities

The project will develop the time schedule of all the activities working with the concerned cooperating agencies. The cooperating agencies will observe the time schedules of their respective responsibilities and meet to review progress periodically in establishing cybercafes. The CBO/Municipality/RUPP will monitor and provide to NTA the progress of the cybercafes as far as entrepreneur's activities are concerned.

5.2 Public Internet Access Point (Telecentre) in Rural Market Centres

5.2.1 Purpose of the Public Internet Access Point (Telecentre) in RMCs

The purpose of initial establishment of Telecentres is to provide access to information and communication facilities to rural communities. RUPP has already developed some agriculture market information system and other B-B e-commerce systems which may be useful applications to start with. As in cybercafes in DHQs, for viability of the telecentre combining of various service activities makes good sense when total demand of such services in a RMC is rather small. A menu of likely services is extracted from the one provided for cybercafes in DHQs. Telecentres established in RMCs will be owned by the communities.

5.2.2 Scope of the Pilot Project

It is proposed that RMCs selected under the Pilot Project should come from 8 DHQs, where RUPP is involved. The actual number of RMCs where telecentres will be established will depend on the actual demand generated subsequent to the following actions from the project:

- Interaction between a social mobiliser and the community regarding the utility, need and obligations and responsibilities of the community and the project for establishing telecentre and future support from the project.
- Desire expressed by the community, including forming a user committee.
- Selecting appropriate person for operation and management of telecentre.
- Providing commitment letter to abide by the obligations and responsibilities.

5.2.3 Menu of Services offered by Telecentres

As summarised in the previous paragraphs, following is the list of services that could be provided. It is appreciated that such services will develop over the period.

1. Provide Internet and information services to the community (which would include agriculture market information and B-B ecommerce applications developed by RUPP)

2. Sending/ receiving e- mail
3. Sending fax
4. Chat
5. Voip calls PC to PC , PC to phone
6. Local calls/STD/IDD
7. Photocopying

5.2.4 *Service Area*

Primarily the service area is the RMC and adjoining areas. As requirements of Internet and email are rather low in rural areas, all the hinterland will receive service from the telecentres in RMCs which people have to visit often for other purposes.

5.2.5 *Business Plan*

The SPPD-RUPP Strategic Plan of Action document contains a very good guide about Telecentre operational modalities and financial sustainability which has been reproduced with some minor changes in Annex 3. The document provides all the important points to consider in preparing good Business Plans for the telecentres. Indeed this guide will be used for assessing the preliminary business plan by the Project for each RMC site and trying to help the *telecentre manager* to establish the business plan in future. However, just as described in section 4.1.5, a business plan would include costs (both capital and running costs) and revenues to determine its viability of operation.

5.2.6 *Operational modalities of telecentres*

The study recommends that the Project establish partnership with RUPP and/or DLGSP, DHQ (Municipal) based Tole/lane CBO in establishing telecentres in RMCs. Following actions are required in partnership:

- The CBOs in VDCs, Municipalities/DDCs will be informed about the purpose of the telecentres and basic requirement as to how it would function. The information will also include the longer term objective and strategies of ICT development in rural and peri-urban areas and how VDC, Municipalities and DDC could contribute. As a matter of fact VDC and DDC will participate in preparation of the annual plan.
- The CBO in VDC will nominate members from the community and form *telecentre user committee*.
- The *telecentre user committee* will nominate one person initially to manage and operate the telecentre.
- Training to *telecentre manager/operator* will be provided by the Project in the following manner:
 - Training of about 10 days on telecentre management and operations and info-mobilisation will be given by RUPP at their own expense
 - Training of one week on email, Internet use and applications will be provided by one institute selected by the project.
 - All the travelling, food and lodging expenses of the trainees and the training on email-Internet use and applications will be borne by the project.

- The telecentre equipment will be provided by the Project but all the installation will be the responsibility of Municipality/RUPP.
- The *telecentre user committee* will provide all the furniture, wiring and accommodation for the equipment.
- *The one year operational expenses of 24000 rupees will be provided to the Telecentre User Committee by the project.*
- *Municipality /RUPP will provide the support necessary to the telecentres for at least two years from the project.*

5.2.7 Monitoring of Project Activities and Continued Support

The project will develop the time schedule of all the activities working with the concerned cooperating agencies. The cooperating agencies will observe the time schedules of their respective responsibilities and meet to review progress periodically. The CBO/Municipality/RUPP will monitor and send the progress of the telecentres. RUPP/Municipal unit in DHQs will support the telecentres until they become self reliant.

5.2.8 Telecentres in institutions

As a trial, telecentres are proposed to be installed also in health post, post office and CTEVT centres. During the pilot project, 5 telecentres (3 in post offices, 1 each in health post and CTEVT) are proposed as a trial. The sites for these telecentres will be selected, in consultation with institutions concerned. The project will provide training to one appropriate person for each telecentre selected by respective institutions. Equipment will be delivered to each institution through their central level offices. Installation of the equipment will be arranged by each institution. The accommodation, wiring and running cost of the telecentres will be borne by the institutions concerned. The facilities will be used for providing services to respective units concerned as well it will be open for public use. The charges for services will be reasonable and will be determined by NTA in cooperation with the institutions.

5.3 Computers and Internet in Higher Secondary Schools

5.3.1 Purpose

Absence of access to computer education in government schools is alienating the school children in particular of rural areas of Nepal. The students are increasingly being deprived of the potential benefits of learning use of computers and from access to information that is increasingly dominated by computers and digital media. The students in rural areas generally have to go to government schools which have no computer facilities. This is widening the gap between these poor students and their urban counterparts or richer rural students who could afford to go to urban private schools. The government requires addressing this situation immediately. Apart from the positive policy in this direction, no implementation has yet been seen. Therefore, the purpose of the Computers for school and Internet is to address this situation, as well as create demand for ICTs in rural areas in the medium term which will benefit the rural population.

5.3.2 The scope of the pilot project

The work targeted for the year 2006 to cover 160 schools will constitute the pilot project. The eight districts chosen for the cybercafes in DHQs and telecentres in RMCs projects will also be chosen for the implementation of the pilot. This gives about 20 secondary schools in each district. If in the process it is discovered that all of the twenty are not ready for computers then remaining numbers will be tried in the adjoining or other districts where demand has been registered, and which are ready to fulfil their obligations and recommended by district authorities. Each school will receive five networked computers and a printer with UPS, all installed by the Project. The school will provide appropriate accommodation, properly wired and furnished to install equipment. A teacher will be trained by the project but the travel and lodging and boarding expenses will be borne by the school.

TABLE 5.1 TARGETS FOR THE YEARS AND STUDENTS COVERED BY THE PROJECT

s.n.	Year	Number of schools	students/school	Students
1	2006	160	156	25,000
2	2007	400	156	63,000
3	2008	960	156	150,000

5.3.3 Modality of implementation

Five computers per school are hardly adequate compared to the number of students on average at each school. However, it is high time that something is initiated in this direction at least by providing 5 computers initially. Once we start with 5, the schools will start asking for more. Once we establish computer teaching capability, adding further computers will be a relatively easy task. As the cost of the project with entirely new equipment is going to be high, it is proposed that we start with used equipment but not too old. In the beginning, we start with donations from International NGOs who do just that job. Later, as we proceed, we may be able to supplement with local equipment donations as well. The implementation of this project is going to be rather extensive and on a demand driven basis. In order to kick start with a substantial volume of operation, NTA is advised strongly to work with national NGOs who are good at this type of work. In summary, the following modality of working is adopted:

- NTA shall work with one selected national level NGO.
- NTA will provide the fund necessary to import the used computers for the project
- The NGO will manage the entire project, in summary the following:
 - Importation of the equipment, safe keeping during the process of work, purchase of all the components of the equipment to be locally procured for installation,
 - Refurbishing if required,
 - Communicating with district authorities for selection of school and for monitoring after the installation is complete and courses to start in the schools.
 - Collecting the contributions from the schools required to meet some part of the project costs.
 - Getting equipment installed and teachers trained.
- Tripartite MOU among International NGO, who provides computers, National NGO and NTA will be drawn up for this implementation and each entity will bear the respective responsibility and obligation in the project.

- National NGO will also develop local NGOs wherever possible to divide the implementation responsibility through them.
- DDCs/DOE/and VDCs will have to report annually the progress made by the schools in computer education in the schools
- The project will also provide Internet connectivity when it becomes available and will pay some sum for the first year.

5.3.4 Financial sustainability

The current experience in the similar project has been that a number of secondary schools are ready to contribute substantial sums towards implementation. The funds obtained by them from the project are often VDC budget which is available to do some projects in the VDCs. The fund is also raised in the community to some extent. There are schools which are fully aided and completely unaided by the government. Unaided schools are run by the donation of the community and could also be some contribution from VDCs and small sum they raise from the fees. Private schools are categorised as institutional and they entirely depend on the students' fees. The schools the project is aiming to help are both aided and unaided ones. The numbers of students that will benefit from the project are given below. The schools may be able to raise some amount in terms of fees from the students. It is important that secondary schools are provided with computer teachers by government. It may be possible to train out of school youth interested in learning to use computers. These numbers are difficult to guess in the rural conditions. In the beginning such numbers will be low but as the value of learning to use computer increases this might catch on slowly. May be such youth trained annually will be about 10% of the students. Even this number is very encouraging in the beginning to create the demand for ICTs in rural areas. The fees collected from students and such users will contribute to the operation and maintenance.

5.4 Regional Internet Exchanges by NPIX

5.4.1 Purpose of project

The establishment of Nepal Internet Exchange (NPIX) in 2002, as an activity of ISP Association of Nepal with support from Computer Association of Nepal and other related bodies, has proved to be highly beneficial to the local Internet community. In essence, the local exchange of traffic has grown from a nominal 200 Kbps in 2002 to more than 3 Mbps cumulative at the end of 2004. While this may not seem significant, it represents about 10 percent of the national Internet bandwidth capacity. The growth factor itself speaks for the benefits of the Internet Exchange.

To further extend the benefits of local traffic exchange, it is necessary that the successful model of operation be replicated in other major urban areas of Nepal. The purpose of the project is to establish local exchange facilities in the four cities of Biratnagar, Pokhara, Bhairahawa/Butwal and Nepalgunj. Birgunj and Dhangadi are other two locations where such a need is to be determined before the project is finalised. The second purpose is also to enhance the capacities of the operators in those regions and also make the national Internet infrastructure more robust. A detailed proposal of this kind is provided in Annex 7.

5.4.2 Modalities of implementation

NPIX is an NGO working to build up Internet switching facilities in the country. So far NPIX facilities have been built by donation obtained. Therefore, it is proposed that NPIX be helped for funding the developing of some local switching facility and training small ISPs to enhance their capacity to understand the BGP technology and to be able to peer. This project has components like equipment and installation, training the ISPs and some salaries. As long as the local competitive bidding is adopted in the project, payment for these items could be done directly to the bidders on the basis of performance of the bidders. Payment for salaries and other items may have to be borne by the NPIX from some other resources. Therefore, it is recommended that NPIX performs its task through local competitive bidding. If the basis of selecting the bidder is transparent then disbursement of the fund will not pose any problem. It is suggested that NPIX carries out agreed project work on the basis of competitive bidding and payments for which project will make.

5.5 Project Cost Estimates for Pilot Phase

This section will work out the costs for each project component in general, but specifically will estimate for each item required to be provided by NTA. Contributions of cooperating agencies will not be covered.

5.5.1 Cost of Cybercafes in DHQs

Cost of establishing cybercafes in DHQs consists of the following:

- All costs of establishing cybercafes in DHQs - private entrepreneurs, the owners
- Info-mobilisation of CBO and CBO selected entrepreneur - borne and done by Municipality/RUPP
- Cost of training to be given to entrepreneur / staff selected – to be organised at training facility located close to the site of cybercafes and borne by the project. This is estimated as 2 month training at Rs. 21,300 per cybercafe.
- A small loan extended to entrepreneur by CBO/Municipal/RUPP Fund
- Supervision and monitoring of establishment of cybercafes until they become self reliant - Municipality/RUPP

5.5.2 Telecentres

Cost of telecentres consists of the following:

- Telecentre accommodation, furniture and wiring - borne by telecentre user committee
- Community /Info-mobilisation, formation of telecentre user committee - borne by RUPP
- Telecentre equipment delivered to user committee/ Municipality/RUPP- borne by NTA
- Training of telecentre staff on operation and management (Annex 5):
 - Travel and lodging and boarding cost - borne by NTA
 - One week training on Internet and email operations - borne by NTA
 - 10 days training on info-mobilisation and management and operation of telecentre - RUPP

- one year Internet access fee - NTA
- Telephone line connection, deposit and rental charges – User committee.
- One year operation cost of Rs.24000 - NTA
- Two year (minimum) supervision and support cost - Municipality/RUPP

5.5.3 Computer and Internet for Schools

The total cost of providing 5 networked computers with a printer installed and a teacher trained for 160 schools with about 8% computers in spare is Rs. 8,812,590 (Rs.55,079 per school) excluding items shown in non cash contribution of the school. Cash contribution of the school is also shown. This cost can be broken down in the following manner:

- Used Pentium three computers - provided free by WCE and CAI
- Sourcing, admin, ocean shipping for used computers - Rs. 4,138,590 or \$58,000 - NTA
- Project management – transport from Kolkata, local transport, local purchase, installation and management - Rs 1,544,400 – done by NGO
- Cost borne by school:
 - Cash contribution - Rs.29, 213 - to meet the above expenses of project management.
 - Room, wiring and furniture
 - Travel and boarding expenses of the teacher for training

5.5.4 Regional Internet Exchanges by npIX

Total cost estimate of the project is Rs.860, 000 details of which are given in Annex 7. Rs. 765,000 will be borne by the Project (NTA) for regional switches in 5 places as given below:

- Infrastructure (equipment costs) - Rs. 597,000
- Training of small ISPs in BGP technology for Internet peering - Rs. 168,000

5.5.5 Summary of Pilot Project Cost

The maximum cost of pilot project that is needed from the Project is summarised below. The costs of other collaborating agencies, partners and admin and management cost of the Project is not included in the summary.

TABLE 5.2: SUMMARY OF PILOT PROJECT COSTS

S.N.	Project component	Cost in Rs.	Remarks
1	<u>Cybercafes in DHQs</u>		
	Training of 3 persons for 3 Cybercafes	81,900	
2	<u>Telecentres for maximum of 13 including 5 in institutions</u>		
	2.1 training cost	96,000	
	2.2 telecentre equipment cost	2,990,000	

	2.3 Telecentre operation cost only for 8, not for institutions (24000/per centre)	192,000	
	2.4 one year Internet cost only for 8 as above @Rs12000/per annum per centre	96,000	
	2.5 equipment installation cost by RUPP	-	RUPP cost not shown
	2.6 Post installation Supervision and monitoring and support by RUPP	-	RUPP cost not shown
	Subtotal	3,382,000	
3	<u>Computers and Internet in schools</u>		
	3.1 ocean transport, admin and refurbishing cost of computers for 160 schools	4,138,590	borne by Project
	3.2 cost of local purchases, installation, training, and project management	4,674,000	Borne by schools
	3.3 cost born by schools for accommodation , furniture, and wiring and travel and living cost by schools	-	Not shown
	Subtotal	8,812,590	
4	<u>Regional Internet Exchanges by nplX</u>		
	4.1 Cost of infrastructures for switches in five locations	597,000	
	4.2 cost of training of ISPs in 8 places	16,800	
	Subtotal	613,800	
5	Total pilot project Cost borne by the Project	8,216,290	

5.6 Time Schedule of Pilot Project Activities

Time schedule can best be presented in the tabular form. The activities included will be all that is required following the submission of this Pilot Project Design. As the Demand Analysis part of PS-4 does not really affect the *Phase Two c) Design of bidding process for the pilot project*, this work will commence as soon as the report on Pilot Project Design is submitted.

TABLE 5.3: TIME SCHEDULE OF THE PROJECTS

s.n.	Project and Activities	months/1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	AA. Cybercafes in DHQs														
	1.MOU between NTA and RUPP	x													
	2. info-social mobilisation in DHOs by RUPP	x	x												
	3.selection of private entrepreneur		x	x											
	4.loan arrangement By CBO/RUPP			x	x										
	5.trainer selection			x	x										
	6.training of entrepreneurs					x	x	x							
	7. establishment of cyber café				x	x	x	x							
2a.	BB.1. Telecentres in RMCs														
	1. info-social mobilization	x	x	x											
	2.formation of user committee	x	x	x											
	3.selection of telecentre operator/manager	x	x	x	x										
	3.selection of trainer				x	x									
	4. training of Telecentre operator					x	x	x							

	5.purchase of hardware software			x	x	x	x								
	6. installation of hardware software						x	x	x						
	7. reports of commissioning							x	x	x					
2b.	BB.2 Telecentres in Institutions														
	1.MOU between NTA and the Institutions	x													
	2. selection of the sites		x	x											
	3.purchase of hardware software			x	x	x	x								
	4.selection of trainer				x	x									
	5. training of Telecentre operator					x	x	x							
	6.purchase of hardware software			x	x	x	x								
	7. Installation and commissioning						x	x	x						
3	CC. Computers and Internet in Schools														
	1.selection national NGO to work with	x	x	x											
	2.MOU between NTA and international NGO			x	x										
	3.selection of schools (NNGO)			x	x	x	x	x							
	4.order of the equipment				x	x									
	5.equipment arrivals						x	x	x						
	6.local purchases (NNGO)							x	x						
	7.selection of trainer/s						x	x	x						
	8.teachers and training								x	x					
	9.readying schools for receiving the equipment						x	x	x						
	10. Installations								x	x	x	x			
	11. reports of commissioning									x	x	x	x		
4	DD. Regional Internet Exchanges by NPIX														
	1.MOU between NTA and nPIX			x											
	2.nPIX to submit bidding docs to NTA				x	x									
	3.nPIX procures equipment/software						x	x	x	x					
	4.nPIX gets equipment installed										x	x	x		
	5.nPIX procures training service								x	x					
	6. training of ISP on BGP technology for peering									x	x	x			
	7.commission of the equipment													x	
	8.completion reports														x
		1	2	3	4	5	6	7	8	9	10	11	12	13	14

Note: The present Consultants will help the Project until end of the month 2.

6 Terms of Reference, Methodology and Sample Survey for Demand Study

6.1 Purpose of the Demand Study as per TOR

The purpose of the demand study as described by TOR is to produce a detailed description of expectations for services in the rural and under served urban areas, the potential demand for new services, and technical, legal and business constraints for the delivery of additional services. The TOR also stipulates that “the potential level of telecommunication and information services utilization in Nepal should be described in detail based on a demand study including three different scenarios (urban, semi-urban and rural). Each scenario should include at least three surveys of the most populated areas within each scenario, according to the National Census.” At the same time TOR stipulates in the TOR of pilot project design that “At the end of this task, the consultant is expected to prepare a methodology, terms of reference, sample survey and select a number of locations, in agreement with MOIC and NTA. These selected locations will represent samples of the target areas for the pilot project, in which a demand study will be, conducted subsequently, which the consultants may conduct directly or may contract out to a local company.”

Therefore, the samples are to be taken from very specific locations as per TOR and further they have to be from the target areas where pilot projects are to be implemented. Therefore, the study will bring out the demand of only those areas where actually the survey is performed. Extrapolation from these findings to a full national picture will have limited validity.

6.2 Terms of Reference

For convenience, **Box 1** below reproduces the passage from the terms of reference which describes the demand study, with the original bullet points numbered and in some cases split.

BOX 1 EXTRACT FROM TERMS OF REFERENCE FOR DEMAND STUDY

The demand study will be based on a thorough survey of selected locations, as described below, which will produce a detailed description of expectations for services in the rural and under served urban areas, the potential demand for new services, and technical, legal and business constraints for the delivery of additional services [copied below as not otherwise covered]. The potential level of telecommunication and information services utilization in Nepal should be described in detail based on a demand study including three different scenarios (urban, semi-urban and rural). Each scenario should include at least three surveys of the most populated areas within each scenario, according to the National Census. Utilization estimates will include a prioritization of telecommunication needs, such as:

1. Priority customers, such as administrative centres, hospitals, police stations, post offices, Internet service providers, schools, businesses, etc.;
2. Appropriate extension and connections to the national backbone network;
3. Analysis of the users' payment ability and
4. the types of demanded services;
5. Required service levels and transmission capacity for towns and villages in different sizes, segments, and/or at different levels in the administrative hierarchy, based on
6. estimates of demand for different services, from voice to Internet access;
7. Appropriate policy targets for the desired service levels, such as minimum acceptable distances (in km or hours of walking) from the nearest public communication point, numbers and sizes of villages/towns for which it is achievable to have at least one payphone and/or one telecentre within a specified number of years, as well as
8. Estimated cost of this deployment.
9. technical, legal and business constraints for the delivery of additional services

6.3 Methodology

The requirements above will be fulfilled by different types of activity.

- A. Exploitation of existing relevant survey results relating to household telecoms demand (from the National Living Standards Survey II and the APT/SECEN study), supplemented where necessary by further similar household surveys and surveys of business/institutional users. These give a good idea of existing usage patterns.
- B. Acquisition of local records of commercial and institutional establishments and their ICT use, for example from DLGSP, Chambers of Commerce and Nepal Telecom.
- C. Discussion groups of local people and in-depth interviews with business and professional people in each locality. These are the best tool for finding out about likely future demand and perceived constraints.
- D. Discussions of network design with technical experts, including those from Nepal Telecom.
- E. Subsequent analysis of findings, combined with earlier project findings.

The table below shows how each type of activity can contribute to fulfilling each requirement (“yes” means that this activity contributes to fulfilling this requirement).

TABLE 6.1: ACTIVITIES TO FULFIL REQUIREMENTS OF TOR

	A Existing/new surveys	B Local records	C Discussion groups, depth interviews	D Technical discussions	E Analysis	Comment
1 Priority customers		Yes	Yes	Maybe		Closely related to pilot planning
2 Backbone extension				Yes	Yes	
3 Users' payment ability	Yes		Yes		Yes	Already well surveyed
4 Future service demand	Useful findings already from APT/SECEN		Yes			
5 Service levels and capacity				Yes	Yes	
6 Service demand					Yes	Aggregation and projection of demand findings
7 Policy targets			Yes		Yes	Already proposed nationally, discuss local applicability
8 Costs of achieving targets					Yes	Estimates to follow rest of work
9 Constraints			Yes		Yes	Constraints already set out in strategy, discuss local validity
Comment	New work should focus on business users	Straight forward	Most new value here			

6.4 Fieldwork design

In each of the three Districts where it is agreed that pilot projects and demand study fieldwork should take place, and in each of the agreed study locations (three per District – one urban, one semi-urban and one rural) we will:

- Catalogue all known existing telecom and IT installations, with particular focus on PCOs and other publicly available facilities, together with available information on expenditure and usage levels.
- Collect records of businesses and institutions which are held at District level.
- Invite a range of representatives of these businesses and institutions to take part in and help to organise discussion groups. Each discussion group will number five to ten people (excluding the facilitator and reporter). We expect to hold one group in each rural location, two in each urban location and one or two in each semi-urban location, making 4 or 5 groups per District and 12 to 15 groups in all. We will aim to organise the discussion groups so that the views of the following special segments are clearly brought out in the fieldwork as a whole (if necessary, by having a dedicated group or groups):
 - women
 - Dalits
 - children and young people
 - people who through age or disability cannot work
- After each discussion, ask each person taking part in a discussion group also to complete a questionnaire about his or her personal and business circumstances, and use and potential use of ICTs.
- Carry out 10 to 20 in-depth interviews per District with individuals who emerge as having particular points of view or interests to contribute

BOX 2: OUTLINE TOPIC GUIDE FOR INTERVIEW AND DISCUSSION GROUPS

Establish respondent's situation/occupation and whether speaking for self or on behalf of others. If the latter, for whom.

Test understanding of meaning of various ICTs (e.g. fixed and mobile phones, fax, radio, TV, email, internet, computers).

Existing use of these ICTs – time of use, reason for use, spending on use. What benefits are obtained from use?

Potential future benefits from using ICTs (may need prompting in terms of information and communication needs).

Perceived barriers to achieving these benefits (no access, too expensive, don't understand how, etc).

6.5 Areas to be selected for Demand Study

The purpose of this section is to suggest the samples of the target areas for the pilot project and to determine the methodology and terms of reference for the survey to be conducted. Based on the terms of reference, a demand study will be carried out in sample target areas of the pilot project. Sample target areas for pilot projects have already been suggested in Section 2.3.6. These are in terms of districts Ilam, Dhankuta, Gorakha, Dang, Bardia,

Surkhet, Doti, and Kanchanpur. Out of these we have to choose 3 DHQs which are municipal towns (as urban), three RMCs (semi urban), and three VDCs (rural). The areas where the survey will be carried out will be from following areas of each district (in total three districts will be chosen) defined in the following manner:

- Urban area - municipal centre of town where commerce and business is located. This could be one or two wards in these small towns.
- Semi-urban area - this will be a smaller town than the municipality but a big rural market centre (a VDC) of the district. Again the survey will be conducted in the ward where business/commerce is located.
- A VDC - is likely to be next biggest VDC. Again the ward which is the commercial centre will be chosen.

The three districts suggested are Ilam in the hills of EDR, Dang in the inner Terai of MWDR and Kanchanpur in the Terai of FWDR. The three urban centres are municipalities of Ilam, Tribhuvan Nagar (*Ghorahi*) and Mahendra Nagar which also are DHQs. For the next lot of semi-urban areas we are taking Phikkal in Ilam, Lamahi in Dang and Jhalari in Kanchanpur. Similarly three VDCs are Barbote in Ilam, Narayanpur in Dang and Dajee in Kanchanpur. *Should there be any difficulty due to security situation alternative VDCs will be chosen. Security in Municipalities (DHQs) is expected to be satisfactory.* The selection of these districts are based on two consideration: one is the relatively easier to work under the existing security situation; and the other is that districts are spread over EDR, MWDR and FWDR and represent hill, inner Terai and Terai.

7 Next steps

7.1 Some recommendations to NTA

It is pertinent to recommend the following points to NTA

- NT has plans which needs detailing as to exactly which areas NT is going to cover with its CDMA network and which will be left out. NTA is strongly advised to determine the details of the gaps throughout the country as soon as possible so that it could plan to cover them in a timely fashion. Our strategy report put forward a way of NT and NTA approaching this task together.
- The nature of ICT implementation has to be demand driven for sustainability and entails much decentralised processes of working with communities. Process and procedure in these project implementations require substantially different skills and capabilities from NTA's normal functions. Therefore, NTA is strongly advised to work in cooperation with agencies like DLGSP and RUPP, and well established NGOs like COPPADES, to implement ICTs for rural communities. Working through DLGSP and RUPP, NTA will have the advantage of implementing projects with communities through CBOs already established in municipalities, DDCs and VDCs by DLGSP and RUPP. ICT projects will also benefit by cooperating and coordinating with agencies like AEPC and REDP who support rural electricity projects. NTA will be able to gain experience to plan to run larger projects with partners after the pilot. This way NTA will not be unduly burdened with permanent employees for these activities as these projects will move to New Agency once ICT project work under current IDA credit is over.

- Purpose of promoting establishment of cybercafes in the DHQs is:
 - Provide public Internet accessing facilities in DHQs.
 - Create the first Cybercafes in DHQs as a first attempt to establish computer hardware and software support, and training in use of simple computer applications, as capability in the district for expansion of ICT services
- As access to cheaper Internet is a very recent phenomenon in many districts, it may be wise to allow reasonable time for Internet usage to grow and for the private sector to come forward and establish cybercafes in DHQs.
- If cybercafes do not come up in the DHQs within say 12-18 months of introduction of Internet with local dial-up rates, NTA is advised to encourage private sector by providing free training on management and skills required for the business.
- It was rather unfortunate that Community Radio which has proven to be very successful ICT project for the development of community at much lower price had to be left out from this pilot project. We strongly urge MOIC that this particular item is taken up later when situation becomes favourable.

It is stressed here that much of the value of the pilot project will lie in spreading wider understanding of new and successful ways of doing things. We certainly hope that MOIC, NTA and the new agency to be created for ICT projects will take these points to due consideration.

7.2 Steps that will follow this particular task:

Indeed the demand survey is one of the important tasks and deliverables. However, the next task which becomes urgent to implement the pilot project is related with “design of bidding process for the pilot project”. We propose to carry out demand study and design of bidding process in parallel. We have already proposed the type of institutions necessary for implementing telecom infrastructure and other ICTs. The next steps to be taken in this context are:

- Details of the institutions
- Details of managing RDTF and related manual

The rest of the work in relation to designing of bidding process is concerned with designing of MOUs to work with collaborating agencies and design of any bidding document necessary for procurement of goods and services for implementation of the pilot project.

We will be conducting demand survey and analysis according to TOR along with the preparation of a demand modelling report which was accepted in the working committee level in lieu of demand survey.

Annex-1	Category of Districts According to Population Density Range
Annex-2	Cyber cafes at DHQs as Internet Local Dial-up Charges Become Available
Annex-3	Telecentre Operational Modalities and Financial Sustainability
Annex-4	Info-mobilisation
Annex-5	Training Cost Estimate for Telecentre Management and Operation
Annex-6	Telecentre Equipment and Cost Estimate
Annex-7	Project Proposal for establishment of Regional npIX
Annex-8	Computer Education Project (as per COPPADES experience)
Annex-9	Computers and Internet in Schools Project Costs

ANNEX 1: CATEGORY OF DISTRICTS ACCORDING TO POPULATION DENSITY RANGE

Category A population density (4-12)	Total	Population 2001		Percent Total	Area in Sq. Km.	Population Density Person/ Sq. Km.	
		Male	Female				
A.1 Western Mountain							
Manang	9,587	5,034	4,553	0	2,246	4	A
Mustang	14,981	8,180	6,801	0	3,573	4	A
A.2 Mid West mountain							
Dolpa*	29,545	14,735	14,810	0	7,889	4	A
Humla	40,595	20,962	19,633	0	5,655	7	A
Mugu*	43,937	22,250	21,687	0	3,535	12	A
Total for A	138,645						
Category B population density (29-65)							
B.1 EAST MOUNTAIN							
Solukhumbu	107,686	53,173	54,513	0	3,312	33	B
Taplejung	134,698	66,205	68,493	1	3,646	37	B
Sankhuwasabha	159,203	77,853	81,350	1	3,480	46	B
B.2 Central Mountain							
Rasuwa	44,731	23,355	21,376	0	1,544	29	B
B.3 Mid west mountain							
Jumla*	89,427	45,848	43,579	0	2,531	35	B
Kalikot*	105,580	53,189	52,391	0	1,741	61	B
B.4 Farwest mountain							
Bajhang	167,026	80,676	86,350	1	3,422	49	B
Bajura*	108,781	53,834	54,947	0	2,188	50	B
Darchula	121,996	59,791	62,205	1	2,322	53	B
B.5 West Hill							
Myagdi	114,447	53,178	61,269	0	2,297	50	B
B.6 Midwest Hill							
Jajarkot	134,868	68,508	66,360	1	2,230	60	B
Rukum	188,438	95,432	93,006	1	2,877	65	B
Total for B	1,476,881					A+B	1,615,526
Category C population density (80-150)							
C.1 Central Mountain							
Dolakha*	204,229	9,963	104,266	1	2,191	93	C
Sindhupalchok*	305,857	152,012	153,845	1	2,542	120	C
C.2 East HILL							
Bhojpur	203,018	97,762	105,256	1	1,507	135	C
Khotang	231,385	112,821	118,564	1	1,591	145	C

Udayapur	287,689	143,756	143,933	1	2,063	139	C
Okhaldhunga	156,702	75,361	81,341	1	1,074	146	C
C.3 Central Hill							
Sindhuli*	279,821	139,280	140,541	1	2,491	112	C
Ramechhap	212,408	100,853	111,555	1	1,546	137	C
C.4 West Hill							
Gorkha	288,134	134,407	153,727	1	3,610	80	C
Lamjung	177,149	83,406	93,743	1	1,692	105	C
C.5 Mid-western Hill							
Rolpa	210,004	101,592	108,412	1	1,879	112	C
Surkhet*	288,527	142,817	145,710	1	2,451	118	C
Salyan*	213,500	106,834	106,666	1	1,462	146	C
Dailekh	225,201	110,125	115,076	1	1,502	150	C
C.6 Far-western Hill							
Dadeldhura	126,162	60,965	65,197	1	1,538	82	C
Doti	207,066	103,521	103,545	1	2,025	102	C
Achham	231,285	108,998	122,287	1	1,680	138	C
Total for C	3,848,137						
Category D population density (151-200)							
D.1 Eastern Hill							
Panchthar	202,056	99,042	103,014	1	1,241	163	D
Ilam	282,806	142,434	140,372	1	1,703	166	D
Terhathum	113,111	54,932	58,179	0	679	167	D
Dhankuta	166,479	81,841	84,638	1	891	187	D
D.2 Central Hill							
Makwanpur	392,604	199,144	193,460	2	2,426	162	D
Dhading	338,658	165,864	172,794	1	1,926	176	D
D.3 Western Hill							
Baglung	268,937	123,528	145,409	1	1,784	151	D
Arghakhanchi	208,391	96,349	112,042	1	1,193	175	D
Kaski	380,527	184,995	195,532	2	2,017	189	D
Palpa	268,558	125,068	143,490	1	1,373	196	D
D.4 Mid western Hill							
Pyuthan	212,484	98,390	114,094	1	1,309	162	D
D.5 Farwest Hill							
Baitadi	234,418	113,538	120,880	1	1,519	154	D
D.6 Mid-western Terai							
Dang	462,380	228,958	233,422	2	2,955	156	D
Banke	385,840	198,231	187,609	2	2,337	165	D
Bardiya	382,649	192,655	189,994	2	2,025	189	D
D.7 Far west Terai							
Kailali	616,697	312,311	304,386	3	3,235	191	D
Total for D	4,916,595						

Category E population density (200-300)							
E.1 Central Hill							
Nuwakot	288,478	142,731	145,747	1	1,121	257	E
Kavrepalanchok	385,672	188,947	196,725	2	1,396	276	E
E.2 West Hill							
Tanahu	315,237	146,788	168,449	1	1,546	204	E
Gulmi	296,654	133,771	162,883	1	1,149	258	E
Syangja	317,320	143,619	173,701	1	1,164	273	E
E.3 Central Terai							
Chitawan	472,048	235,084	236,964	2	2,218	213	E
E.4 West Terai							
Nawalparasi	562,870	278,257	284,613	2	2,162	260	E
Kapilbastu	481,976	247,875	234,101	2	1,738	277	E
E.5 Farwest Terai							
Kanchanpur	377,899	191,910	185,989	2	1,610	235	E
Total for E	3,498,154						
Category F population density (301-and above)							
F.1 West Hill							
Parbat	157,826	72,942	84,884	1	494	319	F
F.3 Eastern Terai							
Saptari	570,282	291,409	278,873	2	1,363	418	F
Jhapa*	688,109	341,675	346,434	3	1,606	428	F
Morang	843,220	422,895	420,325	4	1,855	455	F
Siraha*	572,399	293,933	278,466	2	1,188	482	F
Sunsari	625,633	315,530	310,103	3	1,257	498	F
F.2 Western Terai							
Parsa	497,219	260,411	236,808	2	1,353	367	F
F.4 Central Terai							
Bara	559,135	289,397	269,738	2	1,190	470	F
Lalitpur	337,785	172,455	165,330	1	385	877	F
Rautahat	545,132	282,246	262,886	2	1,126	484	F
Sarlahi	635,701	329,182	306,519	3	1,259	505	F
Mahottari	553,481	287,905	265,576	2	1,002	552	F
Dhanusa	671,364	349,422	321,942	3	1,180	569	F
F.5 West Terai							
Rupandehi	708,419	360,773	347,646	3	1,360	521	F
Total for F	7,965,705						
						E+F	11,463,859
G. Kathmandu Valley							
Bhaktapur	225,461	114,798	110,663	0.97	119	1,895	G
Kathmandu	1,081,845	576,010	505,835	4.67	395	2,739	G
Total for G	1,307,306						

Source- CBS Census 2001

**ANNEX 2: CYBER CAFES AT DHQs AS INTERNET LOCAL
DIAL-UP CHARGES BECOME AVAILABLE**

S.N.	2005/2006 - pilot phase	2006/2007	2007/2008
1	Dhankuta	Solukhumbu	Taplejung
2	Bardia	Terhathum	Sankhuwasabha
3	Doti	Okhaldhunga	Panchthar
4		Khotang	Bhojpur
5		Udayapur	Sindhupalchok
6		Saptari	Rasuwa *
7		Siraha	Ramechhap
8		Dolakha	Jumla
9		Sindhuli	Kalikot
10		Nuwakot	Mugu
11		Dhading	Humla
12		Dhanusa	Rolpa
13		Mahottari	Rukum
14		Sarlahi	Jajarkot
15		Rautahat	Bajura
16		Bara	Bajhang
17		Lamjung	Achham *
18		Syangja	
19		Myagdi	
20		Parbat	
21		Baglung	
22		Gulmi	
23		Nawalparasi	
24		Pyuthan	
25		Salyan	
26		Dailekh	
27		Darchula	
28		Dadeldhura	
29		Baitadi	

ANNEX 3: TELECENTRE OPERATIONAL MODALITIES AND FINANCIAL SUSTAINABILITY

1. Telecentre User Committee

Telecentres benefit from having a permanent user committee, which is responsible for guiding the whole process of starting the telecentre and then, on a long-term basis, for ensuring its continued success and development. Depending on the local legal requirements, the user committee can serve as the governing body or in an advisory role. A user committee will normally consist of members of the community who have a keen interest in starting a telecentre. Additional members of a user committee may be appointed at a public meeting to which members of the community are invited.

The primary bodies for overseeing the SPPD-RUPP telecentres are the Municipal, Ward and VDC authorities, but it is not expected that they would have all the skills and experience necessary to set up telecentres unaided. They must be able to select and recruit people who have the skills that are needed to plan, establish and guide the operations of the telecentre. A user committee should be:

- Representative of the community.
- Committed to the community and to the telecentre.
- active user committee members who only attend meetings and do nothing else are of no use to the telecentre or the community

1.1 Organization of Telecentre User Committee

The user committee should consist of at least the following:

- **The telecentre manager**

Reports activities to the committee and acts on their instructions

- **Representatives from the community**

Partnership Development Committee (PDC) RUPP Implementation Management Committee (Municipality) Community Resource Centre (telecentre) Users Committee SPPD/RUPP Municipality RUPP Implementation Management Committee (Rural Market Centre) Community Resource Centre (telecentre) Users Committee TLO MOA Field level implementation of SPPD Pilot SPPD-RUPP Strategic Plan of Action 18 As the telecentre must serve the residents of its community, so community voices need to be heard on the user committee. This is critical for identifying the most appropriate services, and for generating a sense of ownership of the telecentre. Community representatives would be drawn from TLOs, school governing bodies, local NGOs, religious institutions, community service agencies etc.

- **Representatives from the local business sector**

Representatives from the local business community may be able to offer special skills and expertise and business support and advise on operations. E.g., an electrical repair shop may help with the technology; a construction company may help with the buildings.

- **Representatives from the education community**

Representatives from the educational community are important, as this sector is often one of the biggest potential customers of telecentre services. Representatives may come from local schools and their governing bodies; community colleges; universities; libraries; museums; or adult education programmes. User committee members from the educational community will offer an understanding of how this sector works and what the possibilities are. They may also be able to identify volunteer trainers for the telecentre. The local school can provide useful input concerning use of the telecentre by school pupils and teachers offering tuition.

- **Other professionals**

People with technology expertise, experience in finance and marketing, and legal expertise can support the operations of the telecentre. An accountant will be needed to set up an accounting system to generate accurate accounting records to make sure that the telecentre keeps within its budget and plans properly to cover expected and unexpected costs. Only a full set of accounts will make it possible to set the prices for services to ensure that they are sustainable. The pilot will expect proper the tracking and reporting of income and expenses of the telecentre.

- **Publicity**

Publicizing the telecentre and what it offers is essential to its success. The committee needs to include people who have well developed connections with wide sections of the community. Word of mouth is one of the most effective marketing tools, and high profile business people or those in regular contact with the public during their daily activities can help achieve a strong result. Publicity and promotions experience, such as the ability to write articles for newspapers and newsletters or help set up open days and display stalls is also very useful.

1.2 The functions of the User Committee include:

- Set the overall directions, guidelines and strategies for the telecentre.
- Monitor the use of the centre and its impact on the community.
- Develop policies and procedures relating to membership, usage, data collection, financial management and other operations.
- Help to obtain on-going funding for the telecentre.
- Seek new directions for the telecentre, where possible.
- Observe legal requirements.
- Provide specialist advice.

1.3 The Responsibility of the User Committee:

- **Being a good employer**

This includes signing contracts with the manager and other staff members; ensuring appropriate taxation arrangements are accounted; ensuring that working conditions SPPD-RUPP Strategic Plan of Action 19 are safe; and seeing that staff is treated fairly and in accordance with legislation governing equal opportunity employment, unfair dismissal procedures, etc.

- **Providing services to the community**

It must provide safe conditions for public access to the telecentre; maintain the telecentre building and equipment; and arrange for any applicable insurance coverage as required.

- **Accounting for telecentre finances**

It must ensure that there are proper accounting processes that annual budgets are met and an annual audited statement is prepared. It must also ensure that the telecentre staff or manager maintains a cash flow chart monthly, and that quarterly and annual financial reports are prepared.

- **Continuing evaluation and monitoring of the telecentre**

To make sure that that the telecentre continues to be sustainable and provide for and anticipate the needs of the community, there must be an on-going process of monitoring and evaluation. The SPPD-RUPP pilot will require this.

2. Telecentre operational staff and operations

2.1 The Telecentre Manager

The telecentre manager performs the following essential functions:

- Attend the telecentre daily between the times agreed with the user committee.
- Manage the day-to-day operations of the telecentre.
- Assist the user committee in activities to meet the objectives of the centre.
- Set up and maintain a logging system for using the computers and other equipment.
- Supervise and maintain the telecentre security system.
- Sign up users and introduce them to the telecentre.
- Show users and other staff how to use all of the telecentre equipment.
- Link to educational and other organisations in the community.
- Arrange tutorial and study assistance if needed.
- Organise self-help groups, orientation programmes and social events.
- Maintain suitable records for the telecentre.
- Be responsible for the management, supervision and appraisal of staff members, ensuring that they perform their duties in accordance with their job descriptions, or as specified by the user committee.
- Keep up to date with all new developments in the community concerning education, training, technology, communication, information and business enterprise.
- Undertake training when necessary.
- In consultation with the user committee and other relevant people, negotiate and coordinate employment and training opportunities for telecentre users when needed.
- Together with the user committee, formulate, develop and review policies and procedures relating to membership of the telecentre, usage, data collection, financial management, and other operations of the telecentre.
- Ensure that all policies and procedures are implemented and adhered to.
- Promote the telecentre.
- Plan and co-ordinate activities to increase the number of telecentre users.
- Advertise the services offered by the telecentre.
- Identify and develop a network of users or potential users of the telecentre.
- Keep the community informed of the activities of the telecentre.
- Purchase appropriate hardware and software for the telecentre in consultation with the committee.
- Ensure that the facilities of the telecentre are maintained in good working order.
- Advise the user committee of any future equipment and service requirements.
- SPPD-RUPP Strategic Plan of Action 20; Develop and maintain a database of community skills.
- Develop and maintain a database of potential funding agencies.
- Seek on-going funding for the telecentre by sending out fundraising applications, applying for government grants, etc.
- Initiate and maintain revenue-generating (money-earning) programmes to achieve self-sufficiency for the telecentre.
- Provide information, assistance and advice to telecentre users.

- Take responsibility for the administration of any money collected by the telecentre on a daily basis.
- Provide written reports to the committee, SPPD-RUPP, and others, as required.
- Together with the telecentre user committee, be responsible for the on-going evaluation of the telecentre.
- Attend committee meetings and present monthly reports on the activities, usage and achievements of the telecentre and manager.
- Undertake additional tasks to benefit to the telecentre as directed by the user committee.
- The telecentre manager should give priority to promoting the e-governance and e-commerce facilities that are being implemented by RUPP.
- In addition, the telecentre manager must analyse the community to judge how best to meet its information and training needs; in health, agriculture, education, government and other areas.
- An enterprising telecentre manager can take advantage of existing online services.
- The alert telecentre manager will explore opportunities in all areas where information can contribute to community development.
- The manager will look beyond the excitement of computers and the Internet, and explore the potential of other information, education and entertainment media such as CD-ROMs, radio, audiocassettes, and mobile phones.

2.2 Staff

Staff of the telecentre assists the manager in performing his/her duties. Staff may consist of volunteers drawn from the community, possibly pupils who receive free time on the computers in return for their services. Typical daily activities include:

- Inspect the centre at opening and closing time as well as throughout the day
- Ensure the equipment is always working properly, that the facilities are clean and that the printers, fax machines and photocopiers are always filled with paper.
- Plug in and switch on all electrical equipment before the start of the business day.
- Check all telephones for a dial tone and, at the close of the day, generate a report of the daily business.
- Check that the computers and printers are working.
- Record the number of spoiled photocopier and printer papers.
- Assist customers with their information searches.
- Ensure that there is enough paper in the printer, photocopier and fax machine and that there is a spare supply of paper and toner. (There should always be enough spare items for all the telecentres needs for a period of time which is twice as long as the average delivery time)
- Service the equipment regularly
- Keep the telecentre clean, and have any needed repairs made immediately to the premises, furniture and equipment.
- Ask all customers when they leave if they are satisfied. (Customers will learn that their satisfaction is important, and, moreover, they might provide useful information.)
- Clean the equipment regularly; Inspect and register the condition of the premises and equipment.
- Complete the daily report on the services rendered and the finances involved which will be submitted to the committee
- Collect complaint and/or fault (breakdown) forms and add them to the daily report.

2.3 Training of Telecentre Operational Staff

The following training is required:

- Telecentre Management, including
 - Info-mobilisation
 - Enterprise management
- Telecentre operations (for staff)
 - Infomobilisation

The training requirements for Info-mobilisation are outlined in annex 1.

2.4 Daily Operations

The telecentre should be open at times decided by the user committee. Normally these would be times at which the community are available to use the centre's services, which often means opening in the evening. Staff service customers and perform the community outreach functions specified in the Infomobilisation training course. Initially, charges will not be levied for telecentre services, but will be introduced gradually as the manager and user committee see fit. In view of the experimental/research aspect of the pilot project, the manager of the centre is required to keep a daily diary of all events pertaining to the operation of the centre and including data on the number of people who visited the centre. The telecentre should maintain an activity log for this purpose. It should record the following:

- number of visitors
- purpose of visit
- comments regarding visitor's satisfaction
- equipment breakdowns, time and duration
- power failures, time and duration
- expenditures
- Events, etc.

3. Financial Sustainability

Financial sustainability relates to the economic capacity of a telecentre to survive through time. If it is required that a telecentre is to at least contribute towards its own financial requirements, it becomes necessary to think of the telecentre as a business. The telecentre then becomes subject to the same entrepreneurial and managerial principles that govern any other business. However, this does not preclude the telecentre from carrying out its social role of inducing human development. Financial sustainability of the telecentre is strongly linked to the issues of providing for the needs of the community, of achieving community participation, of the entrepreneurial creativity of the telecentre manager, and of the marketing of the centre. There is no single path for all telecentres to achieve financial sustainability. There is no magic formula. Creativity is a very important element when trying to find ways to make a telecentre work in a specific community and to becoming financially viable. However, the first step is always to understand what the information and communication needs of the community are. The financial success of the telecentre will depend on the relevance of the services provided to the community. Accordingly, all telecentres need a business plan, even those that do not rely on charging the community for services.

3.1 The Business Plan

A business plan describes everything about the telecentre. It is a detailed statement of the objectives of the telecentre and the strategies for achieving the objectives, and it explains how progress will be assessed on an on-going basis. The plan will include the telecentres budget. There are a number of key elements to a good business plan:

- **The programme focuses of the telecentre.**

For the SPPD-RUPP telecentres, the programme focus consists of the enhanced RUPP e-governance and e-commerce web sites. But the telecentres will not attain financial sustainability by promoting only these services. The business plan will need to explain how the telecentre has assessed the wider needs of the community. A thorough audit of the community has to be conducted, as described by the Info mediation methodology.

- **Description of the telecentres services and programmes.**

The details of this section will emerge from the Infomobilisation methodology. It will describe how the telecentres services will meet community needs, by first stating what those needs are and then detailing how the centre will address them.

- **Community partners.**

This section will give information about what the user committee has done to develop partnerships with other organisations and groupings in the community. Productive partnerships of various kinds have been shown to be highly contributive to telecentre success. The ability of the telecentre authorities to foster productive partnerships with community groups is a key indicator of their effectiveness. This part of the business plan will name the telecentre's partners and describe their aims and how the telecentre will contribute towards achieving them.

- **User projections.**

- This section of the plan will address the following questions:
- How many people will use each of the telecentre's different services and programmes? How will this number increase, as the telecentre becomes better known?
- What will a weekly or monthly schedule for the telecentre look like?
- How will the schedule change at different times of the year? For example, during school holidays, there will be more school students attending programmes during the daytime. In holiday seasons, there might be more tourists visiting the area.

- **User fees**

This section, considers the money that will be charged for different services, such as fees for fax and telephone, Internet access (for example, per half-hour), photocopying, etc. Other fees may relate to different costs for different user groups, say a teacher using the centre for extra-curricular tuition classes, or a local NGO holding a meeting. However, whilst the telecentre needs to generate income, it must not be out of reach of the people in the community. Its future depends on being accessible to the whole community.

- **Regular expenses.**

This list is a summary of what will be needed:

- Premises (rent, utilities, security, insurance, maintenance, cleaning, etc.).
- Staff (including salaries, benefits and incentives for volunteers).
- Marketing and promotion.
- Equipment and furniture (including replacement and repair costs).
- Software (including purchases, upgrading and replacements). Computer and office supplies.
- On-line services and Internet accounts.
- Publications and reference materials.
- Budget for special events (such as the launch of the telecentre or an open day where refreshments might be provided).

- **Marketing the telecentre.**

A description of the actions to be taken to inform the community of the services that the telecentre will offer covers:

- What media will be used.
- What promotional materials to produce.
- What meetings are planned for special presentations.
- How will community partners assist with promoting the telecentre.
- How the telecentre will be marketed to those who cannot read or write, or are disabled.

- **Evaluation of telecentre services.**

It is necessary to define a self-evaluation plan in order to determine if the telecentre is meeting its objectives. The evaluation methods chosen must be explained in detail and would include the following:

- Sign-in/sign-out procedures that give an accurate record of who uses the telecentre and for how long
- Volunteer logs to record tasks undertaken by volunteers, difficulties encountered and suggestions for improvements
- A comments box where users may place their comments, suggestions and criticisms
- Plans for regular meetings with representatives of key user groups, volunteers and staff in which people can express their needs and concerns
- Appointing a representative of a key user group to the user committee so that the or she can give feed-back directly to the highest decision-making structure
- Teacher/instructor logs which include plans for classes as well as follow-up notes

- **Possible problems and solutions**

Certain problems can be anticipated, so it is sensible to plan for them in advance and to prepare contingency plans to deal with them. Here is a list of potential problems:

- Hardware breakdown or malfunction
- Unreliable technical assistance
- Not enough participants/customers, or too many
- The schedule is not appropriate to meet the needs of key user groups
- There is local opposition to the telecentre
- Anticipated funds may be delayed or may not be forthcoming at all
- Volunteers prove to be unreliable
- The telecentre premises may be too small, too hot or too cold
- There may not be sufficient staff to sustain all the telecentre's programmes
- Telecentre staff may not be skilled in dealing with customers
- Telecommunications connections are unreliable
- Students may refuse to obey the rules

- **Budget and financial planning**

It is necessary to show that the telecentre is able to raise sufficient funds to keep running, either from donor agencies, government or users or a combination of these. This will need a summary of projected costs and a cash flow worksheet describing on-going expenses and revenue for the first year of the telecentre's life. This will probably require the assistance of an accountant. Perhaps there is an accountant on the user committee who would be willing to volunteer his or her services. The telecentre business plan should be reviewed by the user committee every year to accommodate new developments and new ideas. A business plan should be continuously maintained as it has on-going value in the sense that:

- It is a guide to setting up and running the telecentre
- It explains to partners and funders why the telecentre needs their help
- It is used to raise funds for the telecentre
- It acts as background material for staff and volunteers
- It sets the telecentre's on-going operational budget

3.2 Establishing the Objectives of the Telecentre

Every telecentre is established with the main objective of providing members of a community with access to computer and telecommunications technology. A telecentre cannot be viable unless it refines this broad objective to suit the needs of specific community groups. This research process is one of the critical responsibilities of the telecentre's user committee. The objectives of a telecentre will also expand or shift over time. As user patterns become clearer and users become more and more empowered and skilled, the user committee will make further decisions on the most appropriate groups for the telecentre to serve and the most productive operating hours. Initially, telecentre objectives will be determined by the answers to questions such as:

- What are the needs of the community?
- Approximately how many people are going to use the telecentre?
- What is the key target group?
- What services will be offered?
- What networks or partnerships with other organisations exist or can be developed?
- How much money is available for running the telecentre?
- How many paid staff will be needed?
- How will staff be recruited?
- How many volunteers can be relied upon?
- How many hours of the day will the telecentre be open?

3.3 Budgeting

The telecentre budget is made up of all the costs and income sources
There are two kinds of costs:

Capital expenses and one-time expenses for start-up; such as purchase of equipment, furniture and furnishings and renovations to premises, deposits to suppliers of electricity, telephone connections, etc. Expenses that will continue once the telecentre is operational; such as salaries, rental, equipment maintenance and replacement, insurance, software and computer supplies, marketing costs, telecommunications costs, educational materials, stationery and cleaning materials. The other important section of the budget refers to the income projection. This is an estimate of the type, amount and sources of income that the telecentre expects to make. Income for the telecentre may be received from:

- Telecentre user fees
- Telecentre memberships
- The business community
- Government subsidies and contracts for services
- Grants from local organisations or funding agencies
- Special fundraising events
- Others

3.4 Pricing Telecentre Services

All the services offered by the telecentre must be carefully and individually costed and priced. It is important to calculate what resources are needed for each task, including the amount of staff time. Ideally, the prices charged for the goods and services should be affordable for small community groups and large community education projects; large businesses and small entrepreneurs; and

government departments and state institutions while, at the same time, the telecentre realises a profit. One method to calculate charges is to establish the cost of each service for the centre, and add a certain percentage to generate the required income. The percentage added to the costs should not produce a final price that members of the community cannot afford. Test the price with community members beforehand or do a simple survey of different community groups before making it public. Finally, it is necessary to be attentive to the response received from the community once the service begins to be offered, and act accordingly. Calculations of costs should include all types of costs involved in providing the service, i.e. all current costs of the centre, maintenance costs, supplies, salaries, etc. Adding 20% to the final cost as a reference and observing how users react to these prices is a good starting point. There are several types of fees that might be charged:

- **Individual user fees.**

Additionally to the individual service pricing, frequent and regular users deserve a different charge because they form the clientele base. For special clients, it may be worthwhile offering a periodical fee (weekly, monthly, annually). This is not only a reward to the regular clientele and a way to retain the best customers, but it can also be an incentive to attract new users.

- **Collective user fees.**

Besides individuals and frequent users, there may be a need to also consider collective clients, who may deserve a different fee. This may include groups of students, farming organizations, or women's self-help groups in the community.

- **Corporate tariff.**

A different way of looking at collective users is focusing on organizations that are interested in the services of the telecentre, rather than the specific persons who actually come to the telecentre. It may be that a certain local business or other collective organization is interested in using the services of the centre. A corporate tariff might be workable for those organizations.

- **Institutional charge.**

There may be a potential collective client in the community, which is part of a larger organization. For example, governmental agencies or public services providers may have a branch or a representative in the community. These types of clients may also be considered as corporate clients, and it may be more profitable to visit the headquarters to arrange a fixed fee for the whole institution, rather than for just the branch in your community. The extra effort could produce extra income and more profit.

- **Sponsorship.**

Another form of income can be obtained through sponsorship. An organization, such as an agricultural cooperative, will pay to have particular information available in the telecentre. This may be in the form of a computer page, audiocassettes, or printed materials. The information is usually made available free of charge. A typical example is a contract service for a public agency such as the government health service.

- **Memberships.**

Members of the community may be approached to become "official" supporters by contributing money for telecentre membership even if they are not users. In some countries, this kind of income supports telecentres, community radio stations, libraries and other public benefit organizations. The telecentre can develop some kind of visible symbol that gives public recognition to the donors.

- **Services free of charge.**

Besides being sustainable, the telecentre's mission is to serve everyone in the community with certain basic services. It could be that, in certain situations, people simply lack the funds to use a service they may need. This may be an emergency such as a personal accident or any problem that could be solved through the resources of the centre by people who cannot pay, or who lack the funds at that

particular time. Despite these measures, evidence seems to show that few telecentres are capable of attaining self-financing sustainability in their early years. *The core issue of financial sustainability of development telecentres is dependent upon their placing simultaneous emphasis on the communication functions as well as the information functions that telecentres perform. Achieving financial sustainability is wholly dependent on serving the needs of the community.* Serving its community with information that is locally relevant, useful and useable is a significant function of a telecentre. This recognition often changes a centre's otherwise techno-centric character, shifting its emphasis from the delivery of leading edge technology to previously under-served populations, to that of putting the local community in a position of priority. This makes the telecentre considerably more sustainable programmatically, which in turn leads to the increased likelihood of it becoming more sustainable financially, but it tends to moderate the allure, even glamour, that is sometimes associated with the introduction of frontline technologies among 'un-reached' populations.

Handbook for Telecentre Staffs, Prof. Royal D. Colle and Raul Roman, Cornell University, Ithaca, New York, USA, October 2002. The authors have given permission to use the manual in this project and also to have it translated into Nepali.

Note: This document has been extracted from the SPPD-RUPP Strategic Plan of Action document

ANNEX 4: INFO-MOBILISATION

Creating a community learning system capable of empowering communities to use information for their own development.

The Social Dimensions of Information and Communication Technologies

Research into the use of ICTs for community development advocates a social vision for using ICTs to eliminate and/or redress the deeply rooted inequalities of modern societies.

Such a vision is based on the following premises:

- Whilst connectivity is important, it is not sufficient to contribute to development.
- Equitable access, meaningful use, and social appropriation of ICT resources are all
- necessary to take advantage of available opportunities and achieve positive results.
- Certain enabling conditions must exist for ICTs to contribute effectively to development.

In this vision, ICTs are neither positive nor negative in themselves, but they are not neutral either. Left alone, they end up reproducing and deepening existing inequalities in society. *The term social appropriation is used to encapsulate the vision, and it is used to describe the process that leads to the social transformations that occur as a result of using ICTs.* Social appropriation occurs when Internet resources help transform daily life by contributing to the solution of concrete problems. Evidence of appropriation is not found in the use of ICTs, but rather in the changes that they have brought about in the real world. Only when Internet resources become useful tools for transforming everyday life, do ICTs reach their full development potential. The social appropriation of ICTs for development can be demonstrated in a number of ways, such as:

- offering better medical information to patients;
- improving the quality of education through the use of innovative teaching resources;
- introducing varied, relevant programming into community radio broadcasting;
- increasing sales of local products in the marketplace;
- disseminating the results of local research; and
- coordinating action among diverse groups with common goals.

Towards the Social Appropriation of ICTs

One way of achieving social appropriation is the *methodology known as Infomobilisation*. Infomobilisation is an organic process of change in which collaborative groups explore and learn about problems and solutions in an iterative manner. *Infomobilisation is a collection of participative activities that ensure ICTs have optimal impacts for development within given communities.*

- It provides a methodology to design technology and social systems simultaneously through a participative and incremental process that does not require coercion and creates no resistance to change.
- ICT architects and target community groups jointly determine how technology can be used to develop new ways of accomplishing group and community goals.
- System designers and system users jointly learn about the possibilities created by new technologies, and then they design systems to use them.

The methodology for Infomobilisation is based on socio-technical systems theory, which is an outgrowth of general systems theory and its application to the design of information systems in organisational settings. Socio-technical system theory claims that separate efforts to optimise the technical system and the social system will lead to sub-optimal results, and can even be infeasible.

The observation is made that the same information system can be a success in one organisation/community but a failure in another, while the same organisation/community can experience success with one information system but fail with another. Hence, the information system and its context must be studied, understood, and managed together, not separately.

Infomobilisation applies these theories to rural communities in developing countries, where they are seen to be even more applicable than in commercial or government organisations because community actions are influenced more by social factors and individual choices than are organisational actions. *The applicability of a socially based approach to information systems in communities arises from information technology being an intellectual technology, as opposed to an industrial technology. Industrial technologies, like a water pump or a generator, typically have a fixed set of functionalities.*

Information technologies, however, have functionalities that are not fixed at the outset, but can be innovated endlessly, depending on the interaction with the people who implement and use them. In the process of its implementation within an information system, a given set of information technology becomes subject to the shaping influence of the intellects of its implementers and users, who can end up creating an information system that the inventors and promoters of the technology never had in mind.

Information technology then, once installed, can react with and extend the intellects of its implementers and users, who can then turn their transformed intellect to innovating even more functionalities for the technology, setting in motion an endless iterative sequence of action and learning. It has thus been shown that work systems are most effective when technology systems and social systems are closely aligned. Studies have also shown that when technology is used to enable new work systems where both social and technical systems change through a participative process, significant group performance improvement can be realized.

A Methodology for Applying Best Practices

In Infomobilisation, the focus is on concurrent processes of technological and social change and on the joint optimisation of human and technical processes within communities. The implication of Infomobilisation for the implementation of ICTs in development is that incremental and iterative development allows for a collaborative learning process based on evolving community needs. A large number of small projects are quickly implemented, rather than a few longer-term larger and riskier projects. Organisations typically encounter resistance to change when they try to introduce new technologies and a myriad number of methods have been devised to overcome this resistance. In the Business Schools, they call this “change management”. But Infomobilisation differs from change management in that it facilitates change in a way that avoids resistance by ensuring the technology is embedded into change processes that a community itself has instigated.

Infomobilisation involves;

- adaptive planning,
- continuing change,
- community learning,
- disjointed incrementalism,
- adaptive learning,
- alignment of social and technological systems,
- participative values (as opposed to coercive),
- organic change (as opposed to directed change),
- discretionary coalitions,
- social and stakeholder groups, and
- outside/inside activists (as opposed to outside change agents).

Infomobilisation confronts communities with their information requirements. It addresses the design, delivery and utilisation of community information systems by;

- Defining community information requirements based on needs and priorities that have been expressed by the communities themselves,
- Igniting community aspirations and empowering communities with appropriate skills for fostering local development that is information-based,
- Expanding a community's social capital through enhanced access to communication facilities and information resources,
- Embedding community based ICT services within existing economic, governance and social structures,
- Infusing enhanced capability for information access within communities,
- Achieving sustainability; of financing, service delivery and operating functionality,
- Ensuring that benefits arising are not usurped by existing elites, and are equitably disseminated among the socially and economically disadvantaged groups,
- Extending and intensifying existing development programmes that carry a significant potential for additional community benefit from enhanced information management capabilities that are based on ICTs.

The methodology consists of the actions necessary to ensure that ICTs have optimal impacts for development within communities in developing countries. The process is made up of;

- Familiarising communities with their existing use and sources of information as well as with the gaps that exist between existing and desired information resources,
- Alerting communities to the potential application of information to their problem solving efforts and to their development aspirations,
- Sensitising communities to the existence and accessibility of abundant information resources and to the capabilities of ICTs for accessing and manipulating information,
- Propelling communities towards the acquisition of the new knowledge they will require in order to exploit the power of ICTs,
- Empowering communities with information literacy; the skills necessary for the mastery of new media, the internet and multi-media,
- Motivating communities to apply ICTs to the new opportunities that become possible from their relationship with ICTs,
- Encouraging the collection, classification, preservation and dissemination of indigenous knowledge and cultural information artefacts,
- Fostering appropriate local mechanisms for sustaining the equipment, services and operations of community based ICTs.

Infomobilisation uses various participatory mechanisms for community engagement, including;

- household surveys, as well as base-line,
- community focus groups,
- group dynamics,
- user committees,
- training and orientation sessions and demonstrations,
- facilitated community conferences.

These techniques comprise a community learning system, whereby the community starts by releasing its own potential for creating a better life, learning about the information they will need to help them achieve this, then satisfying those needs; and as a result of the experience becoming increasingly capable of understanding and exploiting information further to satisfy needs of a progressively higher

order. The progression can be depicted as an iterative process of; action > evaluation of outcomes > community learning > knowledge acquisition > further action.

In the same way that change management methodologies help organisations to accomplish the restructuring of underlying patterns of behaviour and relationships that is necessary for ICTs to achieve their optimum outcomes, Infomobilisation helps communities undergo the same transformations in order to get the maximum development value out of their ICT resources. Table 1 lists the principal components of the Infomobilisation system.

**Table 1: The Principal Components of Infomobilisation:
Blending Community Mobilisation with Information for Development**

Focused on the Community	Focused on the Telecentre
Community based organisations	User committee
Savings and credit schemes	Staff
Information Focal Points (Infocals)	Community outreach:
Community asset mapping	Telecentre marketing
Development planning	Community surveys
Development implementation	Community focus groups
	Evaluation

Table 2 depicts the relationships between the principal components of Infomobilisation.

**Table 2. Mapping the Relationships between Community Mobilisation and Information
for Development**

Entity	Relationship	Entity
community members	Join Join	community based organization saving and credit schemes
community based organization	Form perform appoint participate in perform conduct	saving and credit schemes community asset mapping infocals community outreach development planning
Infocals	Elect Coordinate Participate in Provide information demand to conduct provide information for	telecentre user committee development planning telecentre outreach activities telecentre staff evaluation community based organisations
saving and credit schemes	lend money to support	community members development implementation
telecentre user committee	appoints directs	telecentre staff evaluation
telecentre staff	Conducts Provides information for Provides information for Provides information for Provides information for	Community outreach Infocals Community based organisations Community members Development planning Development implementation
Community outreach	Provides information demands to contributes to reports to reports to reports to	Telecentre staff Developmental planning Telecentre user committee Infocals Evaluation

Community asset mapping	Contributes resources to Contributes resources to Contributes resources to	Community outreach Development planning Development implementation
Development planning	Generates Reports Reports Informs	Development implementation Telecentre staff Telecentre user committee evaluation
Development implementation	Provides benefits to Provides benefits to	Community based organisations Community members
evaluation	Reports back to Reports back to Reports back to	Infocals User committee Telecentre staff

Teaching Infomobilisation

The following is a course outline for teaching Infomobilisation to community mobilisers who are already computer literate. People wishing to implement Infomobilisation who do not have these pre-requisite skills can obtain them from other training courses that are already in existence and available elsewhere.

Infomobilisation Course Outline

Prerequisites:

- Social or community mobilisation skills
- Computer literacy

Module 1

Overview of ICTs in community development

Learning objective:

Understand the potential for ICTs to contribute to development,

Topics:

Which ICTS are contributing to development and their characteristics
Examples, different approaches and their outcomes
Lessons learned from contemporary experience

Module 2

Telecentres; management and operations

Learning objective

Know how to manage and operate a development telecentre

Topics

Role of the telecentre
Role of the telecentre manager
Role of telecentre staff
Telecentre success factors

Module 3

Relationship between ICTs and community development

Learning objective

Understand the conditions required for making it happen; appreciate the characteristics of communities that foster information-based development and the inhibitors that prevent it.

Topics

Strategising for ICTs with development
Mobilising useful content
Targeting audiences

Module 4

Telecentres; working with communities

Learning objective

Know how to elicit information requirements from communities that will contribute towards local development

Topics

Community asset mapping
Surveys
Focus groups
Telecentre marketing

Module 5

The Community Learning System

Learning objective	Know how to establish a sustainable learning system within a community for using information to foster development.
Topics	Development planning Evaluation Outcome mapping

Resources:

- Handbook for Telecentre Staffs, Prof. Royal D. Colle, Raul Roman,
- Cornell University, Ithaca, New York, USA, October 2002
- Social Mobilisation Manual, Jaysingh Sah, Social Mobilisation
- Experimentation and Learning Centre, Nepal, Rampur, Chitwan, Nepal.

Note: *This document has been extracted from the SPPD-RUPP Strategic Plan of Action document.*

ANNEX 5(A): TRAINING COST ESTIMATE FOR TELECENTRE MANAGEMENT AND OPERATION

Description	Unit	Rate	week	Total
Training fees for email - Internet	11	1000	1	11000
Transportation to and from Kathmandu	11	1600	1	17600
Perdium (living and accommodation plus stationery in Kathmandu)	11	300	18	59400
expenses for the venue	1	5000	2	10000
Total				88000

Notes:

1. 10days training one Infomobilisation and telecentre operations will be given by RUPP- no charge
2. one week training on Internet e-mail operations by private institute
3. training to be conducted and students to live in the Staff College
4. 8 trainees from communities and 3 from institutions

ANNEX 5 (B): CYBERCAFE OPERATOR (SOFTWARE, WINDOWS, OPEN SOURCE, MULTIMEDIA, SOFTWARE TROUBLESHOOTING, HARDWARE INSTALLATION, MAINTENANCE, TROUBLESHOOTING, OPERATION ETC)

	persons	Rate/month in Rs	months	total Rs
Training fees	3	6,000	2	36,000
Transportation to and from Kathmandu	3	300	1	900
Per dium (living and accommodation near by	3	7,500	2	45,000
Total		13,800		81,900

ANNEX 6 : TELECENTRE EQUIPMENT COST ESTIMATE

S.N.	Description of Equipment	Unit	Cost (Rs)
1	Computer	1	40,000
2	Laser printer	1	20,000
3	Power supply equipment	1	10,000
4	Scanner	1	12,000
5	Fax Machine	1	25,000
6	Photocopy machine	1	120,000
7	webcam	1	3,000
	Total for equipment		230,000

ANNEX 7: PROJECT PROPOSAL FOR ESTABLISHMENT OF REGIONAL nPIX (NEPAL INTERNET EXCHANGE) VERSION 1.0 (20050110)

Situation Analysis and background

- The establishment of Nepal Internet Exchange, as an activity of ISP Association of Nepal with support from Computer Association of Nepal and other related bodies in 2002 has proved to be highly beneficial to the local Internet Community. In essence, the local exchange of traffic has grown from a nominal 200 Kbps in 2002 to more than 3 Mbps cumulative at the end of 2004. While this may not seem significant, it represents about 10 percent of the national Internet bandwidth capacity. The growth factor itself speaks for the benefits of the Internet Exchange.
- To further extend the benefits of local traffic exchange, it is necessary that the successful model of operation be replicated in other major urban areas of Nepal. We foresee a need for local exchange facilities in the four cities of Biratnagar, Pokhara, Bhairhawa/Butwal and Nepalgunj. Birgunj and Dhangadi can also be considered if local situation demands it.
- The proposal is to enhance the capacities of the operators in those regions and also make the national Internet infrastructure more robust.

Project Methodology

The project will follow the standards set up in establishment of Internet Exchanges all over the world. It will mainly base its work from the experience in setting up the nPIX facilities in Kathmandu. The project will create the basis for establishment of Layer 2 switching facilities in the other cities. It will also enhance the capabilities of the Nepal Internet Exchange in Kathmandu, with addition of backup facilities.

The project will collect pre and post data from ISPs and peering partners to evaluate the significance of the IX. This data will be collected every three months. The research will also document the exchange facility and the growth in the data traffic. The project will research on the use of Internet patterns and the direction of data flow through data collected at the IX and in co-operation with the ISPs. Questionnaires, statistical analysis as well as interviews will be used to reach results.

A significant part of the project will be capacity building. Eight training workshops are planned in the two years period. The training workshops, which are planned every three months, will basically provide ISPs with the necessary skills to be able to peer at the exchange. This would mean trainings on BGP peering technology. This could also mean an exercise to evaluate the progress at the IXP. Foreign experts will conduct the training when possible. When there is no such possibility, by the nPIX coordinator. The project will undertake two levels of training for local ISPs and other possible partners- one at basic level and one at advanced level.

Partnerships Strategy

We aim to establish a healthy partnership with local industry bodies in each area where applicable. We'd work with local NGOs, chambers of commerce and other local institutions where possible.

We'd also partner with International and regional experts on Internet Exchange operations and training. Partnerships with APNIC is also required for enlisting the NPIX in it's database, and for participation in its various activities.

Sustainability

The nPIX has been run on a sustainable basis through the fees collected from the ISPs. The same approach will be undertaken for maintenance and operation of the Ixes in regional centers. The member would be charged on a cost recovery basis.

Duration /Timeline

The project duration would be for Two years. The first year will concentrate on building capacities and preparing the ISPs for the network. The second year will create the local facilities and the Ixed will come into operation.

Jargon

IX = Internet Exchange, IXP= Internet Exchange Point, APNIC= Asia Pacific Network Information Center, ISP = Internet Service Provider, IP = Internet Protocol, SANOG=South Asian Network Operators Group.

Project Budget

Item	Unit Budget	Total Budget	Remarks
Infrastructure:			
L2 Switches (5)	75,000.00	372,000.00	
UPS (5)	25,000.00	125,000.00	
19" Racks and accessories (5)	12,000.00	60,000.00	
Wiring and other	1,000.00	5,000.00	
Enhancement Rack for nplX	35,000.00	35,000.00	
Total		597,000.00	
Trainings (8)			
Instructor Travel (8)	6,000.00	48,000.00	
Local Training Expenses (8)	5,000.00	40,000.00	
Training Fees (8)	10,000.00	80,000.00	
Staff Times			
Time of nplX CEO (6 man month)	10,000.00	60,000.00	
Assistant / Coordinator (12 m-m)	7,000.00	84,000.00	
Research and Operational Costs (3)			
Research Workshop & tri-monthly publication	25,000.00	75,000.00	
Evaluation		20,000.00	
Total		860000	

Note on Infrastructure: The bulk of the infrastructure will be needed in the second year. But owing to the import times, it is advisable to do it earlier. IT is also considered, if 5 sites are not feasible, the other equipment will be used as backup equipment for other sites, and be used when other locations are ready.

Proposal Prepared by

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ANNEX 8: COMPUTER EDUCATION PROJECT

1. Introduction to COPPADES

COPPADES is an NGO working for the empowerment of the poorest and the discriminated through combined activities that enhance educational, organizational and economic strength of the people. COPPADES works with people who suffer from oppressive poverty, lack of alternative income opportunities and the conflicts and violence spanning for almost a decade and finding themselves entrenched in a vicious cycle, hopelessly looking to a quickly depleting natural environment for their survival.

Among a number of programs implemented by COPPADES, Nepal ICTs Project is the one that works to bring computer and ICTs education to rural public schools bridging the digital divide. COPPADES brought computers to 68 schools in the year 2003 in the first year of its operation. COPPADES focuses on rural schools that have minimum required infrastructure but have to access to computer education for their students. COPPADES also plans to connect them to the Internet wherever possible.

2. Basic Computer and Information Communication Technology Education Project (BCICT)

Basic Computer and Information and Communication Technology Education Project (BCICT) is the second phase of the project in which it aims at reaching to 80 rural public schools in the year 2005. This will bring access to approximately 20000 school students and an additional 10000 non-student youths and interested people in the surrounding areas where the schools are located.

3. Collaboration between COPPADES and World Computer Exchange (WCE)/Computer Aid International (CAI)

COPPADES has been working with World Computer Exchange (WCE) and Computer Aid International (CAI) in the implementation of Computer Education Project. In the past both World Computer Exchange (WCE) and Computer Aid International (CAI) have donated computer equipment to COPPADES to reach rural schools in Nepal. The current project is being implemented in collaboration with WCE, USA.

4. Introduction to WCE and CAI

WCE is an international educational non-profit focused on helping the world's poorest youth to bridge the disturbing global divides in information, technology and understanding. WCE leverages the resources of businesses, strategic allies, volunteers, and schools to build the capacity of WCE's partners to prepare local schools, teachers, and students to use the Internet as a bridge to new resources, opportunities, and understanding.

Computer Aid International (see Annex One for their intention to collaborate with COPPADES) is also a non-profit organization working in bridging the digital divide that enormously exists between the developed and developing countries.

5. Implementation Process:

The project is implemented through a process that assures intended output of the project.

a. Application from schools

The selection of schools begins from the letter of interest from schools through an application to become part of the project. The schools are asked to send information on the number of students, possible number of people outside schools that would benefit from the computer education,

details of existing infrastructure such as the supply of electricity, classroom appropriateness for computer education and furniture necessary (please see Annex Four for the type of form to be filled by schools). The schools are provided with a questionnaire for so that they can send details which later can be followed up.

b. Recommendations from DEOs

The schools are initially recommended by the District Education Offices in their respective districts. The DEOs make recommendations on the state of the physical infrastructure such as the classroom, furniture and power supply. The recommendation of the DEOs is also an evidence that the schools are allowed to run computer classes in them please see Annex Three for the type of letter written to DEOs). They also can look for other support in the process.

c. Training:

Hardware training

The training for teachers and local follow up representatives and entrepreneurs includes hardware and software. On hardware training curriculum includes introduction, history, generation and types of computers such as analog, digital and hybrid computers and on the basis of their size such as super computer, mainframe computer and micro computer. Trainees know and learn how to handle parts such as the mother board, ISA Mother Board, PCI Board, CPU, Computer Memory, Main Memory, RAM (Random access memory), ROM (Read only memory); Auxiliary Storage such as the Floppy Disk, Hard Disk, Compact Disk, Power Supply; cards such as ISA, PCI, AGP, IO Card, Display Card, Sound Card, Modem, Network (LAN) Card, TV Tuner Card etc; input device such as keyboard, Mouse, Scanner, Light Pen, Joystick; soft and hard output devices such as monitors monitor, printers, impact printers, non-impact printer; and computer assembling.

Also included are software Installation; operating system installation, application software installation, driver software installation, names of components and drivers, serial numbers, CD keys, licenses, installations, Networking equipment, peripherals, upgrading possibilities and implications.

Software Training

Software training includes Windows 98, Windows 2000, Windows XP, MS, PowerPoint, MS Word, MS Excel, MS Access, Internet, E-mail, PageMaker, PhotoShop, Corel Draw, GW Basic, Q Basic, HTML, DHTML, FrontPage Designing, MS DOS, Networking; Computer Maintenance skills such as DOS - CD, MD, RD, CLS, Date, Time, Copy, Find, Copy con, -dir, Prompt, Del, Ren, creating batch files, wording system files, Control panel, Add remove programs, Add new hardware, Fonts, Mouse, Display, System, Sounds, Keyboard, Printer, Desktop Themes, Modem, Multimedia, Sounds, Telephony, Regional setting, Passwords, Printers and hardware and software troubleshooting. Training also provides all necessary skills on Computer Networking.

6. Follow up procedure:

Follow up and monitoring is done through direct site visits and infrastructure and other information verification by COPPADES staff and an ongoing training, monitoring and follow up by partner NGOs and computer software/hardware entrepreneurs in the respective areas. Infrastructure verification includes the physical facilities of the school, classroom appropriateness for computer classes, furniture, power supply and wiring.

Follow up reports are generated with the help of the local partners and schools in the project by requesting them to fill up a form (Please see Annex Two) periodically. The information is shared with Social Welfare Council, District Education Offices, Village Development Committees and District Administration Offices.

7. Local capacity building

COPPADES has worked with local NGOs and Computer entrepreneurs in the previous years. This approach has been very effective in effective implementation of the project with regards to saving time and cost of work. It also becomes very important in building local capacity thereby creating possibility for long term sustainability of the project. The local partners are provided with training on software and hardware so that the schools surrounding in the district can have easier access to maintenance, training and upgrade of skill and equipment in future.

8. Use of the Internet and email

The main purpose of this project is to bridge the dangerously widening digital gap between the rich and poor and between the urban and rural areas. The aim is to bring the benefit of the information revolution that has been an outstanding achievement of the 21st century to the as many people as possible. While it will take time for some areas to have access to the Internet and E-Mail this project will include education and access to the Internet and E-mail wherever infrastructure allows. The project, however, will greatly contribute to building human capacity to promptly adopt digital information technology as soon as it is made available. This will substantially increase the ability of the people to make use of the information on health, education, agriculture and all areas of development.

9. Expansion Plan

This year COPPADES plans to reach 80 schools in its second phase of the project. If sourcing and administrative costs are available COPPADES will be able to bring computer and IT education to schools in the number given below.

	Year	Number of Schools	Students	Non-students
i.	Current year:	80 schools	20000	10000
ii.	Year 2006:	160 schools	40000	20000
iii.	Year 2007:	400 schools	80000	40000
iv.	Year 2008:	960 schools	160000	80000

As is shown above the impact of the project is enormous. There will be approximately 40000 students and 20000 non-students, 80000 students and 40000 non-students and 160000 students and 80000 non-students benefiting from the project in the years 2006, 2007 and 2008 respectively.

10. The approximate cost for different components of the project are as listed below

Years	Computer sourcing, administrative to be sent to WCE and CAI Overseas	International and national ocean and land shipping	Training and local capacity building	Administration, installation, additional parts and equipment, follow up etc	Others/contingencies	Total cost per school
Year 2006	23750	5825	5000	28910	3000	66485
Year 2007	23750	5825	5000	28910	3000	66485
Year 2008	23750	5825	5000	28910	3000	66485
Total	71250	17475	15000	86730	9000	199455

It is possible that the costs can be shared between different stakeholders. The cost of equipment is not included as the computers will be made available free of cost once we send them the sourcing and administrative cost as detailed in these tables. Training and local capacity building costs could be another category where donor funds could be very necessary.

There will be some costs to be borne by the schools themselves either through their internal funds or from support from VDCs and DDCs where the schools are located. The computers for the year 2005 will be in the specifications of minimum Pentium II (P2) while the computers from the year 2006 onwards will be minimum Pentium III (P3).

Summary of Cost				
Year of Operation	2006	2007	2008	Total for three years
Computer sourcing, administrative, testing, packaging to be sent to WCE and CAI Overseas	3800000	7600000	15200000	26600000
International and national ocean and land shipping	932000	1864000	3728000	6524000
Training and local capacity building	800000	1600000	3200000	5600000
Administration, installation, additional parts and printers and equipment, follow up etc	4625600	9251200	18502400	32379200
Others/contingencies	480000	960000	1920000	3360000
Total Costs	10637600	21275200	42550400	74463200

ANNEX 8 (A): EMAIL - COMPUTER AID: POSSIBLE FUTURE COLLABORATION ON A GREATER SCALE

----- Original Message -----

From: "Tony Roberts" <tonyroberts@hotmail.com>

To: <tony@computeraid.org>; <ncoc@ntc.net.np>; <TAnderson@WorldComputerExchange.org>

Sent: Friday, April 08, 2005 10:00 PM

Subject: Computer Aid: Possible future collaboration on a greater scale

Dear Dikendra,

Computer Aid would certainly be happy to again collaborate with COPPADES to bring computer education to rural Nepali students. We would have no problem at all with those volumes and in 2006 we expect Pentium3 to be our minimum specification. It would be a pleasure to partner again with WCE and ship equipment in a coordinated maner defined by COPPADES.

It is great news that Nepal Telecom would bring Internet connections to all participating schools. Very exciting.

Kind regards
Tony Roberts
Chief Executive
Computer Aid International
(currently visiting partners in Kenya)

**ANNEX 8 (B): ICT SCHOOL PROJECT FOLLOW UP QUESTIONNAIRE
– COPPADES 08/06/2003**

1. General Information on the School

1.1. Contact details:

Name of school:

Contact address and telephone of the school:

Name of school Headmaster:

Contact address and telephone of schoolmaster:

Name of computer teacher:

Contact address and telephone of computer teacher:

1.2. How many students attend your school (please specify for each class):

8 class _____ 9 class: _____ 10 class: _____ 11 class: _____ 12 class: _____

1.3. How many computers did you receive?

1.4. Please specify all other equipment that was received such as printer, speakers and cables:

1.5. When did you receive the computers (please specify the exact date)?

1.6. When did you start using the computers (please specify the exact date)?

2. Technical information.

2.1. Do you have electric power supply in your school?

2.2. Do you have a working phone line in your school?

2.3. Do you use or have a generator that can be used to operate the computers in case you don't have electric power or you have other electric power problems?

2.4. Please specify for each computer if it's working or not
If possible, please specify why the computer is not working.

You can also use the provided space for remarks even in case that the computer works.

Computer number 1: working / not working

If not, why:

Computer number 2: working / not working
If not, why:

Computer number 3: working / not working
If not, why:

Computer number 4: working / not working
If not, why:

Computer number 5: working / not working
If not, why:

Computer number 6: working / not working
If not, why:

2.5. Do you have a printer?
Does the printer work?
If not, when possible, please specify why not:

2.6. Please specify which kind of technical problems you have with operating the computers. Please write down the most common problems:

2.7. What do you do when there is a technical problem with the computer?

2.8. Does the teacher know how to handle technical problems?

2.9. Do you have the possibility, when needed, to get technical support from outside?
(For example, from the closest big town or village, computer workshop etc)

If yes, please check with the technical support company, how much does the service cost.
(For example, how much will it cost for a technician to come to school to check the computers?)

If you did use outside support can you specify from where, which kind of support and
The cost of such support:

2.10. Do you have any cable problems? If yes, what are the problems and what causes them?

3. Teaching and using the computers

3.1. Did you use the computers?

If not, please specify why not (such as: no teacher, teacher has no time...):

If yes, please specify for what (student computer classes, computer training of community people (non-students), school administrative use and so on):

3.2. Did you put computer class as an integral part of the curriculum?

3.3. Can students choose to learn computer as a part of their studies?

3.4. Which classes in school can take computer classes?
(8 class, 9 class, 10 class, 11 class, 12 class)

3.5. How many students in school are taking computer classes?
(Please specify for each class):

8 class: _____ 9 class: _____ 10 class: _____ 11 class: _____ 12 class: _____

3.6. How many hours per week of computer class does each student get?

3.7. How many students take part in one class in the same time?

3.8. Please specify the subjects that the students learn (such as software use, basic background on computers, using word, excel or other software and internet browsing):

3.9. If possible, please specify if the students have favorite subjects they want to learn about and why?

3.10. How does the main school management committee keep track with the computer classes? Do you have a specific person in charge of supervising the computer teacher? Who is that?

4. Community computer teaching services / classes to non students

4.1. If possible, can you specify the total number (roughly) of people which live in the villages, where the students of your school come from:

Total number of people: _____

Between the ages of:

18-30 years: _____

31-50 years: _____

4.2. Do you offer computer classes to other people/non-students?

4.3. Did you give any computer classes to non-students (other people in the community who are willing to learn computer but are not students in the school)?

4.3.1. If not, why?

4.3.2. If yes, please try to answer the following questions:

4.3.3. How many people/ non-students took computer classes from your school during the past years?

4.3.4. Do they take computer classes on a daily basis, whenever they want to?
Or do they take it on a monthly or weekly basis?

4.3.5. Do you charge non students any fees for using the computers?
If not, why?

4.3.6. If yes, how much do they pay for every time? How much for every hour, month or week?

4.3.7. Please specify how the school uses the money earned from such activity:

4.3.8. Does the teacher get paid for extra classes after school time and if yes, how much?

4.4. Do you think that if the school offered extra computer classes to non-students they will want it?

If no, why?

If yes, please try to answer the following questions in a general manner just based on your knowledge of the local community:

4.4.1 How many people do you think will attend the computer classes?

4.4.2. Let's say we charge them by hour rate, how much do you think they will be willing to pay (Just to remind you, the money paid goes to the school and therefore helps their kids' education)?

4.4.3. Does your computer teachers have free time to teach extra classes before and after school hours (For example, 8-10 AM, 16-18 PM)?

4.4.4. The teacher, of course, will be paid for the extra teaching time;
How much money do you think the teacher should get (please keep in mind the fees that you mentioned above for non students and answer with accordance)?

4.4.5. Is it legally possible for the school to charge such fees from non students?

4.4.6. Who do you think should be responsible for the money involved in this activity?
(A person from the school management committee, computer teacher, an out side person)

5. Cost

In this section you are requested to give all possible information regarding cost involved in operating and maintaining of the computers in working order. The best way to do it, if possible, is to write down to cost for each month:

5.1. Please give a rough estimate of the monthly cost to the school of operating and maintaining the computer room.

5.2. If possible, please specify the electricity cost for using the computers (electric power, generator and such):

5.3. Please specify the cost, if there was such, of outside technical support:

5.4. Please specify the cost of buying discs and paper for the printer:

5.5. Please specify any other cost which you might have (hardware, software and such):

6. Suggestions and recommendations

6.1. In this part you are requested to write down, in which other ways do you think COPPADES can give you extra help and support in making the computer project work better in your school. (Please add extra page if necessary)

ANNEX 8 (C): LETTER TO DISTRICT EDUCATION OFFICE

श्रीमान जिल्ला शिक्षा अधिकारी ज्यू

विषय: कम्प्यूटर तथा सूचना प्रविधि शिक्षा परियोजना बारे ।

महोदय,

उपर्युक्त सम्बन्धमा World Computer Exchange नामक अन्तर्राष्ट्रिय गैर सरकारी संस्था सितको सहकार्य तथा श्री ५ को सरकारको स्वीकृति र सहयोगमा यस संस्थाले आधारभूत कम्प्यूटर तथा सूचना प्रविधि शिक्षा परियोजना लागू गर्न लागेको ब्यहोरा जानाकारी गराउन चाहन्छौं । यस कार्यक्रममा समावेश हुन चाहने विद्यालयहरूकालागी सीमित कोटाहरू उपलब्ध रहेकोले त्यस कार्यालय अन्तर्गतका खास गरेर ग्रामीण भेगका सरकारी सहयोगमा संचालित माध्यमिक तथा निम्न माध्यमिक विद्यालयहरूलाई संलग्न सूची अनुसारको विवरण उपलब्ध गराइ कार्यक्रममा समावेशहुने अवसर बारे जानाकारी एवं कार्यक्रमको सफल कार्यान्वयनमा सहयोग गरिदिनुहुन हार्दिक अनुरोध गर्दछु ।

कार्यक्रममा समावेश हुन चाहने विद्यालयहरूले पालन गर्नुपर्ने सर्तहरू:

- कम्प्यूटर कक्षा संचालनको लागी आवश्यक भरपदो विद्युत आपूर्तिको व्यवस्था
- कम्प्यूटर संचालनको लागी आवश्यक वाइरिङ गरेको, धूलो नउडने, मुसा नपस्ने, कम्तीमा ५ वटा कम्प्यूटरका लागी ठाउ पुग्ने सुरक्षित कक्षा कोठा भएको ।
- कम्तीमा ५ वटा कम्प्यूटरका लागी उपयुक्त फर्निचर उपलब्ध भएको वा खरीद गर्न तयार ।
- विद्यालय समयमा विद्यार्थीलाई र विद्यालय समय बाहेकको समयमा वरिपरिका समुदायका यूवा तथा इच्छुक व्यक्तिहरूलाई उपयुक्त शुल्क लिएर कम्प्यूटर शिक्षा प्रदान गर्ने तत्परता ।
- यस परियोजना संचालनका लागी सम्बन्धित संचालक समितिको लिखित निर्णय सहितको प्रतिबद्धता ।
- यस संस्थाले तोकेको समयमा कम्प्यूटर तालीममा पठाउने शिक्षक भएको र त्यस्तो शिक्षकलाई तालीममा पठाउने साथै फर्केपछि कम्प्यूटर कक्षा संचालनको लागी प्रतिबद्धता ।
- कम्प्यूटर ढुवानी, तालीम, printer, modem, volt guard आदि जस्ता थप सामग्री तथा प्राविधिक सहयोग, अनुगमन तथा अन्य प्रशासनिक कार्यकोलागी आवश्यक श्रोत संस्थाले तोके बमोजिम उपलब्ध गराउन सक्ने ।

माथी उल्लेखित सर्तहरू पूरा गर्न सक्ने विद्यालयले सम्बन्धित जिल्लाको जिल्ला शिक्षा कार्यालयको सिफारिस सहित निम्न ठेगानामा यथाशीघ्र सम्पर्क गर्न सूचना गरिदिनु हुन बिनम्र अनुरोध छ ।

संस्थाको नाम: जनचेतना अभिवृद्धि र विकास अध्ययन समिति
सम्पर्क ठेगाना: पोष्ट बक्स ५९२६, सामाखुसी, काठमाण्डौ, नेपाल ।
फोन नं. ४३५३८७३, ४३५२४६८ Fax No: 4356157
इमेल ठेगाना: coppades@ntc.net.np

जनचेतना अभिवृद्धि र विकास अध्ययन समिति

ANNEX 8 (D) : QUESTIONNAIRE

जनचेतना अभिवृद्धि र विकास अध्ययन समिति आधारभूत कम्प्यूटर तथा सूचना प्रविधि शिक्षा परियोजना

विद्यालयको विवरण

१. विद्यालयको नाम.

२. ठेगाना.

- जिल्ला.
- गा.वि.स.
- वडा नं.

३. सम्पर्क ठेगाना.

- पत्राचार गर्ने ठेगाना.
- टेलिफोन फ्याक्स.
- इमेल.
- सम्पर्क व्यक्ति.

४. विद्युत (क) छ (ख) छैन

५. विद्युत वा उर्जाको स्रोत: (क) विद्युत (ख) सोलार (ग) जेनेरेटर (घ) अन्य

६. वाइरिङ गरेको छ वा छैन ?.....

७. वाइरिङ कस्तो छ ?.....

८. अर्थिङ छ वा छैन ?.....

९. पावर प्लग कतिवटा छ ?.....

१०. कम्प्यूटर कोठा तयारी छ कि छैन ?

११. कोठाको गुणस्तर

१२. कोठाको साइज: लम्बाई चौडाई उचाई

१३. सुरक्षाको दृष्टिकोणले कतिको बलियो छ ?.....

१४. फर्निचर तयारी भएको छ कि छैन ?.....

१५. फर्निचर कस्तो बनाएको छ ?.....

१६. जम्मा कति सेट कम्प्यूटर अट-उन सक्छ ?.....

१७. माथि भएको पूर्वाधारहरू तयार भएका छैनन् भने किन नभएका हुन् ?

क. अझ केहि समय लाग्छ भने पूर्ण तयारी गर्न कहिले सम्म लाग्छ ?

ख. पूर्वाधारहरू तयार हुन सक्दैनन् ।

ग. कुनै एउटा पूर्वाधार तयार हुन सक्दैन ।

अरू केहि कारण भए तल भर्नुहोला ।

क)

ख)

ग)

घ)

१८. विद्यालय समय बाहेकको समयमा समुदायका यूवा तथा इच्छुक व्यक्तिहरूलाई उपयुक्त शुल्क लिएर शिक्षा प्रदान गर्ने व्यवस्था गर्नु हुन्छ ।

१९. एक बर्ष भित्र कम्प्यूटर शिक्षा लिनेहरूको विवरण कति हुन सक्छन् ?

विद्यालयका विद्यार्थी		समुदायका अन्य	
छात्र	छात्रा	पुरुष	महिला

प्रधानाध्यापकको नाम:

सञ्चालक समितिको अध्यक्षको नाम:

हस्ताक्षर:

हस्ताक्षर:

विद्यालयको छाप

ANNEX 9: COMPUTERS AND INTERNET IN SCHOOLS PROJECT COSTS

				for 80 schools	<i>*for 160 schools (pilot project case)</i>	estimated for 320 schools in 2006 and 640 schools each year thereafter		
S.N	Particulars	Qty	Rate	Total Budget for 2005	Estimate for proposed 2006 (1)	Budget for proposed 2006(2)	Budget for proposed 2007	Budget for proposed 2008
1	3 month training for Teachers	80	5,000	400,000	800,000	1565000	3520000	3520000
2	220 volt to 110 volt converters for monitors	100	1000	100,000	200,000	400000	800000	800000
3	Network Cable for networking 30 meter in each station	2400	13	31,200	62,400	124800	249600	243360
4	Network Card replacements	100	500	50,000	100,000	200000	400000	400000
5	Transportation from Kolkata to Kathmandu	1	200000	200,000	400,000	800000	1800000	1800000
6	Assembling of Monitors	100	200	20,000	40,000	80000	160000	160000
7	Purchasing new printers	100	4000	400,000	800,000	1252000	2816000	2816000
8	House Rent	12	15,000	180,000	180,000	360000	540000	540000
9	Network connectors	435	10	4,350	8,700	17400	34800	34800
10	8 port Network Hubs	78	1200	93,600	187,200	375600	844800	844800
11	56K Modems	50	800	40,000	80,000	250400	563200	563200
12	Local transportation	1	50,000	50,000	100,000	100000	150000	150000
13	Per diem	1	50,000	50,000	100,000	100000	150000	150000
14	Stationery	12	1000	12,000	24,000	24000	50000	50000
15	Contingencies			23,650	47,300	94600	94000	94,000.00
Sub total A				1,654,800	3,129,600	5,743,800	12,172,400	12,166,160
B. Local Staff expenses		Qty	Rate	Amount				
1	Project Director	13	25,000	325,000	325,000	325,000	325000	325000
2	Technical Instructor	13	15,000	195,000	195,000	390,000	390000	390000
3	Assistant technical instructor	13	10,000	130,000	130,000	260,000	390000	390000
4	On site training monitors	26	9,500	247,000	494,000	494,000	1235000	1235000
5	Administrative assistant	13	8,000	104,000	104,000	104,000	130000	130000
6	Accountant	13	7,000	91,000	91,000	91,000	104000	104000
7	Office Secretary	13	5,000	65,000	65,000	65,000	78000	78000
8	Employee provident fund 10%			94,800	140,400	159600	200,000	200000
SUB TOTAL B				1,251,800	1,544,400	1,888,600	2,852,000	2,852,000

C. Sourcing, Admin, Ocean shipping			2,069,295	4,138,590	8277180	18623655	18623655
In USD \$			\$29,145	\$58,290	\$116,580	\$262,305	\$262,305
TOTAL A+B+C			4,975,895	8,812,590	15,909,580	33,648,055	33,641,815
Total Project cost in USD \$			\$70,083	\$124,121	\$224,079	\$473,916	\$473,828
Project cost per school			62,199	55,079	50,829	47,796	47,787
Cost for schools if sourcing, administrative and ocean shipping to be sent overseas is subsidized							
Total project cost			4965115	8,812,590	15906460	33641815	33641815
Sourcing, admin and shipping only			2069295	4,138,590	8277180	18623655	18623655
Cost minus sourcing, admin, shipping			2895820	4,674,000	7629280	15018160	15018160
School contribution (per school) if sourcing, administrative and shipping cost is subsidised			36,198	29,213	24,375	21,333	21,333
Cost in USD \$ per school if sourcing, administrative and shipping cost is subsidised			\$510	\$411	\$343	\$300	\$300
Note:							
* this column was calculated later for 160 schools							

Note: this document was prepared by COPPADES