



Prospects and Promises of Tele-medicine And Tele-health Program in Nepal

By Amod K Pokhrel¹

Tele-medicine and tele-health refers to health care carried out at a distance using telecommunications and information technology. However, World Health Organization (WHO) has made further distinctions between tele-medicine and tele-health². According to WHO, tele-health is more related to the use of telecommunications and information technology to protect and promote public health where as telemedicine is the incorporation of these technologies into curative medicine. In Nepal where 86% of people live in rural areas and only 29% of the poor people can reach a health facility within half hour time³, both telemedicine and tele-

health provides great opportunity to extend preventive and curative

services to majority of its people. Telemedicine and tele-health programs are further justified in Nepal as there is one nurse for 4000 people and one doctor for every 18,500 inhabitants. In terms of specialists, according to one survey, there is one dermatologist for every half a million people⁴ and one ophthalmologist for about a quarter million people⁵. For various reasons, majority of doctors and specialists are concentrated in city centers. Thus, to seek medical care from doctors or specialists, people have to travel long distances and spend huge amount of money. Therefore main advantages of promotion of telemedicine and tele-health care program in Nepal will be that it

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² Darkins A W & Cary MA, 2000. Telemedicine and Tele-health: Principles, Policies, Performance, and Pitfalls. Springer Publishing Company

³ Towards Pro-Poor Health Planning in the context of Macro Economics and Health, Country Case Study- Nepal 2004. WHO/SDE/CMH/04.7.

⁴ S.L. Walker, M. Shah, V.G. Hubbard, H.M. Pradhan & M. Ghimire, 2008. Skin disease is common in rural Nepal: results of a point prevalence study. British Journal of Dermatology; 158, p334-338.
⁵ <http://www.hollows.org/Nepal/Facts/>

will help to serve millions of underserved people in rural areas and avoid their (patients') time including travel time to specialist clinic visit. Also such programs will allow specialists to handle more patients. Although, telemedicine and tele-health programs offers solutions for many health problems but success of these programs starts with the understanding of the needs and wants of users and cost-effectiveness of such programs⁶. Therefore, conceptualization and prioritization of telemedicine in Nepal should be based on needs and wants of people and on the basis of available technology.

Prioritizing tele-medicine and tele-health program in Nepal

To evaluate population health or to monitor the impact of health intervention, morbidity and mortality based indicators are often used. But some times these measures could miss contribution of chronic disease, injury, and disability to population. Lately, WHO and World Bank have developed a single measure of calculation of burden of disease and disability to population based on contribution of chronic disease, injury, and disability in terms of Disability Adjusted Life Years (DALYs)⁷. This metric has opened an avenue for policy makers to understand and prioritize public health problems. Disability

Adjusted Life Years (DALYs) expresses burden or severity of disease in a single unit by combining Years of Life Lost (YLL) due to premature mortality and Years Lived with Disability (YLD) due to morbidity and disability. In DALYs, effects of disease at different ages are weighted differently, where higher weights are given to young children and lower weights to older people. The weights are different for different categories of disease and disability.

If we look at the health problems in Nepal by morbidity or hospital visits, top 10 diseases where people seek health care in hospital or health centers are, skin diseases followed by diarrhea and acute respiratory infection (ARI). Similarly, in terms of mortality based indicator, top 10 causes of deaths in Nepal for all ages are perinatal conditions, which include low birth weight and birth asphyxia and birth trauma followed by lower respiratory tract infections, ischaemic heart disease and diarrhoeal disease. However, if we look at the disease conditions by DALYs, then the infectious and parasitic diseases⁸ comes as number one health problem followed by perinatal condition⁹, neuropsychiatry conditions¹⁰,

⁶ Rifat L, 2004. Establishing Telemedicine in Developing Countries: From Inception to Implementation. IOS Press.

⁷ <http://www.who.int/healthinfo/boddaly/en/>

⁸ TB, STDs, HIV/AIDS, diarrhea, childhood-cluster disease, meningitis, hepatitis B and C, Malaria and tropical-cluster diseases, leprosy, dengue, Japanese encephalitis, trachoma and intestinal nematode.

⁹ Low birth weight, birth asphyxia and birth trauma

¹⁰ Unipolar depressive disorders, bipolar disorder, schizophrenia, epilepsy, alcohol use disorders, alzheimer and other dementias, parkinson disease, multiple sclerosis, drug use disorders, post-traumatic stress disorder, obsessive-compulsive disorder, insomnia-primary and migraine.

intentional and unintentional injuries (road traffic accidents, war, violence, fall and drowning) and sense organ related health problems (cataracts, glaucoma and other vision related health problems). Thus, prioritization of any health intervention solely based on indicators like mortality and morbidity or hospital visits could miss the contribution of chronic disease, injury and disability in population. For example in Nepal these indicators will miss burden of neuropsychiatry conditions,

nutritional deficiencies and sense organ diseases in population. To avoid policy confusion, government can prioritize telemedicine and tele-health programs to reduce the burden of disease, where metrics like DALYs can be used. Table 1 provides the top 10 causes of morbidity (hospital disease), mortality and DALYs for all ages in Nepal. Majority of these diseases or conditions are of preventable nature, where application of telemedicine or tele-health is possible.

Table 1. Top 10 morbidity by hospital visits¹¹, causes of deaths¹² and DALYs¹³ for all ages in Nepal

Rank	Morbidity	Mortality	DALYs
1	Skin diseases	Perinatal conditions	Infectious and parasitic disease
2	Diarrhoeal diseases	Lower respiratory infections	Perinatal conditions
3	Intestinal worms	Ischaemic heart disease	Neuropsychiatry conditions
4	Acute Respiratory Infection	Diarrhoeal disease	Ischaemic heart disease
5	Pyrexia of unknown origin	Cerebrovascular disease	Unintentional injuries
6	Gastritis	COPD	Respiratory infection
7	Ear infection	Hypertensive heart disease	Maternal conditions
8	Chronic bronchitis	Tuberculosis	Nutritional deficiencies
9	Anemia	Measles	Sense organ disease
10	Abdominal pain	Road traffic accidents	Intentional injuries

¹¹ Ministry of Health, Government of Nepal, 2002.

¹² Mortality Country Fact Sheet 2006, WHO

¹³ Calculation of author based on DALYs information available @ www.who.int/healthinfo/statistics/bodgbdeathdalyestimates.xls

Current application of telemedicine in Nepal and future prospects

E-mail based telemedicine has been proven to be one of the efficient way to educate health care providers and deliver health care services to patients around the world. In Nepal, first electronic resources for health care providers were introduced in 1995 through HealthNet. Currently, Nepali health care professionals use services like Health Inter Network Access to Research Initiative (HINARI), INASP of UK and Pub Med of USA to access health related information. In the case of health consumers (mainly in Kathmandu valley), often they have been found seeking health care related information through internet. Some private nursing homes have started providing available services at their center on the web and organization like Healthy Nepal (www.healthynepal.com) is trying to provide organized health care information for large number of people in local Nepali language. Yet, for the majority of consumers, who are in rural areas, telephone consultation is still common mode of tele-medicine. Therefore there should be continuous effort to improve this system. Lately with public and private sectors effort and initiatives, rural areas are also getting connected with internet, mainly with TCP/IP protocol. There is a potential to expand telemedicine using TCP/IP protocol such as store-and-forward method. This method can be

applied in the field of dermatology, neurosciences and eye care. An example of potential expansion of tele-medicine, especially the tele-ophthalmology program in Nepal using store-and-forward method is further discussed below.

Potential of up-scaling tele-ophthalmology program in Nepal

Cataracts or lens opacity is the most important cause of blindness in Nepal. According to Nepal Blindness Survey, prevalence of cataracts is 0.8% and every year about 175,000 people becomes cataract blind¹⁴. Like elsewhere; women have an excess burden of cataracts in Nepal. Unfortunately, their access to cataract-related services (especially surgery) is very low. From a public health point of view, there are great benefits to cataract prevention in countries where prevalence is high, but access to cataract surgery is low and prohibitive for disadvantaged groups. To evaluate the prevalence of major types of cataracts and lens opacity at the pre-clinical stage in Nepalese women, a cross-sectional study on lens opacity was conducted by this author in Ophthalmology Department of Manipal Medical College, Pokhara, Nepal with the collaboration of UC Berkeley's School of Public Health (division of Environmental Health Science) and School of Optometry (SoP). The study involved administration of questionnaires and examination,

¹⁴ <http://www.hollows.org/Nepal/Facts/>

photography and documentation of lens opacity in women who had no previous diagnosis of lens opacity or cataract surgery. Under this study the digital photographic (six photographs of each participant) of the cross-sectional view and the retro-illumination view of lens were collected from participants by senior ophthalmologist (Dr. Sachet Shrestha) at the medical college hospital using slit lamp with digital camera (loaned by SoP). Collected photographs were sent electronically to the optometrists and ophthalmologists at the UC Berkeley's School of Optometry for evaluation and grading. Lens photographs were graded and compared with the reference photographs of Lens Opacity Classification System III (LOCS III system). The graders provided the pre-clinical level scores of nuclear opacity, nuclear color, cortical and posterior sub capsular

opacities and this author analyzed the main risk factors for the pre-clinical damage of lens. These whole exercises were completed via teleconference and e-mail, where high-resolution photos of participants were sent to UC Berkeley via e-mail followed by photos on compact disks. This study provided an opportunity to not only document the lens opacity at the pre-clinical level/stage but also identify potential risk factors for earlier damage of lens in women. Examination of lens at the earlier stages will offer earlier intervention and prevention of most common cause of blindness in Nepal and there is a scope to expand this program (tele-ophthalmology) in Nepal. Similar photographic technique can also be applied in other areas of health care such as tele-dermatology and tele-radiology.



Fig 1: Lens photographs being taken at Manipal Medical College, Pokhara, Nepal

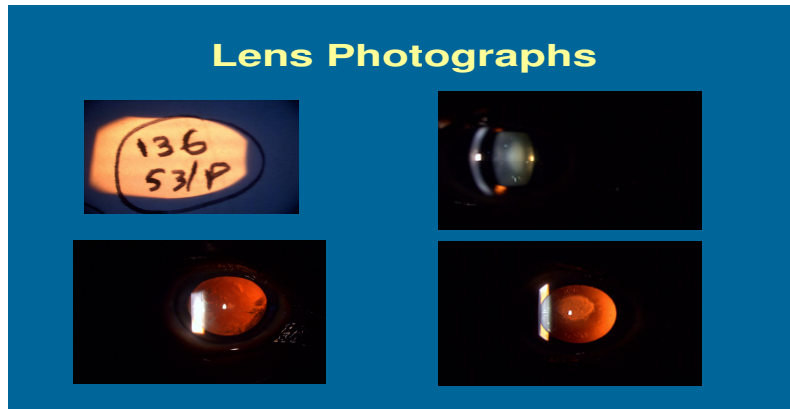


Fig 2: Cross sectional images of lens with nuclear opacity, nuclear color, cortical and posterior sub-capsular opacities.

Conclusions

The geographical remoteness is contributing big inequity in health care services for millions of people in Nepal. Expansion of telemedicine and tele-health programs provides ample opportunities to increase access to specialty health care in under served areas and to under served population. As information communication technologies are rapidly increasing in Nepal, the expansion of

telemedicine and tele-health program should be in the direction to reduce the burden of disease in population. As majority of common diseases in Nepal are preventable and there are already proven protocol and techniques to expand telemedicine in other health related disciplines, time is right to integrate tele-medicine and tele-health program in Nepalese health care system.

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An American Scientist's Techno-Trek Through Nepal

By Andrew Teetzle

This will be interesting. I accepted Suresh's invitation to lecture at Tribhuvan University in Kathmandu. Why not? Suresh's enthusiasm and generous spirit is infectious -- maybe do some good out there, see a new land, immerse in a new culture, learn new things. Get out, make some memories, experience the "full richness" (as Suresh says). Throw in a Everest basecamp trek. Good memories for when I'm 80 and in the rocking chair (I don't want everything I say to be a lie).

The plan: Two days in Kathmandu (silent "h") to orient, 12 day Everest trek, then back in Kathmandu for the lecture. "You're gonna feel like a pincushion" says my doctor, scribbling down all the requisite vaccinations, "Good thing you started early". The hepatitis series takes 6 months, all the rest are good to go. Good for the rest of my life, "armor-plated" I think. Good news: no malaria preventions needed given the high altitudes.

Flying over Russia and China was surreal, and Thai Airlines has great food and comfy seats -- I didn't want to get off. Cruised shops and great restaurants in the Bangkok airport, saddled up a 767 and headed for Kathmandu. Morning sun glints off Bangladeshi rivers, then the first glimpse of the Himalaya ("the abode of snow"). Everest! Leftside passengers cross over to see through the windows -- I imagine the pilot holding

extra left aileron to compensate, smiling knowingly. This is very, very cool. Descent for straight-in landing, Kathmandu. Gather luggage, gather passport stamps, be gathered by my waiting guides and their car, and drive into town.

Yuck.

Chaos and cacophony. Dirt, dust, smoke, horns, left side, right side, middle side, any side. Drive for effect. Dust! "Watch your health" admonishes my guide, "cover your mouth". Unbelievable. I have been sheltered. My first third-world experience and I'm not sure I like this.

Breathe (not too deeply). Relax. Hole up in your hotel room a few hours, you're just jet-lagged. After a few hours I screw up my gumption for a tentative foray to the hotel roof. Panorama city view. Wow, the place is big, a vast jumble of three to five story brick buildings, water tanks on top. Hazy, puffs of smoke rising everywhere. Circled by hills and stretching to the smoky limits of vision. Monster snowcapped peaks in the far horizon, ravens wheel and flash through the sky. Wow.

Let's try the streets. A carry a small compass for urban navigation -- no street signs seen (or at least recognized), celestial navigation impossible. This is Thamel, the tourist part of Kathmandu with narrow streets, half dirt roads, hub

and bub, warp and woof. Narrow winding streets full of people, movement, energy. I'm an easy mark and vendors see me coming, but I politely decline and they politely accept. Kinda fun, really. Camping gear, map, and book stores galore. Two days of this, tours to Boudhananath and Durbar Square (ancient temples). Funeral pyres. The Himalayan Journeys guides are good.

My university hosts call, and take me out for an elegant dinner of Bhutan cuisine. Introductions and pleasant conversation.

Then its time for the trek. A Twin Otter flight to Lukla, overflying Kathmandu Valley to a mountainside strip at 9000 feet. Meet my guide and porter and off we go. Teahouses, carved rock walls, tastefulness and serenity. The joyous Sherpas are the happiest people I've ever met. Mountains so high they seem overhead. Moving gradually higher over nine days, acclimating, culminating at Kala Patthar ("Black Rock"), a 18,000 ft hill facing Everest, etc. Wonderful. The acclimating works wonders and I feel great. Expectations met and exceeded.

Back to Kathmandu, expectations now far more comfortably set. The Tibetan Guest House staff is helpful beyond belief. A few more cultural tours, and then its lecture day. My host picks me up, tours me through the Tribhuvan University campus and the amazingly well adorned RF and Microwave

Laboratory (nice job Suresh!). Lecturing starts at 10:30AM and covers the both relatively abstract notions of complex modulation and complex radio architectures and the more practical aspects of RF circuit design. An overflow crowd! At least 150 people pack the room for an all-day lecture. I know this can't last, and indeed the crowd dwindles as some realize this wasn't their cup of tea, but by the end a hard core group of fifty won't leave, even when offered the chance, and we go into overtime. Super. They are absolute sinks for the material and make this whole endeavor so worthwhile. The feedback has been very positive.

I hang with some students as they take me to their favorite local lunch spot (a cultural event in its own right) and that evening my host takes me to fabulous Kathmandu Kitchen for a great dinner and live cultural entertainment.

Then (alas) it's departure day. A last look from the rooftop, a final walk about, then off to the airport, Bangkok, and home. I take home souvenirs, broadened horizons, and fond memories. Memories indeed. Yes Suresh, I have material for another lecture. Besides, I'd like to trek Annapurna.

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World-Class Telecommunications Research Laboratory in the Heart of Kathmandu

By Suresh P. Ojha

When I tell my American friends that they should go to Kathmandu to do perform and or present their research on wireless circuits and systems they are initially stunned. Nepal unlike the Silicon Valley or Georgia Tech is not known as a hot bet of innovation for wireless technologies.

Apart from the fact that wireless is a natural mode of communication for such a mountainous nation, few places in the world are so enthusiastic and well suited to develop and test new advancements in RF and microwave engineering. Mahabir Pun's award winning efforts, Nepal Bayern Electric's excellent high volume manufacturing of torroidal balanced transformers and the Tribhuvan University's RF and Microwave Laboratory and Program are all testaments to this.

There is a strong need and a stronger hunger amongst students and professionals for RF and Microwave engineering in Nepal. Now there is also a world-class communications research laboratory as well. The Nepal Radio Frequency and Microwave Research Laboratory at Tribhuvan National University in Pulchowk was established in 2004. It was established due to a generous equipment grant from Agilent Technologies.

The idyllic setting of Kathmandu belies the fact that this laboratory is one of the

most advanced telecommunications research laboratories in the world. It contains three vector network analyzers, multiple spectrum analyzers, two digital signal sources capable of nearly all modern digital communications formats, several analog RF and Microwave signal sources and numerous other high end measurement instruments.

In addition to test and measurement capabilities, Tribhuvan University also contains enthusiastic students who are trained in RF and microwave theory and measurement techniques. One of the most popular courses on campus is an RF and Microwave design course in which students are required to design microwave RF transformers, low pass filters and other circuits.

This laboratory also has the capability to fabricate any microstrip circuit dealing with frequencies from DC to 6GHz. It contains copious amounts 62 mils thick FR-4 material with a dielectric constant of 4.2. All essential laboratory supplies are present. Using basic fabrication techniques nearly any soft board circuit can be fabricated and thoroughly tested.

While taking an extended sabbatical to teach and conduct research in TU is a worthy endeavor that is very rewarding, many people simply do not have the time to spend a few months in Kathmandu.

Even if time is not available for an extended stay, many engineers have still managed to add to the engineering knowledge base in Nepal.

Nearly everyone can spare a day from their Nepal vacation to present a lecture on the subject of their research interest. This experience adds dramatically to the vacation experience as well. Most recently, Mr. Andy Teetzle, a former staff scientist for Hewlett-Packard and Agilent Technologies delivered a lecture on digital modulator design to a standing room only audience. He has chronicled his experiences in the previous article.

Though the lecture may be only for a few hours, this type of educational

tourism can have a lasting and meaningful impact on the numerous wireless efforts underway in Nepal.

If anyone is interested in working with the Nepal RF and Microwave Research Laboratory or presenting a lecture on any electronics related topic at Tribhuvan University, please contact Suresh P. Ojha at the following email address; spojha2000@yahoo.com

Suresh P. Ojha is the founder of the Nepal RF and Microwave Laboratory. He lives in the USA and is also a visiting faculty member at Tribhuvan University Department of Electrical and Computer Engineering.

Establishment of Kavre ICT Center – KICTC

At

IT PARK, KAVRE

Suresh K. Regmi

Sashi Bhattarai

Background

IT Park constructed by High Level Commission for Information Technology (HLCIT) has been lying vacant since its commissioning. Information Technology Professional Forum (ITPF) has worked with HLCIT in a number of occasions in the past and would like to propose further to work together for the utilization of IT Park. A new concept is being developed for full utilization of IT Park in various ways. In this connection ITPF has already under gone signing of Memorandum of Understanding (MOU) with Kathmandu University (KU) for working together in academic activities as well as in utilizing the park with the new concept.

Establishment of Kavre ICT Center (KICTC) has been proposed to create winning situation to all the stakeholders associated in this consortium.

Usage Categories

The proposed KICTC will be utilized in the following manner with the following categories of usages:

Commercial: Running Commercial IT Companies, High-end Training

Semi-commercial: Business Incubation, Career Camp, IT Business development services

Non-commercial: Academic research and development, Innovation promotion

Institutional Modality

The following parties/stakeholders will be involved in this concept with the following roles and modalities:

Government

HLCIT: Facility Provider for utilizing IT Park for Academic, Professional and Business purposes

Other GON Agencies: As a guardian of the concept

- National Planning Commission (NPC)
- Ministry of Industry, Commerce and Supplies (MoICS)
- Ministry of Environment, Science and Technology (MoEST)
- Ministry of Finance (MOF)

- Ministry of Information & Communications (MoIC)

Academia

KU: Academia and other related user of the facility in close association with Professionals and Industries

Professional Societies

ITPF: Professional society to bridge business, industry and academia

Private Parties (Profit Making Entities)

Other private enterprises / individuals interested to invest / participate; at least 25 ICT professionals and NRNs to meet operational expenses for initial years of operation.

Strategic Advantage of Mixed-use

Activities / Use	Advantage	Disadvantage
Commercial Running IT Companies High-end Training	Physical facility High bandwidth in competitive price KU at the proximity Driving to excel in skill Availability of residential facility	Location / Commuting time Weak local support services Low commercial value addition Not substantial strategic business advantage
Semi-commercial Business Incubation Career Camp IT BDS	Enterprise development Entrepreneurship course at KU Availability of residential facility Ideal for carrier oriented young graduates Value added HR for international market Location is not critical	Location / Commuting time Weak local support services
Non-commercial Masters Courses IT R&D Activities Innovation	Proximity to KU On-going ICT Masters / Bachelors program at KU	

promotion	Center of excellence for ICT R&D	
Mixed Use (all of the above) Proportional mix at least to sustain for five years, details to be elaborated in Business Plan)	Generation of synergy out of the activities Creating winning situations to all (Government, HLCIT, KU and IT Communities at large) Sharing of resources of KU and Other activities within the IT Park Transition to full commercial operation Most viable option of operation in least possible time Attractive proposition to bi-lateral and multilateral agencies	

BDS: Business Development Services

Mixed-use model is most attractive from strategic operational modality of IT Park for immediate startups with long term sustained operation at the same time meeting the objective. The initial

operation in the form of more non-commercial is perceived to be semi-commercial in short term and commercial in the longer term (may be after five years)

Institutional Arrangement

Kavre ICT Center (KICTC): The Initial Promoters of the center are HLCIT, KU & ITPF. KICTC will be run as a business venture in a cooperative model with additional individual ICT professionals both in the country and NRNs and other ICT companies & ventures. A Board for the cooperative will be formed to provide general guidelines. KICTC board will be chaired by GoN representative (say HLCIT) and Chief Executive Officer (CEO) of KICTC will serve as Member Secretary of the board. KICTC will be run by professional managers and companies as decided by the board.

Objectives of KICTC:

1. To receive a portion or a whole of IT Park facility from HLCIT in agreed condition with deferred lease fee for certain period
2. To co-ordinate with prospective stakeholders

3. To distribute facility for the following purposes
 - a. **Commercial:** Running Commercial IT Companies, High-end Training
 - b. **Semi-commercial:** Business Incubation, Career Camp
 - c. **Non-commercial:** Academic research and development, Innovation promotion
4. To run some portion or the whole of IT Park as a business venture with GON & other funding agencies partial support in semi-commercial and full support in non-commercial activities as stated above.
5. HLCIT, KU & ITPF as an initial promoter of KICTC, followed by at least 25 ICT Institutions, Companies and Professionals (including convention, meeting, workshop operators and resort owners of Dhulikhel) from Nepal and NRNs in

- ICT sector abroad could participate in utilizing KICTC.
6. Promoters may have special advantage to use the facility in Knowledge based activities in a wider sense.

Some of the key factors that will be adopted in operating KICTC are:

- One complete floor (consisting of two studios/wings) is to be leased by KICTC from IT Park/HLCIT for 1 year on experimental basis and may be later extended for 5 - 10 years after the evaluation of its effective use during the experimental basis.
- One wing will be dedicated for IT Business Incubation and another wing will be dedicated for IT Career Camp with the goal of exporting highly skilled professionals, High-end training center with training services export goal and possible export oriented software & services ventures.
- KICTC may sublease the facility to any other party to work only with the objectives of KICTC as stated above.
- Some of the residential blocks will also be leased for the purpose of hosting KICTC personnel (Manager, permanent mentors or trainers etc).
- Some of the residential blocks may be turned into hostels for residential trainees. The training center is supposed to conduct full time training. Hence for e.g. OCP course may be conducted in 3 weeks, full time.
- Initial establishment & operating expenses will be met by :
 - Contributions from KICTC business operation members (say 1 Lakh Rs each). If we

can assemble 25 members including KU, ITPF; we will have Rs 25 Lakh as operating expenses.

- Funds from GON or any other funding agencies for initial establishment costs and operating expenses of non-commercial activities
- Estimated cost of establishment and initial operating cost: Rs 1 Crore
- HLCIT will not have to pay anything in cash but their inputs for space rentals, computers & other infrastructure may be taken as loan to KICTC without a need to pay for the interest.

Conclusions

ITPF had submitted this concept proposal to HLCIT and presented the proposal to the full committee. HLCIT has already decided to provide a go ahead for a detailed business plan for the concept. As peace and stability in Nepal is returning after a long internal turmoil, Non Resident Nepalese (NRN) may not only like to contribute to the development of country but also reap the profit from the investment made in the IT sector.

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Development of Grant Database at CAN-USA Website

By Grant Development Task Force, CAN-USA

Executive Summary

Information and Communication Technology (ICT) impacts communities in which we live and the way individuals, business, government and civil society interact and develop. As the use and impact of ICT increases, so does the prospect that ICT can play a role in shaping the nature of community development and contributing to the building of social capital and therefore impacting the development of a Nation like Nepal. But there are still access problems, especially in emerging economies such as Nepal, mainly knowledge, availability, accessibility and affordability.

The web enabled Grants and Support Directory, which is to be developed by CAN-USA allows users to search for potential sources of funds (grants) for starting ICT Business, supporting ICT related non-profit social activity, or conducting research specifically in the field of Information Technology sector of Nepal. There are many emerging IT students as well as business houses and social entrepreneurs, who want to be innovative

and specialize in the IT field. There is a huge potential for CAN-USA to act as an

active player in the ICT sector of Nepal. The database will contain grant and support schemes from governments as well as private organizations from all around the globe. The project hopes to incorporate schemes such as financial assistance, while some other will offer free or fee-based services ranging from advice and reviews on grant source through to practical involvement with projects such as writing grant applications and applying process. In short, the end result will be a matching system that matches grant makers with potential grant recipients. This kind of availability of grant database to Nepali community will definitely promote and enhance the IT growth in Nepal.

Objective & Vision

The purpose of this concept paper is to elaborate on the features and functionalities (components) to be integrated within the grant database website that is exclusively targeted for the use of grant seekers from the

Nepali ICT community. This will help grant seekers find appropriate grants for their technology related projects quickly and easily.

The proposed system of grant database project will have 4 major components. However, in future other components can be developed and integrated as needed. For now, the 4 components are:

- 1. Building a database of technology related grants available from the international community relevant to ICT in Nepal. The grants can be reviewed and categorized based on the total dollar amount of grants, specific sector it is applicable to and other relevant factors.**
- 2. Building a database of grant seekers so that grant makers can choose where they can provide assistance.**
- 3. Providing a fee-based consulting service for searching appropriate grant/s, writing and/or grant applications.**
- 4. Positioning itself as an accrediting body. Grant recipients will have to meet certain predetermined criteria in order to be approved through this project.**

Users and Stakeholders

The overall stakeholder includes: Who will benefit:

- Grant Seekers: many projects in Nepal are unable to find funding while there are many funds available internationally that can not find appropriate projects to invest. This database will enable grant seekers to find relevant grants at one site. In addition the project will assign consultants who will guide the grant seekers through the proposal writing and funding process.
- Grant Makers in the ICT sectors from all around the world, whose grants information will be kept in the database will be able to seek out grants that meet their criteria. They will also be able to determine where the funding needs are based on the number of projects seeking grants for different sectors.
- Policy Makers: Governmental and Non-Governmental organizations can use this system to also determine where focus can be placed as far as policy matters regarding ICT grants.

**Reason for CAN-USA to initiate
the Grant Database Website**

- Facilitator and the service provider (CAN-USA), who manages the database and the website will continuously manage and update the grant database as well as provide consulting service and review and accredit grants. CAN USA will charge standard consulting and writing fee to the grant seekers which will be in the grant budget.

CAN-USA is an association affiliated to CAN (Kathmandu) which exists to impact the development of the Information and Communication Technologies (ICT) sector in Nepal. Since, CAN-USA primarily operational (as of yet) in the USA; it can act as a conduit for networking between ICT sectors in Nepal and organizations and grant givers in United States.

The CAN-USA Grant Development Task Force may be contacted

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