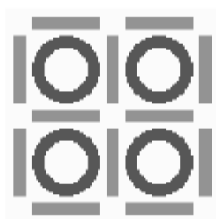


Nepal Information & Communication Technology 2003



IT Professional Forum

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Preface

It is our immense pleasure to bring this **Nepal - Information and Communication Technology - 2003** in the form of book as well as in CD ROM after presenting **ICT Policy Recommendation** for Nepal in December 2002.

This is an endeavor of IT Professional Forum and the first in the kingdom to prepare a single document which could act as a country showcase for ICT in Nepal. The publication is an initiation for preparing documentation which articulates the status and capacity of ICT in Nepal.

The work contains brief country introduction, ICT status in various areas, voices from the players in the field and selected success stories are the ingredients of the publication.

IT Professional Forum invited all institutions related to information and communication technology to supply their achievements in the respective fields through print media, website, email, personal contact etc. The content of the company profile received were compiled and put in the original form. IT Professional Forum trusts that the document will serve the basic information one looks for judging a country capacity on ICT.

IT Professional Forum extends its appreciation to all who helped to make this document complete in this form and also to The Asia Foundation for their financial support.

IT Professional Forum
Kathmandu, Nepal



NEPAL



History

Nepal has distinct and brave history, and has always been an independent, sovereign country with a glorious culture and traditions that date back to time immemorial. Before King Prithivi Narayan Shah launched the campaign of national integration, the Malla Kings, whose contribution to art and culture are indeed great and unique, ruled the Kathmandu valley.

In 1768 AD, the Shah dynasty ascended the throne of the unified Kingdom. His Majesty King Gyanendra Bir Bikram Shah Dev is the thirteen King in Shah Dynasty. The new Democratic Constitution of the Kingdom was instituted in 1990 which established multi party political system and constitutional monarchy in Nepal.

Geography

Situated in the lap of the Himalayas, Nepal is located between the latitude 26*22' to 30*27' North and longitude 80*4' East to 88*12' East, and elevation ranges from 90 to 8848 meters. The average length being 885 km east to west and the average breadth is 193 km from north to south. The country is bordering between the two most populous countries in the world, India in the East, South, and West, and China in the North.

Total Area of The Kingdom	1,47,181 Sq. Km.
Total Agricultural Holdings	(1991) 25, 98,970 Ha.



Nepal is a land locked country and home place of natural beauty with traces of artifacts. The Northern range Himalayas is covered with snow over the year, the highest peak of the world, the Mount Everest (8848 meters), stands. The middle range Mahabharat Hill is captured by gorgeous mountains, high peaks, hills, valleys and lakes. Southern range Terai is the Gangaitic plain of alluvial soil and consists of dense forest area, national parks, wildlife reserves and conservation areas. A country of small size is gifted with a wide and exotic range of tourism products-be it architectural beauty, natural landscape, climate conditions, flora and fauna and of course the high level of hospitality embracing you with the same warmth as ever irrespective of one's identity.

Climate

The temperature and rainfall variation depends upon geographical location from sub-tropical to alpine type. Nepal has four seasons, they are spring (March–May), summer (June–August), autumn (September–November) and Winter (December–February). The Terai region is the hottest part of the country where the summer temperature rises as high as 40 degree Celsius. The middle mountain range has a climate with mild and pleasant weather throughout the year. The temperature in this region ranges around 25 to 27 degree Celsius. The Kathmandu Valley, the capital city has very pleasant climate with average summer and winter temperatures of 19 to 29 and 2 to 12 degree Celsius respectively. The Himalayan region has an alpine climate with cool weather throughout the year.

People

In the geographic diversity and varied climatic conditions 23.2 million people of more than 60 caste/ethnic groups are accommodated in the country. Nepali representing different group fall either in Aryan or Mongolian family. Despite of the diversity in terms of ethnicity, languages, culture, Nepali by nature are followers of rituals, religions of their own believe. 86 percent of Nepali are Hindus, 7.8 percent are Buddhists, 3.5 percent are Muslims and 2.2 percent are Jain, Christian and others.

Nepali is the lingua franca of the country and is written in Devnagari. There are more than twenty languages spoken in the country. English is spoken and understood by the people of urban centers.

Population 2001

Total	2,32,14,681
Male	1,15,87,547
Female	1,16,27,134

Political System

The constitution has adopted parliamentary system of government based on multi party democracy and constitutional monarchy. The concept of the rule of law is enshrined within an independent judiciary system. The constitution guarantees and safeguards the basic human rights, freedoms, and equality.

There is two tier system of legislation, the upper house, called the Rastriya Sabha, consists of 60 members and the Lower House, called the Pratinidhi Sabha is the house of Representatives for which members are elected from 205 electoral



constituency distributed in 75 districts of the country. The elected Prime Minister heads the government.

Nepal is divided in 5 development regions and 75 administrative districts for administrative, judiciary, and security purpose. Districts are further divided into smaller units, called Village Development Committee (VDC) and Municipality. Currently, there are 3914 VDCs and 58 Municipalities in the country. Each VDC is composed of 9 wards, Municipality ward ranges from 9 to 35. Kathmandu is the capital city.

Nepal is the member of the United Nations and has established diplomatic relation with 113 countries of the world.

Economy

Nepal is predominantly an agriculture country. Its contribution to gross domestic product is the largest followed by tourism, finance & real estate, construction, industry, transport & communication etc. The major source of government revenue are custom duty, value added tax, income tax.

As the country estimated population growth is 2.3 per annum, the gain achieved by developmental activities has been concealed by growing population. Little over half (57%) of the population of working age reported economically active in 1991 and among them 81% were engaged in agricultural activities. Contributions of non-agricultural activities are gradually increasing in the GDP. Per capita GDP is estimated in the order of US \$ 240 for 2000/01.

Tourism industry has an important position in the Nepali economy because of its competitive advantage. It has contributed towards employment, revenue generation, earning foreign currency and improvement in balance of payments. The policy of economic liberalization has been highly instrumental in improving Nepal's trade performance. Nepal major export commodities are paste, Pulses, oil Cake, Catechu, Jute good Sacking, Twins, Carpets (Hand knitted woolen), Readymade garments, handicrafts, ginger, ICT products & services.

Industrial development is slow as such the government has formulated various policy and Acts for its further development.



Tourism

Nepal is famous in the world for natural beauty, geographical diversity, cultural and artistic heritage. The Mt. Everest world renowned peak, one horn Rhino a rare animal, the birth place of Lord Buddha, famous shrines and temples, numerous rivers and lakes, rare birds and flowers are attraction of tourists.

Tourism has important position in Nepalese economy. It contributes towards employment, income generation and foreign currency earning.

The national flag carrier of Nepal and of respective nations has built direct air links with more than 15 countries of Asia and Europe— Austria, Bangladesh, Bhutan, China, Germany, Hongkong, India, Japan, Malaysia, Pakistan, Qatar, Russian Federation, Singapore, Thailand, The Netherlands, United Arab Emirates, etc.

The Tribhuvan International Airport is 5 km away from the downtown Kathmandu. It provides all the facilities, amenities and securities to the passengers, cargo, airlines, and aircraft like any other international airport. The government and private partnership are offering different kinds of promotional programs, services, facilities and withdrawn fees and formalities.

Tenth Plan (2059-2064)

It is indispensable to employ advanced technology if Nepal is to forge ahead in different sectors. Acknowledging science and technology as an integral part of development, Ministry for Science and technology has been set up by His majesty's Government. The objectives of the tenth five year plan are to mobilize physical and human resources, to improve & to activate research agencies, to encourage qualitative researches, to develop information technology sector, to encourage private sectors to involve in conducting researches, to develop bio-technology, to create conducive environment for foreign investment, to disseminate information on scientific discovery, to produce highly skilled manpower and to enhance local technology.

Information technology undoubtedly plays a vital role in socio-economic development of the country. Nepal can benefit a lot from information technology. However, it is necessary to establish industries related to information technology if Nepal is to benefit from information technology products. Similarly, by incorporating computer education in school curriculum and by providing Internet service, society based on knowledge can be created.

Information Technology sector in Nepal is relatively behind than other developed countries. Though more than hundred thousand computers are being used nationwide, government agencies are yet to use them properly. Though computers are being used by government and non-government agencies, it is yet to be well organized.

Policy and Working policy of 10th five year Plan

- Emphasis will be given to education and trainings related with Information Technology.
- National information center running under the Science and Technology ministry will be strengthened in order to implement, supervise and monitor policies related with Information Technology and to legalize e-commerce.
- Information technology parks will be established in various parts of the country.
- Conducive environment will be created to attract domestic and international investment in industries related with development, to encourage production and utilization of soft ware and services such as data entry, digitization, medical transcription, call center, web content design etc.
- International training will be encouraged to produce high and medium level manpower and to produce highly skilled manpower to compete in the international front.
- Developing and promoting Information Technology to relay information on agriculture, education, health and other economic sectors to rural areas will be emphasized. The attempt will be made to provide Internet services to 1500 VDCs across the country.
- Website containing information on agriculture, education and health will be launched.
- Initiatives will be taken to incorporate computer education in the school curriculum.
- Private sectors will be encouraged to campaign on nature, religion, culture and heritage through Internet service.
- The participation of private sectors in Information Technology arena will be encouraged.
- Information Technology will be used to make government activities transparent, to strengthen system that provides service and to reform financial management and administration. In this regard, e-governance will be properly handled.
- Conducive environment will be created to increase the use of services related to Information Technology. To legalize the use of Information Technology necessary laws will be formulated.
- Private sectors will be encouraged to produce medium level manpower necessary for Information Technology front. Private sectors will be provided assistance to set up academic, research and development institutes.
- Emphasis will be given to computer education from school level. Internet facilities will be provided in universities and public schools to provide better quality computer education.
- Scholarships will be provided to bright but needy students from rural areas for higher-level education on information technology.
- Information technology will be used for the purpose of electricity business, electronic education and distance health. Academic institutions and hospitals situated where there is facility of tele-communication and electricity will be encouraged to use the service of information technology. And where there is no electricity facility, promotion of Information Technology will be done through solar energy.

Information Communication Technology

Nepal has adopted IT Policy in 2000. In the same year the country has prepared “Electronic Transaction & Digital Signature Act” (draft) and is waiting approval from the parliament. Similarly HMG has amended Telecommunication Policy and incorporated that Voice over Internet Protocol service will be licensed to the private service providers, thereby curtailing the monopoly of Nepal Telecommunication Corporation. The commercial banks have further extended the facilities and services for electronic commerce after the adoption of open market policy and liberalization of financial sector.

Increasing use of computer, development of qualitative telecommunication network, proliferation of internet and e-mail services by private sector and growing attraction towards net based business including e-commerce and multi-media have good indication that Nepal is a growing center for developing of information communication technology. Furthermore the establishment of IT Park and expansion of information network at the village level is considered in contributing to multi-dimensional growth of agriculture, health, education, industry, tourism etc thereby uplifting the economic situation of the country.

Nepal is organizing international level information technology conference and exhibition known as “CAN INFOTECH” every year and is celebrating as a national festival of information dissemination; exhibition of newer technology, software, peripherals, books, journals; exchange of new development, ideas and sharing of experiences. The event is participated by different private, public sector of Nepal and also from other countries. This event is conducted by Computer Association of Nepal once a year in the Kathmandu and also in the other regions. Regional associations and member of CAN is also taking this exhibition in different towns such as Biratnagar, Pokhara and Butwal.

IT Policy and its impact

With the Vision like "To place Nepal on the global map of information technology within the next five years", Nepal despite of constraints of resources, is marching ahead in its direction.

Objectives of IT Policy

- To make information technology accessible to the general public and increase employment through this means,
- To build a knowledge-based society, and
- To establish knowledge-based industries.

For development and promotion of Information Technology, financial assistance has been provided to four universities of the country by HMG. With an aim to disseminate knowledge on information technology in schools, Internet service has been made available to them. Likewise, government initiated computer trainings are being conducted with a view to produce skilled manpower.

The construction of Information Technology Park in Banepa has begun. In organization front, Nepal Information Technology Centre was setup but its structure, human resource, programs and activities are still in background.

Private participation in the field of operation of Internet Services, Cyber cafes, training institutions, hardware & related equipment assembly, software development, web design and export of IT services and IT enabled services have increased. The services have covered all development regions and major commercial and tourist cities.

The active role played by Computer Association of Nepal, IT Professional Forum, ISP Association of Nepal, and other Business Associations have driven the country towards the use of ICT in economic development thereby alleviating the poverty.

The country is facing many problems and challenges, such as lack of co-ordination between the related agencies, constraint of budget, no opportunity for available manpower, no proper co-ordination between related agencies to construct physical infrastructures, government inability to use computers in ministries & offices, capacity (network, infrastructure) constraints, etc.

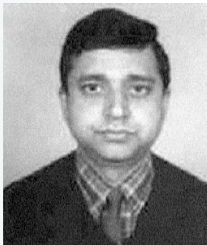
Voices from Players

Q.1 The government has failed to implement the wish laid down in the IT Policy. Is it due to non-cooperative attitude of the line ministries or is it because of the lack of the commitment of the government?



Dr. Shankar Sharma
Vice-chairman,
National Planning Commission

Dr. Sharma - The government is committed to promote IT. Certain provisions laid down in ICT policy have already been implemented specially in terms of institutionalization and manpower development. Ministry of Science and Technology is responsible for coordinating IT activities in the country. Accordingly, there are no non-cooperative attitudes among ministries in this regard.



Suresh K. Regmi
President
IT Professional Forum (ITPF)

Regmi - It will be untimely right now to say that the wish laid down in the IT policy 2000 has failed. However, the symptoms do not indicate a very positive trend. Every policy must be converted into yearly plans and such plans must be effectively executed. I see a clear lacking in this regard. The organization structure as envisaged in the policy has not yet been effective. Infrastructure development has not been the key priority. Budgets lack continuity. One year you allocate some budget for IT Park and next year there is no ample budget for it. One year you allocate some amount in training and in the subsequent years, you do not have the budget for it. Developing new projects for computerization of HMG offices, public organizations and creating jobs for local IT industry have been completely ignored. On the contrary, because of the absence of clear directives, public tenders are directed towards non-Nepali software products even in cases where Nepali companies have been proving their capability. None of the incentives as envisaged in the policy document is in effect in a transparent manner. Overall political instability and insecurity in the country are some of the major factors. However, we have made a good advance in HRD sector.



Muni B. Sakya
President
Internet Services Provider Association of Nepal (ISPAN).

Shakya - IT policy is vital for the implementation of IT planning. It is the road map. Perhaps the ministers and government officials concerned are not as serious or committed as they are supposed to be. Besides, the rewards are not prominently foreseeable for the people concerned.

Lochan Lal Amatya
President,
Computer Association of Nepal(CAN)



Amatya - We would like to call it "delayed in implementation" rather than "failed". Any IT policy may be useless if not implemented with the required speed. But some of the provision are already implemented and have been effective. Almost all of the line ministries have shown keen interest to co-ordinate and support the implementations but due to various reasons it could not happen. Those reasons are mainly related to budget constraint, specific manpower constraint in the ministries and current political situation.

Binod K. Chaudhary
President,
Confederation of Nepalese Industries (CNI)



Chaudhary - You are right on both counts. There is a lack of commitment on the part of the government in introducing IT in a wide way in Nepal. The IT policy has not been given due priority. The government authorities and the common people must be educated on the advantages of IT to the development of the economy. I feel it seems to be a combination of attitude, knowledge as well as a lack of commitment on the part of the government. There seems to be very little understanding on the true potential of the IT industry not only for business and communication but also for good and transparent governance.

Rajendra Khetan
President
Khetan Group of Industries



Khetan - It is the lack of commitment from the government side. It has been new business for the Government. They still don't trust private sector. The government has never kept 'IT' in its priority list. They simply take it as an office toy. It reduces cost and can help improve productivity. That is why it should be given due importance.

Sanjib Rajbhandari
President
Mercantile Group Pvt.Ltd



Rajbhandari - While it is true that this was a result of a lack of total commitment from the line ministers (ssssMinister for Science and Technology) and the government, frequent changes in the governments also contributed to it. There have been several MOST ministers and governments since the announcement of the IT policy in 2000.

Because of the frequent changes in government, the prime minister, who was supposed to chair the IT council probably never got adequate time to initiate the council given that there were always more pressing matters to attend to. The same holds true for the MOST ministers, except that the MOST ministers obviously had more time in their hands.

It has been over two years since the IT policy was announced and it is a sad commentary on our government (and by extension, our society) that this policy which had taken over one year and the effort of at least 50 people to draft has not been implemented.



At present Cyber Law is in the draft version. Conducting electronic commerce is impossible in its absence. When do you expect it to come out and be enforced ?

Dr. Sharma - Yes, without this law, e-commerce really does not take off. Still there are some preparations to be completed by the private sector and related stakeholders. Digitization and computerization of domestic activities, website development, e-commerce strategy and planning are some of the infrastructure to be taken care of. Preparations for electronic transactions have been completed. As you know, the parliament is not there. So the government is considering if it can be brought through an Ordinance.

Regmi - It's a very important first step towards e-commerce. Many other rules, regulations follow it. ITPF has recently completed a study, suggesting the necessity for some new acts, rules, regulations and modifications to some existing ones. The IT Bill (Cyber Law) has already been in hold for two years, it must be enforced with an Ordinance as soon as possible instead of waiting for the normal system to be restored. As can be seen from the trends in the developments in the political field, it is going to take every long for the normal system to be restored.

Shakya - E-Commerce is virtually impossible without stipulation of the cyber law. It is like driving a car without a driving license. The legislation of this law is taking much longer than expected. One can only hope that it will come before too long.

Amatya - It all depends upon government's initiative. The draft law is ready since long back. But it has to be reviewed now before submitting for final approval because of the changes in technology and concept in electronic transaction that have happened in the meantime.

Chaudhary - There has to be a cyber law in this country and I cannot see any reason why this has not been approved and enforced. There is significant trade and commerce being conducted even now through the cyber way, and the delay by the government is only putting the business people at risk. People cannot wait and be bypassed in global trade and hence are risking losses in the event of default in payments on business transacted through the net, specially credit card payments. It is because of this that implementation of electronic commerce has not improved and we are falling behind. The promulgation and implementation of a good, all encompassing cyber law is of utmost importance and priority. Proper understanding of the value and the benefits of such a policy needs to be studied by the people concerned at the government level. The law and the corresponding regulations should be passed and implemented without further delay.

Khetan - Cyber law has been under discussion for many years. Earlier when the parliament was there, IT did not receive the priority and now there's no house to pass such a law. Issuing ordinance in the prioritized laws is one way. Lot of stakeholders have given their suggestions about it, now they need to be incorporated into the draft law.

Rajbhandary - Without a sitting parliament and with a government which is preoccupied with more crucial and urgent matters, I do not expect the cyber law to come into existence soon. And even if it did, without a stable government which is committed to its enforcement, it is not possible to effectively enforce such a law.



What are the government's plans to extend as facilities/incentives to attract national and international investment in the IT Industry?

Dr. Sharma - As the preparations for the new budget are going on, there have been discussions and meetings at the ministry concerned and also at the central level. As Nepal is also becoming a WTO member, we are definitely lowering the customs on IT. Besides, an incentive package for national and international investment in IT Park is being considered. The government is the facilitator, the private sector should take the lead role. And the government is receptive to private sector demands. IT policy 2057 clearly states about the facilities and incentives intended to attract national and international investment in this field.

Regmi - We are too much conservative in this respect. We try to squeeze the goose with the golden egg instead of creating an environment of letting it to lay the eggs. IT Policy 2000 is itself not a very forward looking document in this respect. However the current scenario is such that HMG has not provided even those facilities that are specified in the policy document. I would rather declare 10 years Tax Holiday for IT companies and let large foreign companies come to Nepal if this will be the case there will also be more domestic investment coming to this industry. We earn more tax when individual income tax is collected from the employees/promoters of these companies as ICT industry pays good salaries to its employees. Ample jobs need to be created in Nepal to absorb the future production of ICT professionals which is expected to be more than 5000 per year.

Shakya - Seminars on FDI like that was held in Hotel Yak & Yeti in April 2003 are encouraging starts. Similar programs were also conducted by FNCCI in the past, but follow up is lacking to give continuity to the initiations taken. Besides that communicating with the right organization and right people at right time is something that is lacking in the government. There are many countries in the world attracting investment from foreign companies with their incentives and pool of facilities.

Amatya - These all are stipulated in IT policy. We are expecting revision of facilities and incentives provided for in that policy.

Chaudhary - The government should focus on building specialized IT parks , should focus on IT training even if it means providing facilities to schools and colleges. The government should make it mandatory at the school level for students to take up computer knowledge as this would improve their skills and marketability in the modern world, both here and abroad. The government should use its influence and push for software exports and make Nepal a centre for software development became with a little bit of effort, we can make Nepal a cheap source of computer software specialists. The government should also help promote the idea of the

availability of skilled but inexpensive manpower in Nepal and aim for get to contracts for back office support bases to be established here. There is a significant telephone network existing, and with the installation of the optical cables, data transmission would be easy and efficient. This would also give additional revenue to the NTC as they could support with special tariff for data transmission purposes. Creating an appropriate infrastructure will pass on the cost advantages to the investors. This coupled with efficient service will help market Nepal's IT capabilities.

Khetan - As I understand, the Government wants to put Nepal in the global IT map within few years. But it is not interested in giving any financial concessions, though it is willing to levy minimum tariff on imports and to exempt tax on exports..It is also developing an IT park at Banepa. But what I feel is that all these are not enough. The government should make its IT policy popular and attract some investment.

Q.4 The 10 th five year plan does not draw a clear road map for IT development in Nepal. Then, what in your opinion does the government want to accomplish by opening IT Parks?

Dr. Sharma - No, the 10 th plan does have a clear road map. As I mentioned earlier, private sector is the lead developer in IT. We have clearly stated that the government will play the role of the promoter and facilitator for the growth and expansion of IT business. To develop the knowledge based society, to remove the barriers in ICT reach and to help reduce the poverty, the government is going to establish 1500 rural Community Information Centres during the 10 th five-year plan, which is clearly stated in the document. This program will reach the hitherto 'unreached' sections of the populace. To expand the domestic market as well as to have good governance, the electronic governance program has been launched. It will establish Intranet between government offices, set up websites of all government offices with informative and service delivery contents, and develop some applications, for the ministries and departments. There also are some other issues that we have dealt about in the 10 th plan on e-learning and infrastructure development.

Regmi - I think the 10th plan was drawn up in haste without making proper consultation at all levels. However, I will be more satisfied if we can be effective in converting into action whatever we have. There has not been enough investment by the government in IT sector. Time has come to increase the government spending in IT sector by arranging the funds from whichever source possible-domestic sources, bilateral co-operation or international loans.

Shakya - The major shortcoming of our government is that instead of investing in infrastructure building it is pouring energy and expenses into wrong priorities.

Amatya - I think, the Government should successfully run IT Park in Banepa. Banepa IT Park should be a case example. We have not received any information on operating plan of Banepa IT Park Yet.

Chaudhary - IT parks have been a success in many countries which have established them; eg. Singapore, Bangalore or China. The success and the returns in the long term are immense. The overall strategy needs to be re-worked with professionals working on drawing up a long term clear plan of action. Giving special facilities to such labour intensive industries will help Nepal and we do have and can have the human resources required. If we do not have we can arrange with a little bit of effort. These parks just facilitate the software people to work in a cost-friendly and hassle free environment. The outcome will be that the export income from IT will be immense. Besides this, the trained graduates from here can be productively employed.

Khetan - Govt's priority is to reduce poverty and any way match revenue and expenses. In the 10th plan, there is no fully defined road map for IT development, it just talks about some macro level policies. Ministry of Science & Technology and National Information Technology Centre are the executing authorities. There are two committees and one is led by the Prime Minister himself. But yet the work is still to start. To educate people at all levels, the government plans to go to even VDC so that accessibility increases among people.



Would you please elaborate on your idea about how can IT enhance quality education?

Dr. Sharma - IT is not only an isolated domain in itself. It is the tool for development of transparency, efficiency and service quality. Therefore, IT can be the medium of quality education. It can solve, at least to a certain extent, the problem of the unavailability of adequate number of professional teachers. Distance learning and e-learning are the best examples of innovations brought about by IT for quality education. It is IT itself that could strengthen the concept of life long learning.

Regmi - Computers today are utilized in every sector as a good information management tool, an obedient servant, a precision calculating tool, and a good teaching tool. It can simulate any topic with good examples if programmed to do so. It will also be able to test the learner's skill at proper intervals. CAT(Computer Aided Teaching) / CAL(Computer Aided Learning) software can be programmed adopting good teaching methodologies and with a proper depth of the subject in an accurate manner.

Shakya - There are number of ways IT can enhance quality education. It has already proved that due to the IT, geographical barriers and time are not significant. The world has become a global village. Distant education is the major advantage today that is made possible by IT.

Amatya - Quality education comes not only from quality faculty and institution but also from access to knowledge base, access to global information, revision of courses, sharing of ideas, virtual timing of learning, exam at your convenience, updates on recent technologies etc. These all can not be achieved without using IT. IT will be enabler to provide such initiatives.

Chaudhary - Any education in the modern world has to be able to develop the child with the skills required to cope with the demands of the modern world. IT education helps the child to develop special skills, skills which are necessary if they are to succeed in the future. It is interesting to note that all fields of study, education and even work these days require that the person is familiar with computers and then uses. Education which cannot prepare the child for the present or the future is of no use as book knowledge alone isn't sufficient for growth ; it's the application ability of this knowledge that helps the child. This is where IT education has the greatest impact. The world of today has changed from that of a few years ago, and in the future it is going to change even faster. The area of with the most said change has been the field of communications and IT. I can see that within a few years, more and more education, even class room education, will be dependent on IT services. Almost all service industries and government agencies will be relying on IT and individual communication and business will depend on IT. Those who do not have the skills will be left behind in the rat race.

Khetan - IT is getting popular as it makes latest information available at a low cost. It brings uniform and latest education with standard and quality.

Rajbhandary - Some of the steps like Standardization, Train the trainer programs, Monitoring, Frequent interaction with Stakeholders, etc can be taken to improve the quality of education being imparted in the country.



Have you felt the necessity for a standardized Proficiency Test in IT sector in Nepal?

Dr. Sharma - I feel that it will help. Whether it is really needed or not is a question that has to be answered by private entrepreneurs. But when the government has adopted liberal policy based on the principles of open market economic forces, it is the market that should determine the quality. In my opinion, even if the testing is to be done, it should be left voluntary. If it is good, the market forces will keep it running. In fact, certification process has already started in Nepal by some of the world's best companies

Regmi - Yes. In Nepal there are four universities and nearly 50 colleges imparting ICT education. In about two years, about 5000 ICT graduates are going to be produced annually from Nepal itself. Besides that a lot of students are going abroad to get ICT education. There also are many training institutes in Nepal, which add to the pool of ICT professionals. It is difficult to prove the talent of an ICT professional to a prospective employer just from the marksheets/certificates because different institutions have different courses and different examination procedures. Interviewing is not going to be effective when there are large numbers of applicants because the interviewer can't devote much time on any one individual. Hence ITPF has clearly felt this necessity and would like to work in this area.

Shakya - Yes

Amatya - Yes, it has been urgently necessary. The professionals on IT may have very vast depth in their expertise besides their academic degree and professional training. One may have taken full course on network administration and software engineering, but to know his expertise on both areas will be very difficult unless you work with him for some time or take detailed interview. But if he has gone through such interviews through online proficiency test, it would be much easier to identify his capabilities. Although Nepal has such test centers affiliated with global institutions like CISCO, ORACLE, MICROSOFT etc we need proficiency test in other area of expertise like data entry, GIS operator, programmer in different languages, System Analyst, Quality Analyst etc.

Chaudhary - Standard proficiency tests are required to ensure a common level of proficiency in education and skills. The present supply of skills is far short of the requirements, specially in terms of quality. There is a plethora of institutes imparting training and giving away certificates and not providing the required levels of skill training. This has resulted in many firms being wary of recruiting IT trained people as the work delivery is far below expectations. A STPT would go a long way to assuage those concerns and make sailing the institutions more cautious and more diligent. I do believe that an independent body, maybe the Computer Association of Nepal, should take the onus of certifying students who are trained and have the proficiency. The same institution can also interact with bodies like the CNI, FNCCI and other trade and industry associations and personnel to identify what sort of skills they are looking for, so that manpower can be trained accordingly and competency levels can be established accordingly.

Rajbhandary - Yes.



The tenth plan targets to make Information Technology accessible to citizens through Community Information Centers. As per the information you have, what incentives is the Government thinking to offer to the service providers as well as village community centres for this purpose?

Dr. Sharma - The aim of the proposed centers is to be self-sustainable by providing useful information and service to rural populace. Our challenges are to provide the useful contents and demonstrate suitable and affordable technology. The centers will be established on the demand of village community; there is no fiscal incentive. The social mobilizers will explain the objectives and benefits of such centers. The service providers will be there where the demand is. The Nepal Telecommunication Authority has listed the benefits for telecom providers of being present in remote area. This program does not provide any additional benefit to service providers.

Regmi - I don't know. It is the duty of the government to make the access to information to its citizen free and effective. Hence, there is a clear need for investment from the government in this area. However, the information to be provided can be classified in two or more types. One such type would be the information that must be available for all. Such information should be provided

free. Investments has to be made from the taxpayer's money for creating the necessary infrastructure for this purpose and also to meet the expenditure needed for the operation of such infrastructure. Second type would be the information with individual commercial value. For such information, the individual would be charged an appropriate commercial price. If HMG wants the service providers to make the investment in the area where there is commercial potential, the revenue has to be shared accordingly. Shakya - The budget for IT is increasing and that is positive of the government. Right distribution to the right service providers and Community Centers and right people are the major requirements now. Its lack has been hindering the dissemination of the right education to the targeted people.

Amatya - In initial phase, as a pilot project, community Info centre will be established in a very few places. The government is taking them as model centres to the demonstrate to private sector and local community how the centres can be self sustainable and profit earning since the government cannot establish 4000 such centres so that there will be one centre in each village of Nepal, the government will only be the facilitator to the private sector. Regarding incentives by government, it is still early to say. Let's see the implementation of pilot sites. But it is suggested to focus on reducing, the communication service cost, equipment cost (Duties, VAT, Tax etc), and license fees.

Chaudhary - I am not very clear as to the method of how the government hopes to achieve this objective. Taking the ISPs to the remote areas to provide service through the community centers is going to be a costly proposition. The government can make arrangements through the NTC to have connectivity wherever it has a community phone service, even if for a limited time. Maybe NTC should encourage people to use the service at little or no cost. This can go for a limited period of time before some charges are collected. But then NTC should also engage schools and the local village/district bodies to impart education on the usefulness of IT at the same time. They could even use it to teach in class rooms by using big screens. Once people see the uses then they will be encouraged to use the service. The second step in this direction could be to provide equipment at subsidized costs and the connections.free of charge, specially to village schools. The government could also take the help of the ISPs and give them incentives if they expand their services to the areas away from the main cities.



What should be the respective roles of the Government and private sector in building IT infrastructure in the country?

Dr. Sharma - The question of infrastructure has to be handled jointly under public private partnership model. The existing infrastructure is inadequate even for a small business community. To expand the access, again the infrastructure has been a hindrance. The communication policy, which is going to open telecom business for the private sector, will greatly help the infrastructure development for IT.

Regmi - Government should lead but it should keep the way open for the private sector to make investments.

Shakya - Private sector can play a key role in order to complete building IT infrastructure within time while the government can act as facilitator.

Amatya – The role of Government can be enumerated as (1) Facilitator, (2) Implement attractive investment policies, (3) Ensure fair competition, (4) Cost reduction on import of equipment, (5) Sharing of national resources, (6) Incentives for remote services (no cross subsidy, but incentives on duty, tax), (7) One policy, one implementation plan of government on ICT, not separate in separate ministries, and (8) International Marketing.

Similarly the role of Private Sector can be explained as (1) Increase quality (quality manpower, quality service, quality products), (2) Fair competition (No cartelling), (3) Consortium effort to increase strength of manpower, technical experience, complete solution provider, and (4) Commitment to Government on service, revenue transparency, contribution on poverty alleviation.

Chaudhary - The primary role of the government in all business including IT services is to provide the necessary infrastructure. This should include things like easy, inexpensive data transmission facilities. The government should encourage and give incentive to institutions providing IT education and should help those who want to establish such centers. The private sector should focus on the service delivery of specialized skills and the provision of IT services.

Khetan - It is a growing business in Nepal though enough has not been done for its development. Government should make it a free market business and hence policy and law should be accordingly defined. We, the private sector, will do the rest. We can do good in software, but since we don't have hardware technology hence we may not do better in this field. We will invest to develop skill and technology.

Rajbhandary - While the government should formulate visionary yet practical and workable policies and closely monitor and implement them, the private sector should champion the development of this sector. I would say that most of the onus of developing the IT sector lies with the private sector and on this count the private sector has failed in more ways than one.



At the present level of facilities, cost and infrastructure, is it possible to expand the service of ISPs to the village level? If not, what are the minimum requirements in your view?

Dr. Sharma- Currently, more than 1500 villagers are connected with telephone. Yes, the use of some of the telecom connections is not IT friendly. Private ISPs will go when there is a market and profit. Therefore, we have to consider alternative approach for village level Internet connection. One of the concepts laid down in the policy is to provide the local call charges in nearest node ISP for Internet, which is seriously being considered for implementation. The wireless is another medium, which is under consideration by the "ICT for development" project under Ministry of Science and Technology.

Regmi - Minimum requirement is a data communication infrastructure. It can be done by laying down Microwave links, Cable Links, V-SAT links, Satellite phone links etc. V-SAT or Satellite phone link are a present realities as they are already there. But it involves a very high cost for communication. ISPs, mostly private sector companies, will invest in villages if they see a proper product which they can take to villages with good commercial prospects. First step towards it from the side of the government is to make data communicable lines available to all villages of the country as envisaged in the communication plan.

Shakya - ISPs should be subsidized to expand the services to villages. Revenue sharing, reduced telecom tariff and attractive facilities to the ISPs are essential to encourage them to provide their services to the villages.

Amatya - Expansion of ISP service to any part of the country is possible. But cost of equipment to be used in those parts and cost of internet access versus affordability for the people living in those parts defies the possibilities.

Chaudhary - No I don't think ISPs can actually expand to the village level because of various reasons. Firstly, there is a lack of awareness on the use of IT services. Secondly, there isn't a real requirement of IT services as yet for commercial purposes in the villages. At present, there are about 20 companies registered as ISP in our country. Out of 20, only 5 or 6 companies are running well in Kathmandu valley and gradually they are expanding to different parts of the country like Biratnagar, Narayanghat, Pokhara etc. In my view, the minimum requirement is to provide IT training on a regular basis for creating computer awareness among villagers so that the people will come to know about computers and the utility. Once the people come to know about its benefits, they will try to interact and do business using the e-mail and internet and this will be the time when they will look for ISPs for availing this type of services. Then the ISPs can move in with a commercially viable service.

Khetan - I don't think, as the private sector we should ask for any financial facility. We can expand ISP at grass root level. We just need the government to provide infrastructure and telelink at local price.

Rajbhandary - For a greater penetration of the Internet to rural areas the following can be done:

- A. The government should waive off all levies and taxes that ISPs would normally have to pay the government in urban areas. VSAT license fee, royalty fee, rural telephony tax, ISP license fee to name a few.
- B. The government should make the existing rural telephony fund available to ISP also. The government has established this fund and all ISPs/Telecom companies/VSAT operators have been contributing 2 % of their gross revenue to it.
- C. The ISPs should partner with various agencies (like educations institutes, health organizations, government bodies, etc.) such that when making the Internet accessible to the rural areas, they also provides value added services like, distance education, telemedicine, e-governance, news delivery, etc. This will not only add value to basic Internet access, it will also provide additional stream of revenue for ISPs.

D. More companies should be allowed to provide basic telephony services in rural (and for that matter even in urban areas). The cost of providing internet access to places which already have basic telephony services is much lower than places which do not have any telephony services. Relying on only NTC to provide basic services to the entire nation is like relying solely on Nepal Bank Ltd. to provide banking services to the entire nation.

Q.10 **The costs of hardware, software, Internet service, and telecommunication are excessively high in Nepal when seen against the level of income of the average Nepali. What plan do you suggest to reduce the cost in these components? Do you think the FDI or bi-lateral or multi-lateral cooperation will help? How?**

Dr. Sharma - The cost in Nepal in absolute terms is cheap if not the cheapest. But in comparison to the level of income, it is outside the reach of general public. The expansion of the IT market in the country and the forthcoming competitiveness in telecom will certainly reduce the cost. As mentioned before, the government is considering to lower customs duty on IT products, which will reduce the cost of the hardware. The investment in infrastructure and expansion of services will definitely reduce the cost.

Regmi - One way to reduce the cost of H/W is choosing a software platform that is less demanding in H/W resources. Most common people are not making proper utilization of the present capacity in computers. They are doing some simple work such as word processing and sending email. Going for open software solutions provides the option of no cost towards software and a very low capacity requirement in the hardware. If this is the case, we can utilize many hardware units that we have stashed away thinking that they have become obsolete because they were not able to cope with resource requirements with new software. Our cyber cafes provide the best example of how to reduce the cost of internet access. In order to make our communication cost even lower, we need more than one operator for fixed line and mobile phones. It's the lack of competition in this area that has led to increase in the cost. Telephone distribution companies need to be separated from national trunk line providers ensuring a level playing field for the private companies to come into fixed and mobile telephone services.

Shakya - The cost of hardware/software is diminishing day by day although it is still prohibitive for average Nepalis. There is very little that one can do about it. But the telecommunication cost, which is excessively high at present due to artificial reasons, can be reduced drastically so that the recurring cost of operation is not prohibitive to the common man. Bilateral or multilateral assistance or FDI can definitely put some dent on it by envisaging some special subsidiary features to minimize the cost.

Amatya - Infrastructure cost and access cost has to be reduced. International link to internet backbone should be huge and in wholesale price. NTA should take a lead to merge all investment on Internet backbone - national and international.

Chaudhary - The NTC and the IT related ministries will have to play a major role in this regard. The expenses in developing the infrastructure should be looked upon as an investment for the future growth of the country. Bi-lateral or multilateral support can be sought to set up the infrastructure and to take IT education to all parts of the country. Knowledge should also be made clear that while these are services which can be remunerative and are saleable all over the world, people should expect the government to provide free recruitment. Skilled people will have to compete nationally as well as internationally.

Khetan - In Nepal sophisticated technology is not required. We need foreign investment but not grants in trade field. In developing infrastructure, definitely yes, we need financial cooperation. To reduce costs or to make it available to the average people, the telelink should be made available at local price. The cost of delivering IT services should go down to have this available at grass root level. Hence the government should not impose other revenue and administrative hassles.

Rajbhandary - No. FDI or Bi-lateral/Multi-lateral assistance will not help reduce the cost of the access to telecom/Internet services. Foreign investment may help build additional infrastructure and new services but this may not necessarily lead to reduced costs as the cost of internet access in Nepal is already one of the lowest in the world. A substantial portion of the cost of setting up and running an ISP is in infrastructure set and international bandwidth charge which has to be imported from overseas and paid for in foreign exchange.

Q.11 What way do you suggest to increase the usage of Internet services in Nepal?

Dr. Sharma - There are various ways to increase the number of Internet users. The telecom charges for Internet usage in general have to come down. The educational institutions – schools and colleges – should have the Internet facility for students by paying a special educational rate. The government's rural IT centers and e-governance programs will also help to increase the Internet use.

Regmi - Increasing the computer literacy, developing local internet application and contents and lowering the cost of equipment and communication are the key to increase the usage.

Shakya - Telecom charges applicable to the ordinary telephone user is the same as that applicable to the heavy users of Internet or related services. It is totally unscientific. ISPs are providing the cheapest internet/email services to the users but that is not going to increase the users since the major recurring cost to the internet users is prohibitive telecom tariff. It is a proven fact that the users will be able to browse the internet more only when the telephone charge is reduced. Besides, NTC is not going to lose its revenue due to reduced tariffs. In the long run, it will rather increase its revenue by many folds as has been proven in the developed countries.

Amatya - Interconnection of all ISPs for local routing necessary local Webservers and local contents, easy and affordable access to internet, combined services on ISP and Telephony.

Chaudhary - The high cost of telephone is a major hurdle in increasing the use of the internet. Secondly, the cost of computer equipment is another major problem. Thirdly, the lack of the power and the use of the net is not known to many. Colleges and schools should be encouraged to use the net for research papers and tools and the people should be made to understand that the net isn't only a place for fun and entertainment but also for information and marketing. These two uses of the net have been very widely exploited in other countries.

Khetan - Smooth service available at competitive price is the key. Also education would help.

Rajbhandary - Lower cost and better quality of service will certainly increase the use of the Internet in Nepal. However it is important to note that what is worrying is the low penetration of the Internet access in rural Nepal. The emphasis should be in making the Internet accessible to more people in rural area the quality aspect of services (and the associated cost) in rural areas can be dealt with later on, once basic access is available.

Q.12 To what extent can Optical Fiber be better suited for increasing the network capacity of the country instead of increasing the capacity of NTC only?

Dr. Sharma - NTC is the national institution of the country, empowered by the government to execute the connectivity programs. Currently NTC is entrusted to look after the optical fiber. This is the national network. Nepal Telecommunication Authority may decide on how to use the network for optimal national benefit.

Regmi - Definitely, it will increase the capacity tremendously. However, necessary thinking needs to be concentrated on utilising it not merely for voice communication but more towards data communication. The present project of laying down East-West fibre optic cable must be under a new institution. The cost of data transmission through fibre-optic cables is very low as compared to using Satellites. ISPs should be able to use it to connect to the international cyberspace at a cheaper cost. Then they will be able to provide it at an even cheaper rate to the internet consumers.

Shakya - The broadband provided by optical fiber is surely going to add to an overall capacity of network communication and since Rs.84 crores is coming from India as an assistance, this must be utilized for the benefit of all the people and private sector ISPs. ISPs have so far served the people with great dedication with their own 100% investment with bare minimum cost to the people in general. ISPs in Nepal are rendering the cheapest Email/Internet services in the world and in this process they are suffering great loss.

Amatya - Sharing of infrastructure.

Chaudhary - You may also be aware that gradually most of the advanced countries are using fibre optic cable for spreading internet bandwidth. This helps in speeding data transmission and also has increased capacity to handle large traffic volumes efficiently. It is always better to make use of advanced technology right at the outset so that our services do not become redundant quickly. These days a lot of software used cannot be supported by normal transmission methods and this means long download times and wastage of resources. Fibre optic cable will help to make the IT service and the phone service more efficient. I think it is important to understand that increased capacity of NTC should be managed to increase accessibility to parts of the country and also to improve efficiency.

Rajbhandary - The nationwide optical fiber network will certainly increase the capacity of the telecom/data network, NTC included. The logic behind giving the Optical fiber network, which is provided under a grant from the Government of India, to NTC, an organization which the government has committed to privatize, is debatable.

Q.13 **Though the Ninth five year plan stressed on using computers in government offices, there has not been any significant progress achieved. What should be done now based on that experience?**

Dr. Sharma - There has been some progress on the use of computers in government and government related institutions. But it has not been to our requirement and planning. Now the NITC has initiated to implement e-governance system and during this year itself there has been some planning and progress towards that end.

Regmi - Projects need to be identified. A master plan with time-bound phases of implementing such projects should be laid down. A financial commitment from the government (such as 5% of each year's spending will be allocated for ICT projects) needs to be enforced.

Shakya - Rules must be effectively promulgated and special budget should be assigned to IT. Maximum facility must be provided to the hardware manufacturing with zero percent tax on the computer components as has been done in Pakistan and other surrounding countries so that the hardware cost is drastically reduced. The products of Nepali computer industry must be given high priority against the computer products from other countries. Instead of just buying readymade computers from other countries, the government also must invest in Nepali computer industry as has been done in Taiwan, Singapore and China.

Amatya - First to do is to nominate one Chief Information Officer in each office.

Chaudhary - Making plan in paper only has no meaning unless it is implemented in real term. I strongly believe that unless you provide resource in terms of hardware, customised software and proper training to the users, we should not expect results. Many government offices do not have computers or even email addresses. Most of the officials who have computers are not even trained in usage and have no idea of the capability of the machines. Most government offices do not have networking and lease lines and the cost of the telephone is very high.

Khetan - First the politicians and bureaucrats should understand the need of such system. IT can play a significant role in governance and lowering costs and improving smooth and quality productivity.

Q.14 When do you think the Banepa IT Park will be operational? What role should the Park play in order to promote IT in the country?

Dr. Sharma - The construction will be completed during 2003. And the business plan will be finalized by July 2003. We are envisaging that the park will be demonstrative piece of government's commitment for IT development. Export promotion of software and software services, research and development, plug and play for small entrepreneurs and business incubator are some of the area in which the IT park will have significant contribution.

Regmi- Don't know. It's up to the Government when it wants to complete the project, although it has been in government's agenda for more than 10 years now. The completion of the IT Park is being seen by the investors as the sign of commitment of HMG in ICT. It should be able to lure big investors into the country.

Chaudhary - I can not give you the exact time of its operation but if we are to make any headway in the IT industry and are looking to compete with countries which have already made a mark in this industry, we should make all efforts to get the policies straight and get into implementation as soon as possible. In my opinion, the IT park could play an important role in the development of the sector quickly. We must take advantage of the fact that more facilities and work systems are available at our disposal as more and more new development takes place in the software programmes. These can be used to replace the older, less efficient models being used the world over.

Khetan - Banepa IT park should be firstly linked with one of the Universities.it should be independent under private Management. It should work as showcase of Nepalese IT brain. All facilities to promote it should be poured into Banepa IT Park. Park should encourage maximum private sector participation. Different R&D for software and hardware should be initiated with private developers.

Rajbhandary - The concept of an IT park in the outskirts of Kathmandu was developed in the early nineties. The world, and in many was also Nepal, has come a long way since then (IT and communication wise). It is anyone's guess as to when the Park will be operational. If and when the Park is fully operational, it can serve as a catalyst to the industry by being a center of excellence. It is important to note that as the Internet and communication become cheaper and the general economy becomes more liberal, the need of a physical IT park becomes that much less.

Q.15

How can IT be a foundation for good governance and transparency?

Dr. Sharma - As answered earlier, IT is a tool for transparency and efficiency. And we will use this tool for government service delivery as well.

Regmi- Guaranteeing the people's right to information is basically the major commitment that any democratic government should fulfill. Government needs to be transparent in its activities, so as to achieve the goal of good governance. IT can play a vital role in information collection, storage, management and dissemination. Internet technology has made it more possible and easy to access information. Automation of government processes with the use of ICT will help in achieving good governance with respect to getting rid of any personal prejudice in the processes.

Shakya - The standard software packages with different levels of security and discipline can bring transparency leading to good governance.

Amatya - It will be very difficult task to bring transparency and good governance in Nepal using IT where IT is not being used in day to day operation. However, using IT for governance and transparency will bring: effectiveness of operations, monitoring of operations, timely information flow, MIS reports as and when necessary etc.

Chaudhary - The power of the computer and the use of IT can be helpful to the government to make timely decisions. Information can be retrieved and analysed quickly. Information and rules can be explained to the common citizen more conveniently. References to the methods and processes used in the developed world can be seen and explained to the people more clearly. IT or any other tool can only be useful if the user takes advantages of its potential and has the attitude to use it for governance. If we don't want to use it then just having it as a show piece isn't enough and this is something that people in government should realize and improve their skills to use the services.

Khetan - It is a system which doesn't allow any hanky panky unless so designed in the system itself. Hence stable and transparent governance could be assured.

Rajbhandary - Good and efficient use of IT can certainly promote transparency. However, if the will and purpose is lacking, no amount of technology can fix bad governance.

Q.16

How would the resources be allocated effectively in IT sector when proper information on investment, employment, revenue, human resource, export etc are lacking?

Dr. Sharma - Priority programs have been identified in IT area and the government is committed to finance them. However, policies and incentives are key for the development of IT as the private sector will play a lead role in the promotion of IT activities.

Regmi - There is an utmost necessity for a database of ICT industry in Nepal. Organization such as ITPF has been knocking the door of MOST, NITC and also of the donor agencies to convince them to make some investments in this area. There is also a requirement of transparency from private sector in this respect. HMG should provide incentives for making a fair disclosure of information from private sector.

Shakya - First you have to have the confidence that IT is the only key for multi-dimensional development of the country and you should plan accordingly. And lastly, implement the plan emphasizing on HRD, employment and revenue generation and, finally, for export.

Chaudhary - The fact remains that we need to put in resources in the sector if we want to improve efficiency and effectiveness. The idea should be to strengthen the short comings and not stop the work for the development of IT.

Khetan - I don't see problem in domestic investment in IT sector. We have to develop human resource and can import technology. All these will help for better productivity.

Rajbhandary - This question has an inbuilt answer! Without a proper inventory of the IT resources, (human resources, technical infrastructure, investment profile etc.) it is not possible to formulate proper policies. A nationwide study on the present IT resources and the need for IT goods and services is essential.

Q.17 **What is the role of your association or institution in elevating the IT sector? The business of 21st century is based on internet. Are the members and/or employees of your association or institution taking it seriously and marching on the right direction? How is the level of their understanding and capabilities in this field?**

Dr. Sharma - NPC is responsible mainly for the formulation of plans and policies of the country as well as evaluation and monitoring of development programs and projects. In this respect, NPC takes initiatives in developing IT by formulating necessary national policies and plans for elevating the IT sector

Regmi - ITPF considers its role in promoting IT led development in Nepal, working in areas of standardization and quality, providing its support to the ICT professionals of Nepal in enhancing their profession and providing its advisory service to HMG.

Amatya - The Computer Association of Nepal was established for the purpose of uplifting Nepali society through Information communication Technology. Please visit our website for detail. www.can.org.np.

Chaudhary - Most of the members in our association are computer literate and they know the usage of IT. Of course, we are very serious and have taken this issue positively.

Khetan - In Nepal informal sector is quite big. Within formal sector the corporate sector is again small. Corporate sector and formal sector is now compatible with IT but not informal sector. We are creating awareness about using IT not as to have more productivity and market access. With 'NIT' we are discussing policy matters on how IT can help development. Under WTO regime IT will have further role to play. So chambers like ours are moving ahead in that direction. However, it has still not become our primary agenda. Sorry to say those leaders at political level or business level still lack on IT know how and they don't want to be compatible.

Background

Nepal's journey into the world of information technology began three decades ago, with the IBM 1401 for the population census of 1971. Institutional initiative to promote computer awareness and provide computer training began with the government's establishment of the Electronic Data Processing Center in 1974, renamed the National Computer Center (NCC) in 1976. In 1979, Nepal Electricity Authority started using computers. In 1981, NCC purchased the fourth generation computer, ICL 2950/10. In the same year, the Civil Engineering faculty of Institute of Engineering procured microcomputers to launch computer courses.

The history of computer training dates back to 1971, when American experts provided training in AutoCoder programming to operate the IBM 1401 computer. Later, in 1973, Tribhuvan University (TU) and NCC gave FORTRAN language training to about 100 persons.

The promotion of computer education in the national education system started only in the early 1990s. The Center for Curriculum Development, under the Ministry of Education, designed computer science courses for the 9th and 10th grades in secondary schools. In 1992, eight private schools offered computer science as an optional subject for S.L.C. exams. Kathmandu University started offering one course in Computer Science for I.Sc. prior to offering admission for B.E. in computer science since 1994.

Nepal's stint with the Internet started with the e-mail services provided by Royal Nepal Academy for Science and Technology (RONAST). Mercantile Office Systems started e-mail services for commercial purposes in June, 1994, and after a year, on 15 July, 1995, it started to provide full online access to Internet services and a presence of Nepal on the Internet by providing home pages.

The scenario now includes computer vendors representing almost all global brands (Compaq, Dell, Fujitsu, HP, Canon, NEC, Acer, Epson, Toshiba, etc.) as well as local assembling of computers. The total number of private firms working in computer sector exceeds 500, with more than half of these providing training programs of one type or another. The total number of computers in use may have exceeded 50,000, with a majority of these concentrated in Kathmandu valley. There are 12 ISPs with cumulative bandwidth of more than 10 Mbps, and only one telecom service provider, with Tele-density of 1.25%.

ICT Infrastructure and Services

Four Nepalese universities are offering IT related academic course with annual intake of about 5000 students. The number of students going out of the country to study IT courses is not included in this figure. The number of colleges offering IT courses, and their capacity is growing every year. There are also a number of colleges being opened with affiliation from foreign universities offering IT courses.

- Private training institutes are now offering long-term professional training courses. Several training institutes in Nepal have been franchised from top class institutions from India, Singapore & UK.
- Nepalese software development and production companies have been successful in meeting the national software development demand and do small volume of software exports.
- Thousands of man-hours worth of software and services are exported every day including development service to reputed companies like Toshiba. It also includes services like medical transcription, call centers and GIS.
- Foreign investment on software development industry had started since 1983. A software company has been established with full US investment and successfully running with Nepalese software developers since 1997. Now, we have Software and service Joint Ventures with US, Japan, India and etc.
- The trend of opening up companies offering software application services such as digitization, medical transcription etc especially for export purpose is growing.
- Highly advanced e-commerce portals are also developed here for US and Europe
- Nepal Telecommunication Authority (NTA) has been established in order to facilitate and regulate privatization of telecom & communication facilities (ISP, VSAT, Paging, and Cellular, WLL & ultimately, fixed line services).
- There are 12 ISPs who have received the License & 9 ISPs are already up and running very actively. Estimated number of Internet users is more than 100000.
- According to a press release from NTC, all 75 districts have telecommunication infrastructure, 1528 VDCs out of 3914 have PCOs. NTC aims to have at least two telephone lines in each VDC by 2004 AD.
- MM CD-ROM of Nepal has acclaimed International BEST Award
- Off-the-shelf software products from Nepal are also used abroad

Existing IT Industry Base

The figures are based on extensive study of trade directories.

S.NO	Service Categories	Number
1	Software Development	74+
2	Universities	4
3	Trading	200+
4	ISP	12
5	Networking	58+
6	System Integrator	26+
7	Training Institute	177+
8	VSAT services Provider	4
9	Pager Services Provider	6+
10	Mobile Service Provider	1
11	IT Enable Service	29+
12	Consultancy	81+
13	Graphic Designer	24+
14	Web services Provider	13+
15	Service Provider	50+
16	Solution Provider	39+
17	JV Company	9+
18	Interactive Multimedia CD-ROM Developers	3+
19	IT Media	2
20	Others	58+

Source: IT Directory 2001 by CAN, with updates

Computerization in Government and Public Enterprises

Computerization of Government Organizations and Public Sector started back in 1974 with the establishment of National Computer Center. All the Government Organizations and Public Sector today use computers for Word Processing, Communication, etc. Accounting, Personnel Record etc. is the first application software that is implemented in these institutions..

Computerization in Financial Sector

Financial Software especially designed for Finance companies, Banks & Co-operatives in Nepal are mostly developed by local Software Companies. At present large number of banks, financial institutes and Co-operatives (Which are especially established for upgrading social groups), are established in Nepal and all of them have shown keen interest in deploying software developed by Nepalese companies as the software developed outside Nepal is costly compared to locally developed ones and also lack immediate support. Almost 75 percent of such companies have already used Finance software in their organizations.

Computerization in Manufacturing and Other Sectors

With increasing use of computers in business, manufacturing and other sectors are not exceptions. The most widely used application of computer is in accounting and payroll. However, computers have been used for helping pre-manufacturing process as well. One example of it is the use of computer program in carpet industry for designing and graphing of carpets. Some customized packages developed by experts' abroad have been in use in individual factories for the last several years. A commercial off-the-shelf package developed in Nepal has been in offer since last three years, and more than a dozen carpet factories are already using it for computer aided designing, coloring and graphing of carpets. A greater number of carpet factories also do use the inventory and order tracking system that is custom made by different software developers.

Tourism industry is also moving ahead in the use of computers. Almost all of the airlines are equipped with locally developed Airlines MIS, whereas, many hotels and travel agents also use locally developed software for their front office, back office, accounting and trekking management work.

In the health sector, hospitals are slowly moving into computerization, whereas, most of the medicine distributors are already computerized. Most of the pathology labs do not use computers at all, not even for report generation purpose.

At the shop-keeping side, only the major departmental stores are computerized, while small and medium sized shops still use manual means. The Internet Service Providers and major computer vendors use custom software for their accounting purpose, but the training institutions are not making much use of it.

Many Nepalese organizations have Internet presence, and some of them are already producing promotional CD-ROMs as well.

Educational Institutions

Four Universities in Nepal are offering formal computer education of various levels with total intake of about 5000 students now. The programs offered by these universities are as follows:

Tribhuvan University and Affiliated Colleges

- M.Sc. (Computer Science)
- M.E. (Computer Engineering)
- B.E. (Computer Engineering)
- B.E. (Electronics Engineering)
- B.E. (Electrical Engineering)
- B.Sc. (Computer Science)
- Bachelor in Information Management
- I.E. (Electronics Engineering)
- I.E. (Electrical Engineering)

Kathmandu University

- M.S. (Information Technology)
- B.E. (Computer Engineering)
- B.E. (Electronics Engineering)
- B.E. (Electrical Engineering)
- Bachelor in Computer Information System

Pokhara University and Affiliated College

- B.E. (Computer Engineering)
- B.E. (Electronics Engineering)
- PG Diploma in Computer Application
- Bachelor in Information Science
- Bachelor in Computer Information System

Purvanchal University and Affiliated Colleges

- B.E. (Computer Engineering)
- B.E. (Electronics Engineering)
- Bachelor in Computer Application

Besides these institutions, a large number of skill oriented non-formal training institutes also offer various kinds and levels of Diploma and specialized training. A couple of worldwide training centers also operate in Nepal.

Study Objectives and Areas

The objective for compilation of the success stories of IT industry of Nepal is two-fold:

- To draw the attention of foreign and domestic investors to the ICT industry of Nepal
- To market the Nepali ICT industry in the international arena

The products and services offered by Nepal's IT sector essentially fall in the following five categories:

- a. Hardware (Manufacturing, Reselling, Maintenance)
- b. Software and Multimedia
- c. Internet and Web Development
- d. Human Resource Development
- e. Other IT-Enabled services

Hardware (Manufacture/Reselling/Maintenance)

Computers have been assembled in Nepal since the early 1990s. In that decade, for example, Mr. Muni Shakya put his resources into assembling PCs and selling them to the Agriculture Development Banks in Kathmandu. The growth in the ICT hardware market continues to fuel demand for after-sales services like repair and maintenance. Mercantile recently launched its own line of PCs called Mercantile PC – a first in Nepal.

The private sector participation in importing computers started with MIPS Pvt. Ltd in 1982. Since then, the market for PCs as well as different types of computer accessories has grown phenomenally with over 100 computer vendors offering their products and back-up services. Leading trading houses like Mercantile, CAS, and WDN are importing not only desktops and laptops but also accessories like printers, scanners, and various items of communication equipment such as modems, data cables and antenna equipment. The IT industry in Nepal today has the capability to design and maintain the infrastructure for information connectivity such as high-capacity wireless and optic fiber-based networks.

Computer hardware was first introduced in Nepal by the government. The first computer brought into Nepal was as IBM 1401, a mainframe computer, leased by the Central Bureau of Statistics to process the population census of 1971 (of the population of 11.5 million), which took only 20 months. The benefits of the computer were thus instantly recognized.

Nepal continues to be a manufacturer and exporter of ICT equipment. Sun Moon Computer Industry P. Ltd. started manufacturing computer cards in Nepal as a joint venture in the 1980s. Laser Sun Manufacturing Company and Beltronix are manufacturing and selling Uninterrupted Power Supplies and other electronic equipment. A prospective buyer would today be faced with an array of latest international brands as well as locally assembled clones to choose from at very competitive prices. With continued quality improvement and price reduction, the computer permeates every sphere of the Nepali life today – a very positive milestone.

Some of the success stories under this group are given here after.



Beltronix is one of the leading engineering companies in Nepal that deals with electronic and computer. Beltronix is well equipped to provide service in electronic and computer by its highly experience professionals, sophisticated maintenance workshops and world-class brand products.

- 1. First Electronic power protection manufacture:** Beltronix pioneered the manufacturing electronic power protection devices, setting the example that it could be done. This led to the emergence of a whole new sub-sector in Nepal.
- 2. CEO:** Mr. Bijay Krishna Shrestha who now heads the company as Chief Executive Officer envisioned Beltronix. With a Bachelors Degree in Electronics (BE) and a Masters Degree in Business Administration from the United States, he has had more that 30 years experience in the electronic and computer fields. Now, he works Beltronix as a chief engineer as well and chairman for Nepal electric Vehicle Company, Nepal Insurance, and Vice president of Bank of Kathmandu. He was past president of the Computer Association of Nepal, Member of RONAST, IT steering Committee, Ministry of Science of Technology. Similarly, he was the Ex-Directore of Bank of Kathmandu, Premier Insurance, Bishal Bazar Co. Ltd etc.
- 3. Pure Engineering Company:** Engineer owned, Beltronix has a reputation for professional and dedicated attention to service technical products can be best understood, sold and serviced by engineers. 90% of Beltronix staff has technical knowledge in electronic and computer and Beltronix provide 6 months training in electronic and computer technology to its new staffs.
- 4. Available wide array of products and service:**
Service available:
 - Computer, Printer and Accessories
 - Security and Surveillance System
 - Power protection Devices
 - Office Automation devices
 - Medical and Analytical Equipment
 - Repair and Maintenance
- 5. Successfully Completed Multinational Huge Project:** Recently, Beltronix has successfully completed installation of highly sophisticated CCTV System, P. A. System, FIDS System, and etc at Tribhuvan International Airport in competition with multinational company.
- 6. Three Branches:** Successfully running three branches at Kathamndu valley.
- 7. Highly experienced:** Beltronix at one time or other has had the privilege to serve just about every international organization in Nepal, Banks, Major Hotels, Leading Industrial and business houses, Ministries, UN offices and etc.

Contact Person:
Mr. Bijay Krishna Shrestha (CEO), Beltronix



International Electronics Concern Pvt. Ltd.

International Electronics Concern (IEC) Pvt. Ltd. is a private marketing organization engaged in the sales of leading modern electronics and ICT equipments in the kingdom of Nepal. IEC has been continuously contributing a lot in the field of bringing renowned brands of office automation equipments for the past 11 years. IEC is helping to introduce modern breakthroughs in electronics and ICT technology into Nepal and provide economical solutions suitable for the local business and general customers.

IEC has already made a mark in Nepal's ever-growing market for ICT equipments. IEC is the authorized distributor of Canon product for the kingdom of Nepal and also the distributor of Anders+Kern, products for Nepal. IEC is a tie-up with Canon Singapore and Anders+Kern, GmbH to bring state-of-art products in office automation and business communications. IEC imports and markets a wide range of equipments from digital copiers to color printers, from personal computers to presentation and communication equipments.

The latest and the most advanced in the Canon suite of products that IEC is introducing into the Nepalese market are the Canon digital copiers. They incorporate the latest features in photocopy as well as information and communication technology. A digital copier, besides being a photocopy machine is also a printer, scanner and facsimile all in one. Another added advantage that a digital copier has is that it can be controlled online from anywhere in the world via the Internet.

IEC's edge is its specialized marketing operations and guaranteed after sales, repair and maintenance support. The mainstay of IEC is to satisfy customer's demand by ensuring excellent equipment performance and after sales services all the times. Besides providing the regular warranties on manufacturing defects, our services also include "ON CALL INSPECTION" to clients. We also keenly undertake Regular Preventive Maintenance after expiration of the warranty period. Our success lies in the total satisfaction of our clients and to ensure this satisfaction we guarantee the maintenance of all our equipments. We always hold sufficient consumable items and spare parts to ensure full maintenance.

At present IEC!has 40 full-time staff of which over 80 percent are trained in various management and engineering disciplines.

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World Distribution Nepal P. Ltd.

World Distribution Nepal (WDN) was institutionalized to fulfill the growing demand for Information and Communication Technology in Nepal. We are a diversified, competitive, professional and service oriented organization to serve and facilitate in field of computing and electronics. Dealing mainly with computers, printers, networking and office automation equipment, we try to bring the up-to-date international technology to Nepal.

With a view to bring the best products from around the world, we have continually maintained strategic alliances with the most renowned companies in the ICT field. We are one of the leaders in marketing computers ranging from notebooks to servers, printers, LAN / WAN equipment, office automation equipment including PABX/telephone systems, facsimile, photocopiers, UPS and Generators.

The brand names that we associate ourselves with include top-notch names like DELL, which provides cutting-edge great value solutions to over 80% of Fortune 500 companies, TOSHIBA, a world-leader in notebook computers, ALLIED TELESYN, a highly successful producer of network building block products, Sun Microsystems, a leading vendor of computer hardware and DURANET, a product range that includes UTP, CAT, optic fibre cables and other network accessories.

To back up this supply of high quality ICT equipment, we have maintained well-equipped labs with a team of trained and experienced hardware/network engineers. Along with the warranties that we provide we also offer annual maintenance contracts to ensure trouble free usage of our equipments.

The success of WDN lies in its high quality products and solid after-sales support. We have been called upon to provide our services to various organizations ranging from government offices, foreign projects, NGOs, banks, hotels and private business houses. Our list of customers include such names as USAID, Save the Children US, ICIMOD, Royal Nepal Army, Police Headquarters, Nepal Arab Bank, UNDP, SITA etc.

Besides representing prominent hardware manufacturers from around the globe, we are also a communication network and systems specialist and provide state-of-the-art communication solution and network connectivity. We also have a strong background on database and web application development and are the pioneers in introducing innovative technology such as GIS into Nepal. We are capable of providing a total ICT solution and thus are the **True ICT Systems Integrator**.

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Software and Multimedia

The first software developed in Nepal was for the population census of 1971. Foreign experts trained Nepalese in Auto Coder programming and developed software for the IBM 1401.

The private sector's foray into programming and software development started with DSI. They developed software chiefly for export. In 1984, five Nepalese from DSI went to California for nine months to develop software for the Vivid Software Company. Later, in 1988, DSI got a contract from Little Computer Services to develop software for the American Army.

The software industry in Nepal thus has had a brilliant start. It may have picked up with the development of database programs for stand-alone systems, but in recent years it has gone beyond with the development of software that can collect data from far-flung areas using wide area networks. The IT industry in Nepal has not only been developing software for local companies and the HMG but also for many foreign ventures in USA, Germany, Japan and other western countries. Nepalese software companies today have a capability to design a wide range of sophisticated products incorporating the latest breakthroughs in ICT technology, including advanced RDBMS systems like Oracle and other programming tools like VB and C++ on various platforms such as Windows, Linux and Sun Solaris. Today, there are several companies developing software for a wide range of applications in banking and finances, airlines, accounting and inventory, management information system, and graphics and multimedia, to name a few, for both national and international markets.

Multimedia, though, was introduced in Nepal much later - in the second half of 1980s. Actual computer animation started only in 1989. The introduction of Star Tv was instrumental in generating multimedia awareness.

The multimedia industry in Nepal has grown largely with the growth of the audio-visual industry. Almost all of the celluloid films, videos and audio records produced today in Nepal invariably make use of multimedia for recording, editing, composition, etc. With the advent of an aggressive advertisement culture, various advertisement agencies are making maximum use of multimedia services. Cinematrix Studio is one such successful multimedia company. Another most widely used multimedia service is in the manufacture of presentation CDs, which have become popular mediums for not only sharing information but also marketing products and services both domestically and internationally. Multimedia companies like eMotion Pvt. Ltd. have a capability to design and manufacture presentation CDs on an industrial scale.

Some of the success stories under this group are given here after.

Alternative Technology

TheHomeofTechnopreneurs

Reinventing Success Through Transforming Ideas and Innovation

Registered as a software export company, Alternative Technology specializes in solutions for carpet industry and other graphics software. Its Galaincha Suite of Products is in use in Nepal, India, Pakistan, Belgium, Germany and United States. These solutions to carpet industry have provided its users with limitless possibilities for getting more business – the key reason behind the success of these products. “Galaincha” is the leading software product of the company with which the user can design the carpet of desired size and quality, quickly modify the design, see numerous color combinations, immediately print the graph, and estimate how much of wool of each color will be required for weaving the carpet. One can also prepare the design catalog, and even automatically generate designs and color combinations based on custom color set.

The company already has two patents on technologies that have been employed in their software. One technology, Color SMART, allows the user to quickly find the desired color and produce a matched print sample of the same color too, while the other technology, Color Tex, makes it possible to change colors on a textured image. Owing to superior texture effect and print matching, the design print outs from the software outsmart real photographs of rugs in their quality of presentation.

“The solutions from Alternative Technology have greatly helped in enhancing our business. The breakthrough technologies they have delivered to us are unique in the world, and these have not only increased our efficiency and productivity, but have increased the level of satisfaction of our customers too. We can now see our rugs before these are actually woven.”, says Sonam Gurung of Boudha Designer Carpet, who is now planning to market his carpets using these technologies.

Specific tools, processes and features for carpet designing and integration with graph make Galaincha a preferred choice over other designing software. Its proprietary file format, .ctf, for carpet designs is 20 times smaller in size as compared to .bmp in average, and still maintains the design size, proportion, color information and security codes. For this reason, .ctf is an ideal solution for exchanging carpet design over Internet between the manufacturer and the buyer.

In conclusion, Galaincha Suite of Products has the capability to transform the way carpets are designed, produced and marketed. With the aid of this technological solution, the carpet industry can transform its “Profit” in to “Prof IT”.

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List of Products

Suite of Products for Carpet Industry

- Software for carpet design, color combination, graph, wool estimation, presentation
- Software for distributing designs on CD with provision for changing colors with texture
- Software for accessing designs on web with provision for changing colors and ordering
- Software for simulating carpet in actual size and texture and printing in accurate colors

Product for Television

- ▶ Software for displaying scrolling text for cable TV

Product for Educational Institution

- ▶ Software for translating application form into admit card by scanning and decoding
- Software for processing the scanned answer sheets to produce result

List of Proprietary Technologies

- Color matching
- Texture simulation and color change
- Color extraction and reduction algorithm
- Real size rendering
- Digitizer interface
- Drawing command decoding engine
- Automatic design generators
- Automatic color combination
- Overlapping text on TV broadcast
- Optical mark recognition

Cinematix Studio Pvt. Ltd.

Cinematix Studio started providing multimedia services such as 3D animation and non-linear video editing from 1993. Since then we have been offering a wide range of other services as well such as digital music recording, other post-production work for celluloid films, videos, commercials etc for corporate as well as commercial markets.

The reason for our success today is the strong base that we strived to create when we were first established. We started with primitive graphic I/O cards, slow processors and primitive software. There was also very little awareness among the people about multimedia services. We executed many awareness programs such as conducting seminars and even created free 3D animation for customers with an optimistic view that computer multimedia services were also necessary.

Today, the scenario has changed completely. Every commercial needs a 3D animation, every television station needs a 3D logo and almost every other video program is edited on a non-linear system. We are proud to claim that we are the pioneers and the present leader in this field in Nepal.

Our strength is Technology. Starting merely with three IBM 386 computers, we now have the latest multimedia machines and tools incorporated into our state-of-the-art laboratories and recording studio. We now boast of the "AVID Edit Suite" for high-end post-production and finishing for video and film editing, which is one of the best equipments in the world for such purposes. We are also the only audio recording studio in Nepal equipped with Digidesign ProTools| 24 Mix Plus. ProTools is the Industry standard Professional Digital Audio Production System specially designed for recording songs, music, voice-overs, Foley effects, film dubbing and film mixing.

Our wide range of services allow our clients to produce and post-produce all materials for a project under a single roof, whether it is editing programs, creating program graphics, creating astounding commercials or simply conceiving designs for accompanying print or multimedia material. We have every facility available for cutting edge broadcast and commercial productions, film productions, 3D animation, tilting, sub-tilting, training and promotional videos and commercials.

We at Cinematix Studio believe that it is necessary to not only meet the expectations and requirements of our clients but to exceed them. Cinematix.....where endless possibilities begin.

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eMOTION (P) Ltd

Authoring World Class Interactive CD-Roms in Nepal

eMOTION (P) Ltd is a leading multimedia development facility in Nepal with internationally recognized skills in multimedia authoring.

A CD-ROM entitled "Mt. Everest & More..." developed by the company for Nepal Tourism Board had won the prestigious PATA Gold Award for the year 2000.

The company has successfully authored more than 40 different CD-ROM titles, the first being "Nepal, the Multimedia CD-ROM" launched in 1996 by then Prime Minister Mr. Sher Bahadur Deuba.

eMOTION's services include all aspects of multimedia CD-ROM production, including script development, storyboard creation, interface design, programming, package design, beta testing and replication. Multimedia applications include interactive brochures and catalogs, digital publications, educational multimedia CDROMs, corporate presentations; computer based training, interactive catalogs and interactive KIOSKS (touch screens)

eMOTION's competent team includes IT professionals, Software developers, web developers, multimedia developers, concept designers, art directors, 3d animators, and graphic designers.

eMOTION's list of clients Consists of Who's Who of Nepal & Abroad. These include, but are not limited to: Nepal Tourism Board, UNDP, UNICEF UNFPA WFP ADB, ADRA, Helvetas, Soaltee Crowne Plaza , Yeti Travels, Manakamana Cable Car, Casino Nepal , United Paper Mills, Finland, Poetic Systems Japan, WinBusiness, Japan, Evergate Germany.

Major Experiences in Multimedia CD-ROM Development:

1. Nepal Multimedia CD-ROM version 1.0, 2.0 & 3.0, 1996, 1st multimedia CD ROM
2. Bangkok City Map CD-ROM (Japanese), 1995, for Poetic System Corporation of Japan
3. SimPaper (The Paper Game) CD-ROM 1997, for 'Fortune 500' company of Finland.
4. Enchanting Images of Nepal 1997, CD-ROM based Photo Album in Kodak Photo CD format.
5. Clear Image of Nepal (Japanese) 1997, for Poetic System Corporation of Japan.
6. Soaltee's Nepal CD-ROM Version 1.0 & 2.0 1998, 2001 for Soaltee Crowne Plaza Hotel.
7. Asian Development Bank CD-ROM 1999, for ADB Nepal Mission.
8. Marcopolo Travels & Tours CD-ROM 1999, for Shaky Holdings, Kathmandu
9. A View From Here 2001, for FHI/AVSC
10. Putting People First 2001, for UNDP (PDDP).
11. Mt. Everest and More CD-ROM version 1.0, 2.0, 3.0 2000, 2001, 2002 for Nepal Tourism Board. (Winner of the prestigious International PATA GOLD AWARD 2000)
12. Bikash Ko Goreto 2001, for Ministry of Science and Technology Sikkim,
13. Manakamana Cable Car CD-ROM 2000, for Manakamana darshan Pvt Ltd
14. Himalyan Mountain Bike CD-ROM 2001, for HMB, Nepal
15. National Vitamin A Program In Nepal 2002, for JSI.
16. ADRA NEPAL CD-ROM 2002, for ADRA, Nepal.
17. Dhulikhel Conservation Project 2002, for DED/Dhulikhel Municipality
18. Environmental Health Project (EHP) 2002, for EHP, Nepal
19. Chadhary Group Corporate CD-ROM 2002, for Chadhary Group, Nepal.
20. UNICEF Nepal CD-ROM 2002, for UNICEF Nepal.

The company is co-owned by **Mr. Khusbu Sarkar Shrestha** and **Mr. Raju Karki** and may be reached at 977-1-5524545 or jncc@wlink.com.np

Hitechvalley iNet Pvt. Ltd.

Providing Innovative Solutions for Tomorrow

Hitechvalley iNet – offshore software company, established in 1997 with the inherent strengths and capabilities to provide its customer with complete information technology solutions for their growing business needs. We specialize in blending the appropriate technology and business domain for the required solution. The management team at Hitechvalley iNet has more than decades of technical and management experience in Information Technology Industry. Hitechvalley iNet has developed several e-commerce, B2B, Search Engines, Knowledge Management and content Management solutions and Complex Enterprise Intranet application and corporate presence solutions for multinational companies like Intel, EPC Commands, MMR Group, LOCKHEED MARTIN Global Telecommunications Group, HARBINGER.COM, Browne Dreyfus International, FITA, PRMIA, Metropolis, ALCATEL, Geveke, Because, Athlon and many more from USA and Europe.

MISSION

Deliver Complete Customer Satisfaction by Providing High Quality, Cost Effective Products and Services Through Competent and Motivated Employees.

Our Proprietary Products

- www.myPCEverywhere.com - browser based solution for accessing remote computers developed in NET
- iNet Live - myPCEverywhere.com based real-time live support CRM solution
- Orkestro - corporate knowledge Management search engine with document indexing and automatic categorization and agent based search
- iNet Contol - Large Project Contract and Risk Management application
- CollabPRO - web based Project administering and management Collaboration Solution
- NetContent - WYSIWYG Content Management Solutions
- EDITA - WYSIWYG web based drag and drop site and store builder
- Medical application - Hospital management, Patient Records, Pathology, billing, pharmacy, appointment and scheduling Applications
- Online Test Engine - Online certification exam engine
- Membership .NET Framework Membership management, Event Management, publication, job board, scholarships, CRM, reports and many more
- Dating engine
- Document management and collaboration intranet
- iNet Chat with multi room and Instant messaging facilities
- Smart School Suite - Total School Management and Academic evaluation Suite
- Others: Banking and Finance Company front office solution, Personnel Management system, Office Check-in/Check-Out system, EPABX interface and Billing system and more other...

STRENGTH

- First software company in Nepal to pursue ISO-9002 certification
- Square Trade and US Search Certified and verified for Internet based business
- We have 60 dedicated software Engineers, System Analysts, Programmers, Web designers, Graphics designers, and industry experts.
- Hitechvalley iNet Corporation in Seattle, USA and official Agents in New York (USA), Toronto (Canada), Seoul (South Korea)

OPERATING SYSTEMS

Windows NT/2000/98/95/XP, Linux, Unix, Palm OS

DEVELOPMENT FRAMEWORKS/TECHNOLOGY

Microsoft .NET, J2EE, Espresso, Struts, JINI, J2ME, JMF, Cold Fusion, SOAP, MFC, Win32

PROGRAMMING LANGUAGES

Microsoft .NET framework based C#, VB.NET, ASP.NET, Java, Java Beans, EJB, Java Servlets, SWING, JFC, HTML, XML, Java Script, Visual C++, Delphi, ASP, PHP, JSP, Visual Basic, Developer 2000, MS Access, Perl

APPLICATION SERVERS/ DATABASES

IIS, Tomcat, Resin, JRUN, JBOSS/Jetty, Web Logic, Oracle, MS SQL, MySQL, MS Access

Graphic/Web Design/Visual Modeling tools/Project Management

MS Project, Visio, Rational Rose, Macromedia Flash, Fireworks, Illustrator, Photoshop, Dream weaver, Front page

Contact:

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Mandala Software

Mandala Software Pvt. Ltd. is one of the leaders in the areas of software development and IT consulting. It is established to complement the information technology solutions and business transformation methodologies. It has more than five years experience in software development under client /server and component based environment. Within a short span of time it has established itself as one of the leading vendors in the software development field.

Our software development platform are based on Oracle and Microsoft SQL server at the back– end and Developer/2000, Visual Basic, Delphi, C++ and Java at the front-end on different operating systems such as Novell Netware, Windows NT and Unix.

We follow state-of-the-art design methodology that covers today's component/web based and GUI software development as in object oriented design methodologies. Older styles of design methodologies, such as Structured Analysis/Structured Design (SA/SD), lack features of client/server and GUI environment. We, thus, avoid using these methods and using truly object-oriented design methodologies.

Two of our trusted products - **Management Information System for Industries and Airlines** - and many other turn-key software development projects have gained customer satisfaction and have included major customers like Buddha Air, Lumbini Airlines, Gorkha Airways, Sangrila Air, Skyline Airlines, NECON Air Limited, Mountain Air, Yeti Airlines, Surya Tobacco, Janak Educational Material Center, Morrison Knudsen Inc., Nepal Police, Nepal Electricity Authority, etc. in our customer database. Our increasing software customer base has put us at the front line of this field.

Mandala Software Pvt. Ltd. has already started to focus on many new ventures in software development field which include computer telephony, intranet development, web-based data retrieval and e-commerce. It has already completed the most demanding web based airline reservation system for the domestic airline operators of Nepal, which is now at its implementation phase

Software Products

Since last five years Mandala Software Pvt. Ltd. has been involved in many software projects in different platforms. Starting from a small record keeping system for Department of Land Reforms to enterprise level management information systems, our company has delivered quality software unmatched in local market. During last five years period some of the important projects completed. The major projects completed are:

AMIS (Airlines Management and Information System) for 8 (Eight) domestic Airlines

PMIS (Personnel Management and Information System) for Nepal Police and Morrison Knudsen International Inc.

BCS (Budget Control System) for Family Health International (FHI) and 5 (Five) project implementing agencies.

LM (Loan Management) for Surya Tobacco.

MIS (Management Information System) for Nepal Electricity Authority (NEA).

Online Web Reservation for Domestic Airline Operators.

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Nepasoft Pvt. Ltd.

Nepasoft Pvt. Ltd. is a part of World Distribution Nepal (WDN) Group. This software division of World Distribution Nepal was established with a view to introduce into Nepal the global shift in software designing trend, from Traditional Database Management System to Relational Database Management System.

The primary expertise of Nepasoft lies in the development of Relational Database Management Systems. As sole alliance partner of ORACLE in Nepal, we are in a position to provide the highest quality database software for our clients. We have developed many solutions in ORACLE for domestic government organizations and corporate clients. Our global market outreach has greatly extended through joint collaborations with major global IT players such as Price Water Associates, India, Komatsu Information Providing Ltd. (KIP), Japan, Citicorp Information Technology (CITIL, CITIL Bank Group) etc. We have been designing and maintaining a wide range of database based systems from hospital management systems, inventory control systems, financial management systems, crime and criminal information system to online medicine order systems.

One of our most successful products is the CARE Hospital Management System (HMS) being used in various hospitals throughout Nepal. HMS is a total hospital solution designed to cater to day-to-day operation with fully integrated OPD, Appointments, Lab, In-Patients, Emergency, Inventory, Pharmacy, Payroll, Accounting, and other modules. Open and Modular format of HMS allows clients to mould the system to their needs. HMS is inherently capable of strong MIS assisting for future research work providing valuable data collected over a period of time.

Another large project that throws some light on our capability is the Royal Nepal Army Inventory Control System. The system has various modules viz. Purchase, Requisition etc. besides having all the general functions of normal inventory systems. Furthermore, the system also keeps track of different unit holdings, personal holdings etc. The system has the capability to maintain records of very minute details such as the holdings of individual army personnel and can collect information over a large network spread across different *Ganas (Batalions & Units)*. The very functioning of purchase and issue of different goods in the Royal Nepal Army depend upon this system.

Nepasoft has also been successful in designing online software and has carved out a separate Internet division for this purpose. We have undertaken several successful projects under this division such as Submitta Web Directory, Germany and Construction Equipment Manufacturer's Association Industrial Search, Japan. Besides this, we have also maintained a GIS division and we also offer our clients a complete range of GIS implementation services, including software development, satellite imagery, systems integration, technical support and consulting. All in all, working alongside other WDN Group companies, we strive to be the **True ICT Systems Integrator**.

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Professional Computer System (PCS), established in 1988, is a leading software development company and turnkey solution provider in Nepal. PCS is widely reputed for its numerous off-the-shelf software solutions. Just to name one, the Professional Banking System is a complete banking solution used in a total of 10 branches by Lumbini Bank and Nepal SBI Bank LTD. Devnagari Sorting Solution (DSS) technology, a PCS brainchild, is the unique Devnagari script data processing technology that allows data sorting as well as data search for Devnagari script. This technology has been (and can be) embedded in any software or database that requires Devnagari script.

The Integrated Voters' Registration System of the Election Commission of Nepal functions in the Devnagari script and uses the DSS. PCS designed, developed and implemented the system in a LAN with client-server architecture with IBM RS 6000/ AIX and DB2 RDBMS as Server; Visual Basic as front end development tool. Over 14 Million voter's data (6 GB), which makes it the largest database in Nepal, was processed. PCS developed and implemented the Election Results Processing and Dissemination System for the election of members of Parliament. Nepal TV and cable network in Nepal, broadcasted the results obtained from the system — live. Election results were also available in the Internet.

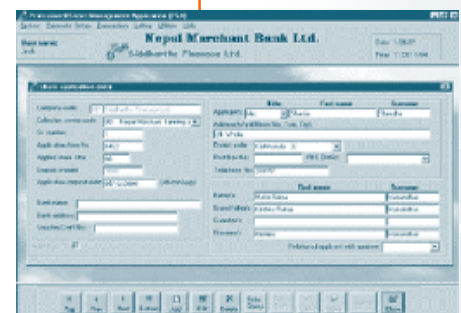
One of the very successful complex project designed, developed and implemented in a very short time of 3 months using 15 developers round the clock by PCS is Games Management System for VIII South Asia Federation Games held in Kathmandu. The system was implemented with Wide Area Network of computers from 12 playing grounds, 5 hotels, a communication center and a control center. The database was based on Oracle. Oracle's Developer suite, Visual C++, Java scripts, HTML were some of the development tools in use. For intranet access of the information, Cold Fusion application server was used. The match results were also accessible in the internet.

The Judicial Information System is a web-based application with information access to Supreme Court's judgments and HMG's gazettes, rules and statutes. The user can search for information in Devnagari script. JIS system is also made available on the CDROM.

The Professional Share Management System and Professional Share Issue System is the most widely used complete share management solution in Nepal. There are more than 25 installations of PSMS/PSIMS including the largest public limited companies in Nepal.

PCS also takes the credit for the design and development of VAT Accounting System for Inland Revenue Department. The application is based in client-server architecture on ORACLE 8i platform and has been developed with Oracle development suite. The system works from 21 Inland Revenue Offices spread all over the country, from where the daily transactions are sent to the main computer using Virtual Private Network through Internet and dialup communications, and are integrated with the national database on a daily basis.

PCS has been exporting its software services to countries like USA, Germany and Japan.



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WorldLink Technologies

WorldLink Technologies is a fast-growing software and web development company based in Kathmandu. With a focus on the development and management of advanced software systems and business solutions, WorldLink Technologies has consistently met client expectations and has continually endeavoured to develop software solutions to our clients' satisfaction. Our solutions, devised not to intimidate but to simplify the ever in-demand information dissemination process, have not only helped our clients manage their information more efficiently but have also allowed us to stay at the forefront of the ongoing technological revolution

History

The roots of WorldLink Technologies lie in the "Web and Software Services Department" within WorldLink Communications. The department was formed in 1996 to cater to the increasing demands for in-house web and software services. During this time it successfully carried out various web and software projects, for the most part to manage the complex and rapidly growing ISP service. A need was also felt then to make available customized software solutions for clients within the country and abroad, and thus, in keeping with WorldLink's vision to expand and to innovate, and with its belief in the potential of Information and Communication Technology as a potent tool for national development, WorldLink Technologies was formed.

WorldLink Technologies inherited from the previous department all the software and websites developed, as well as the clients and expertise; this proved vital in keeping client relations running smoothly within the new structure. Starting initially with website development and web hosting services, WorldLink Technologies was providing within a year industry standard Oracle based software solutions.

During its fourth year of its operations the development of the Corporate Information Management System (CIMS) was completed. CIMS, an Oracle based Enterprise Resource Management (ERM) system, was first implemented at its parent company, WorldLink Communications. With over 8000 subscribers, 12000 accounts, and over 120 employees, WorldLink Communications generated an enormous amount of data every month; all this data, including the mammoth task of making available numerous reports instantly on demand, was handled effectively by the CIMS.

The successful implementation of the CIMS, besides revolutionizing the way WorldLink conducts its operations, also allowed us to spread wings into web based applications and other software solutions. Along with the web services, WorldLink has also other developed pioneering solutions for other organizations for such organizations as the Ministry of General Administration and Nepal Electricity Authority.

WorldLink Technologies was the first ISP in Nepal for Top Level Domains (TLD), such as .COM, .NET and .ORG. Prior to WorldLink's introduction of this service, few people in Nepal had access to instantly recognizable TLDs.

WorldLink Technologies today is an established company with an impressive record of achievements. Recent developments have all the more confirmed WorldLink as a premier provider of quality business automation solutions that settles for nothing less than the utmost in client satisfaction.

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Internet, Web Services and ISPs

Like most other IT services, a government agency, Royal Nepal Academy for Science and Technology (RONAST), first introduced the Internet in Nepal. RONAST is also credited with first introducing email service in Nepal and Nepal Forum of Environmental Journalists was one of the first to use this service.

Mercantile Office Systems first started offering email services commercially in June 1994. Later, they also started providing Internet services as well, with the opening of their new branch called Mercantile Communications Pvt. Ltd. This was the only Internet Service Provider in the country until World Link arrived on the scene. Today there are some 25 Internet Service Providers in Nepal, although only nine are in operation. Between them they cover most urban centers in Nepal with some making inroads into rural Nepal, especially in areas most frequented by foreign tourists.

The advent of web page designing more or less coincided with the introduction of Internet facilities. <Yomari.com> was one of the first companies to design web pages commercially. Many Nepali companies have already started developing websites, shopping cards and web-based programs for domestic as well as foreign clients, thus underscoring the economic viability of the Internet and web development.

Some of the success stories under this group are given here after.

INFOCOM PVT. LTD

Infocom Pvt. Ltd. is an independently managed, wholly owned subsidiary of ICTC Holding Company, Nepal. Infocom started its service as Internet service provider in 1999 and since then has diversified its services in software, hardware, communications, Internet and consultancy.

Infocom was incorporated with the vision; "To be a force to reckon with in the global IT arena". Infocom implement advanced leading technical solutions with the commitment of providing clients with the most useful, innovative value added services. With the technical backing of Loral Skynet, Pacific Century Matrix, Ceycom Global Communication etc on the satellite networks, Infocom has the capabilities of managing most advance networks that in offer. Further more, Infocom is the representative of Moneyline Telerate Information Systems, the premier financial information service provider of the world.

INFOCOM SERVICES

- **Access Services**

Dial-up Internet with 200+ Digital Telephone lines
Dedicated Connection with High Speed DSL connection and Radio Modems.
Millennium CD - Off-the-shelf Retail Internet Service.

- **Web Services**

e-biz, ASP, high-end web site, VPN, LAN, WAN, Internetworking, Internetworking etc.

- **Fax-to-Fax Services**

- **VSAT Services**

Infocom is the only VSAT provider in the country to provide regular SCPC and more cost effective TDMA/ TDMA and DVB connections. Infocom is the authorized representative of Loral Skynet which is one of the largest Service Providers in the world.

- **Money line Telerate Service**

Authorized representative of the premier financial Information service provider of the world.

- **Software Solution**

- **Multimedia Solution**

- **Connectivity**

Internet connectivity from LORAL SKYNET directly to HAWAII & San Jose to 1st layer Network Access Provider (NAP). This effectively makes us the second layer ISP able to reach U.S Internet highway.

- **Access Routers**

We use CISCO 3600 series router data, voice, video, virtual private networks & multi-protocol data routing.

- **Remote Access Servers**

- **Servers**

Dell PowerEdge 2300s, 4200 and 1300 servers - Pentium III 700 MHz processors.

- **Operating System & Internet Software**

Operating System - Red Hat Linux (RHL)

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MERCANTILE

Mercantile Group of Companies

Mercantile Office System, Mercantile Communications, Mercantile Traders, Mercantile Software, and now Mercantile Solutions are all success stories in the Nepali IT industry. Mercantile can be credited with the first mass introduction of PCs, and a pioneer in e-mail and Internet industry in Nepal. Mercantile software's Pumori Banking system is also a major success. Many banks and finance companies in Nepal use this banking solution.

Mercantile Office System deals in computer hardware and accessories. They are official distributor for IBM, Microsoft, Acer, Cisco, D-Link, Epson range of computer products.

Mercantile Traders deal in office equipment and supplies and represent Mita range of products in Nepal.

Mercantile software's flagship product is Pumori and the new Pumori Plus, which are used in Nabin Bank, Nepal Bangladesh Bank, Himalayan Banks amongst others.

Mercantile Communications is the pioneering e-mail and Internet service provider in Nepal. It uses VSAT connectivity to Singapore making it one of the most reliable provider in Nepal. The total bandwidth of Mercantile Communication is at 8 Mbps.

Mercantile Communications is also responsible for Nepalnews.com, the most successful Internet web portal of Nepal. With about 8 million hits in a year and news updated as it happens, this website is a biggest success story in Internet web portal.

Mercantile Communications is also a partner in Serving Minds, the first call center operations in Nepal. The call center provides services to companies both in Nepal and abroad Mercantile solutions are another innovative and a first for Nepal. Mercantile Solutions has introduced Nepal's First branded PC – the Mercantile PC, into the market. This PC, is being produced specifically for Mercantile Solutions in chip fabs in South Korea.

Mercantile group directly employees about 250 staffs in all its operations.

For Further Information:
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An Introduction

WorldLink Communications P. Ltd. is a pioneer Internet Services Provider in Nepal with extensive expertise in data communications, Internet connectivity, VSAT networking, wireless networking, software services, ICT consulting, and bandwidth provisioning. WorldLink ranks as the largest ISP in the country in both retail and corporate clients. With satellite earth stations in seven major cities and high speed leased-lines in four others, WorldLink owns and operates the largest private data network in Nepal. We are able to provide end-to-end leased-line or IP VPN data connectivity between these points of- presence (POPs). For data connectivity in remote areas, we have installed VSAT satellite terminals for major hydroelectric projects. For international data and Internet connectivity, WorldLink has two satellite earth stations utilizing two separate satellites for complete redundancy. Our NMS is by far the most advanced in the country utilizing myriad technologies such as Java, Oracle RDBMS, Perl, WAP and GSM to keep our network running at 100%.

Short History

WorldLink is a rare success story. Started in 1995 with a computer and a modem, the company today has a state-of-the-art infrastructure with over 100 employees in fourteen offices through out the country. WorldLink owes its success to its goal of customer satisfaction and retention. Backed by highly capable manpower and a system that ensures customer satisfaction, WorldLink has maintained a very high customer retention rate and earned the goodwill of its customers. In fact, this goodwill saves WorldLink on marketing expenses as most of its new subscribers are referred by existing customers.

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Yomari Incorporated **A Web Solution Provider**

About US

Yomari's mission is to provide targeted cutting edge technology to organizations for whom easy access to or widespread dissemination of information is important. Yomari, Inc. is a privately held company founded in 1997.

At Yomari, we are committed to understanding the unique technological needs of our clients and providing them the best solutions. We have all it takes to succeed: a team of experienced IT professionals with the character and competence to do the job right.

Yomari's solutions to information technology focuses on four fronts: Internet and e-Commerce site designing and hosting, Intranet development, custom application development, and database management. Our expertise lies in designing, developing and deploying high-end sophisticated information systems that need to be accessed and analyzed for mission-critical decision making. See the services section for more information. We also actively maintain our flagship web site, the Nepal Home Page (<http://www.nepalhomepage.com>). When it was started in early 1994, the Nepal Home Page was the first Nepal-related site on the Web. Since Yomari took over the maintenance of the site in 1997, it has continued to be improved and expanded and it remains the premier Web site on information about Nepal. In any given week the site records more than 200,000 hits with more than 6000 distinct visitors from over 50 countries.

Clients

At Yomari, we do whatever it takes to make our customers successful. We measure our success by measuring our customers' success. We are who our customers are. Whether it's designing internet web sites that can deliver international exposure, or building corporate intranet to make internal management of information efficient, or build database applications that will help access and analyze large databases, Yomari is a company like non other - and we've got the customers to prove it. Our valued customers represent some of the most recognized names in Nepal. The list is like "who's who" of Nepali business. It was no easy task to build such an impressive client network in just three years of operations. Yet we did it. It is all about our commitment to deliver above and beyond our customer expectations.

Staffs: Currently Yomari employs 20 staffs.

For More information:

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Yomari Incorporated

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Human Resource Development

Nepal not only boasts of world-class education and training institutes and highly skilled professionals, but also self reliance in software and web development, network design, implementation and administration, GIS and EIS.

The Institute of Engineering (IoE), affiliated to Tribhuvan University, is ranked 3rd by Asian Institute of Technology, Bangkok, based on the performance of its graduates. While IoE has already produced over 250 ICT graduates, total number student intake in the field of ICT higher education in Nepal exceeds 5000 students every year.

There are some 50 colleges affiliated to four mainstream universities in the country providing IT related undergraduate and post-graduate programs and engineering courses such as Bachelor in Computer Engineering (BCE), Bachelor in Computer Applications (BCA), Bachelor in Information Management (BIM), and Masters in Information and Communication Engineering.

There are hundreds of computer institutes throughout the country, including worldwide training centers like New Horizon, NIIT, Aptech, Informatics, etc. A prospective student can today choose from among Windows packages, basic hardware training, complex programming, and sophisticated network and database administration courses. Courses on most of the international certifications of Microsoft, Java, Cisco, etc. are also available. The biggest success of all is this relentless drive – still gaining momentum - to make IT an integral part of Nepal's education system.

The history of computer training in Nepal dates back to the time when foreign experts trained Nepalese on the intricacies of programming an IBM 1401 in 1971. Besides personal efforts to go abroad for education and training on latest technologies, UNDP's TOKTEN program and the regular scholarship from AOTS, Japan for training at CICC has also helped a lot in upgrading the skill and proficiency of Nepalese IT professionals.

Some of the success stories under this group are given here after.

Academy of Information Technology Pvt. Ltd. (AIT)

Academy of Information Technology Pvt. Ltd. (AIT) was established in October 1998 with the mission of contributing towards establishing a knowledge-based society and industry through IT. Managed by a group of dedicated professionals of Nepal, AIT has made tremendous contribution in the development of highly skilled IT professionals and providing IT services to Nepali organizations.

AIT over the years have grown substantially in strength and in revenue as a result of the trust from the public, private, governmental non-governmental organizations in training their executives and employees for the effective and efficient use of IT, IT Consultancy, networking & implementation, development and maintenance of systems software, etc.

1.0 IT education and training

AIT in training offers the most comprehensive, quality hands-on technical training. All the courses are developed and taught by Certified Professional Trainers such as OCP, SCJP, MCSE and MCP who are also actively working in their relative field of expertise. The educational and training programs in AIT have theory classes based on application-oriented modules with a high emphasis on its real life applications. Selected well deserving trainees also work on real time projects undertaken by AIT. The center also provides placement services to its trainees. AIT at present provides education and training to 75 students at a time.

Courses offered in AIT

- Oracle 8i DBA / 9i DBA (with developer 6.0), Networking
- Visual Basic / Windows 2000 / C ++ / Java
- Web developer, web designing, graphic design

2.0 Software Development

AIT Outsourcing was established to deliver high quality software products and be an active partner in our customers outsourcing by offering end-to-end IT solutions. AIT has a competitive edge over others through its ability to provide cost effective and value added business solutions with quick turnaround. AIT has more than 50 experienced IT professionals dedicated to developing system software's. Some of the software are:

- Welfare Management System
- Clinical Management System
- Loan & Payroll Management System
- Personnel Management System

Other services

Professional Technical Services
Network Design and Implementation
IT Consultancy
Hardware training
Data Processing

Some of the clients:

Nepal Telecommunication Corporation
Nepal Electricity Authority
Rastriya Banijya Bank
Mercantile Office Systems
Pilgrims Software Pvt. Ltd.
Himal Power Limited.
World Distribution Nepal Pvt. Ltd.
Employment Provided Fund
Nepal Police
Agriculture Development Bank

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Institute of Engineering (IOE)

The Institute of Engineering was established in 1972 when the Nepal Engineering Institute and the Technical Training Institute were brought together under the umbrella of Tribhuvan University to constitute the Institute of Engineering (IOE). The IOE is devoted to fulfill the national demand of technical manpower in different disciplines of engineering for accelerated development of the country. Besides this, the Institute also offers a wide range of services for the benefit of the public and the private sector.

IOE has about 70 laboratories and workshops and will equipped with computer facilities and are adequate for the purpose of rendering research, consultancy and manufacturing oriented services in wide range of areas. IOE provides Internet facilities through its own VSAT system to all students, faculties and administrative staffs of all its four campuses. All the academic blocks of Pulchowk campuses are linked through campus wide fiber backbone connecting departmental computer facilities with computer center.

Institutional Objectives

1. To produce different levels of engineering manpower for meeting the national aspirations and goals.
2. To perform various research and development works so as to strengthen the national engineering capabilities and solve engineering problems.
3. To offer various types of training, sponsored courses, conducting problem oriented research and providing engineering consulting services.

Departments

Department of Architecture
 Department of Electronics & Computer Engineering
 Department of Civil Engineering
 Department of Mechanical Engineering
 Department of Agriculture

Center and Specialized Units

Center for Information Technologies
 Center for Applied Research & Development
 Center for Energy Studies
 Continuing Education Division
 Institute of Engineering Consultancy Services
 Research, Training & Consultancy Unit
 Center for Pollution Studies

Established two decades back with the vision to create new opportunities of employment in the field of electronics and computer through competent engineers produced by the department, the DECE has succeeded in producing about 1000 Electronic Technicians and 64 Electronic Engineers who have been widely accepted in the industry for professional services, and in different universities for their further studies.

The DECE is equipped with highly sophisticated and precision electronic measuring and testing equipment, a large network of high speed computers and more than 25 qualified and experienced faculties at different levels. The knowledge and experience of these faculty along with the technical strength the department boasts upon not only brings continuous improvement in academic process within the department but also responds to the needs of the fast changing and emerging technologies outside the department as well.

The DECE offers a four year undergraduate program in Electronics Engineering and Computer Engineering. The current intake of the department is 48 students in Electronics and 48 in Computer. The department also offers a masters degree course in Information and Communications Engineering. The department has also enrolled one PhD student.

For More information:

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Kathmandu Engineering College

With the growth in the field of Information Technology and Telecommunications in the decade of 90's a rising demand was seen for engineers related to the field. The Department of Computer and Electronics Engineering was established in Kathmandu Engineering College (KEC) in the year 1999 to cater to this need. This department has now grown to the largest in KEC with over 600 students enrolled.

The Department employs more than 30 full time teachers with backgrounds in Computer Engineering, Electronics Engineering and Electrical Engineering. With over a 100 engineers in Computer and Electronics poised to graduate from the college this year and around 200 engineers next year, we are probably the largest manufacturer in Nepal of ICT manpower trained in the disciplines engineering.

After graduating from KEC, the computer engineers will have gone through courses in diversified ICT areas such as Database Management, Data Structures, Microprocessors, Software Engineering, Computer Networks, Artificial Intelligence, Computer Graphics etc. Similarly, the curriculum for electronics engineering students comprises many telecommunications based courses vital for ICT development such as Analog and Digital Communications, Antennas and Propagation, Optical Fibre Communications, Satellite Communication Systems, Avionics Communications etc. The combination of computer and electronics engineers graduating from KEC will have the capability to become the backbone of total ICT development in Nepal.

To support this wide range of courses undertaken, the Department maintains five well-equipped computer laboratories and three electronics/electrical machines laboratories. The electronics laboratories are equipped with state-of-the-art training kits and modules for analog and digital communications, antennas and propagation, microwave communications etc with a large number of supporting equipments such as analog and digital oscilloscopes and function generators. In addition to these, the Department also manages a Research and Development (R&D) division with its own laboratory that allows and encourages students to work on their own projects under the supervision of teachers.

The Department always supports the efforts of students to participate in extra-curricular activities that enhance their skills and broaden their knowledge. The Department had organised 'Software Meet 2000', the first all Nepal software competition, where not only the students of KEC but professional and amateur software developers from all over the country had participated. In keeping with this tradition, this year the department has made arrangements for the final year students to obtain training at various leading ICT companies in Kathmandu.

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Other IT Enabled Services

(GIS/Transcription/Translation/Networking/Data conversion)

GIS was introduced in Nepal with the establishment of the Nepal Remote Sensing Centre in 1973, largely with foreign aid. A large number of government related institutions use GIS today usually with the assistance of international aid and co-operation agencies such as Department of Forestry, Nepal Agricultural Research Center (NARC), Institute of Forestry in Pokhara, Institute of Agriculture in Rampur, ICIMOD and GTZ.

Networking started in the early 1980s with NCC establishing a Novell network with 20 computers. Around the same time, DSI also had a Novell network with 10 to 12 computers and a UNIX network with 10 terminals. For many years institutions in Nepal have primarily preferred Novell over other, and many financial institutions and newspaper publishers continue to use this system.

With the Cisco certified courses being offered in Kathmandu these days, the designing and maintenance of networking offers a big scope in Nepal. Nepal's IT sector has branched out of web development services. Today it offers IT-enabled services such as transcription, mainly medical transcription, digitization, call centers and content management. IT-enabled services employ thousands of bright young professionals, primarily in urban centers. Nepal's ITC industry, powered by highly skilled albeit relatively cheap labor pool, continues to draw attention from domestic and international investors.

Some of the success stories under this group are given here after.

GeoSpatial systems

GeoSpatial systems Pvt. Ltd. was established in the year 1997 with the mission to offer enhanced GIS and IT services to meet the demand of new millennium. GeoSpatial Systems Pvt. Ltd., a joint venture between Nakanihon Air Service Co. Ltd. and Arbex Corporation, both of Japan, and a few enterprising Nepalese promoters, specializes in the commercial application of the Geographical Information System (GIS) Technology. The Company is particularly involved in the large-scale production of digital maps.

GeoSpatial are making success to generate some benefit to the country, to people and opportunity to import the technology from foreign country. They are helping to Expand knowledge in related area, and are giving employment opportunity to the general people and also to know the world and their progress and strengthening human relation, culture and language with the investors. The factor that led to the success is "a relationship of mutual trust with each other".

Services provided by GeoSpatial

1.0 Map Digitalization

Geospatial Systems are providing a map digitization services to its potential clients. This new technique uses raster map as a background so that the possibility of missing data and data errors while inputting the features is reduced to a minimum. In an effort to provide a quality service, GeoSpatial offers a month-long, comprehensive basic GIS digitization training courses to produce capable manpower to prepare GIS database.

2.0 Photogrammetric Service

GeoSpatial offers a photogrammetric service, process of deriving 3D digital data directly from aerial photographs using stereoplotter (enables the operator to view and work on 3D images). The accuracy of the digital data produced by this technology is very high.

3.0 Other data updating

An orthophotos is a digital photograph in which objects are shown in their geometrically corrected true coordinate systems in the map. It is a visual map that can be used as base map in studies pertaining to various fields like forestry, surveying, geology etc. GeoSpatial is planning to launch this service from its own site.

Services provided by GeoSpatial systems

- Digitization
- GIS database preparation and application development
- Attribute entries in existing database
- Scanning/plotting
- Web mapping

Some of the clients:

1. Nakanihon Air Services Co. Ltd., Japan
2. JICA Nepal

Contact Information:

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E-mail: info@geosp.com • URL: www.geosp.com (Under Construction)

Meiken Digital Technology System Pvt. Ltd.

Meiken Digital Technology System Pvt. Ltd.(MDTS) has been established with the vision of providing digital and customized mapping products. MDTS is a joint venture company between a 30 years old experienced Japanese Investor Meiken Consultants Co. Ltd. and the Pacific Group. The main focus of the company is to export, assuring hi-quality expertise with full client satisfaction.

The Pacific Group has also proved its strength in areas as varied, from supplying equipment for engineering to office automation, to construction, telecommunication and agriculture.

Meiken Digital Technology System aims to be a leader in the field of exports of Information Technology based services. It intends to make an impact in the Nepalese economy, not only by providing employment to the educated and trained, but also by generating foreign currency.

Some of the clients:

1. Meiken Consultants Co. Ltd., Japan
2. Original Engineering Consultants Co. Ltd., Japan.

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SME Center Nepal

Nepal Industrial Development Corporation (NIDC), Information Technology Branch took lead role in taking forward the Nepal SME Center among the 34 member countries of Association of Development Financing Institution in Asia and the Pacific (ADFIAP). The Internet portal (www.smecenter.com) for SMEs of 34 Asia and Pacific countries was initiated from Nepal by launching the portal during 23rd Annual Conference of ADFIAP held in Kathmandu on 3rd May 2000. The SME Center launching session was graced by Chief Executive / High Ranking Officials

of 43 Development Financing Institutions of the Asia and Pacific countries. The technical launching was carried out by then minister of Industry and Commerce, Mr. Ram Kirshana Tarmakar.

Success Factors

National

- Promoting Nepalese Small and Medium Enterprise (SMEs) in the global market place
- Addresses greater perceived need to promote national SMEs for social and economic boost
- Access to rural SMEs (without Internet access) to International market via NIDC
- Overwhelming response from local SME holders (CAN InfoTech 2000 / 2001)
- Creating e-business awareness among national SMEs

NIDCs Internal

- No upfront cost for NIDC
- Utilization of existing resources
- Converting NIDC IT Branch into a profit center

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Profile of IT Professional Forum

Introduction

Conceived in 1998, IT Professional Forum is a team of well established IT Professionals of Nepal in various sectors of Information Technology, who have come together for a collective effort for the betterment of the professionals who are in IT, and for the IT industry as a whole. Formally registered at the CDO Office, Kathmandu as a Non Government Organization, the Forum is already involved in various activities such as Tech Talks on IT Development, Y2K Test, Highly Professional Software Training, Curriculum Development and Review for Computer Engineering, and other Computer Training Programs. More importantly, it is designing a Quality Certification Test for the computer professionals, "The IT Proficiency Test" This test aims to be the common measuring instrument for the wide range of IT Professionals, who are seeking jobs at IT organizations working in different arena.

Objectives

1. To play a catalyst role for the IT lead development of Nepal.
2. To provide platform for IT knowledge sharing among national and international IT professionals
3. To explore international market for Nepali IT industry
4. To provide the service to the nation by offering Quality Certification in the IT.
5. To advise policy makers and industry in IT related issues
6. To represent IT Professionals of Nepal

Executive Committee

President	:	Suresh Kumar Regmi
Vice President (Internal Affairs)	:	Mahesh Singh Kathayat
Vice President (External Affairs)	:	Khusbu Sarkar Shrestha
General Secretary	:	Jyoti Tandukar
Treasurer	:	Lochan Lal Amatya
Secretary	:	Rajesh Shakya
Executive Member	:	Shreeram Nath Regmi
Executive Member	:	Bal Ram Pandey
Executive Member	:	Shashi Bhattarai
Executive Member	:	Bhushan Shrestha
Executive Member	:	Prasant Shrestha
Executive Member	:	Raju Shrestha

Advisors

Dr. Binayak Bhadra
Mr. Gajendra Singh Bora
Mr. Pramod Sagar Singh Pradhan

Activities

Talk Program on VRML, and demonstration of Virtual Reality Sites

This 3 hour long talk program was conducted by Paniaras T. Yannis from the US at Cybermatha Tea House. In his talk program, he introduced the audience to the world of VR, which was for the first time for majority of the 40 audience. The equipment and infrastructure required for the program was provided by Cybermatha Tea House free of cost.

Y2K Compliance test for Lumbini Bank

Lumbini bank wanted to be ensured of their hardware and software compatibility, so that their transition to the new millennium is trouble free. An on-site compliance test for all their hardware and software was done by Rajesh Shakya and Bal Ram Pandey, and a report of the findings and certificate of the compliance was provided to the bank for a very nominal consultancy fee.

Training on Object Oriented System Design and Development

A 21 day course on the subject was conducted in association with Nepal AOTS Alumni Association from 3rd January to 26th January, 2000. The program was partially funded by CICC, Japan, and was attended by 20 enthusiastic programmers from organizations like NTC, PCS, Computer Advance, CORE, InfoCom, etc.

Curriculum Development and Review for Computer Engineering at IOE

An extensive one week exercise on the Curriculum Development and Review for the B.E. in Computer Engineering Course being offered at the Institute of Engineering was done during the first week of July. While Rajesh Shakya was representing ITPF, Lochan Lal Amatya was representing CAN, and Shreeram Nath Regmi was representing IOE in this committee coordinated by Jyoti Tandukar.

Curriculum Development for CTEVT

Mr. Suresh Kumar Regmi is representing IT Professional Forum at CTEVT (Council for Technical Education and Vocational Training) for the curriculum development work at CTEVT for computer training.

Design of IT Proficiency Test

The main objective of The IT Proficiency Test (ITPT) is to examine the proficiency of the candidates in various topics of IT and help the employing organizations and other institutions in knowing examinee's level based on an unified test. The purpose is to standardize the level of proficiency of IT Skills & Knowledge.

Report on IT database creation, Need Analysis and Work Plan

Consultancy was provided to Ministry of Science and Technology (MOST) for doing the requirement analysis of the national IT database for Nepal and developing a work plan.

Consultation, Documentation and Advocacy regarding Draft IT Bill

This is The Asia Foundation Project on the Study and Analysis of “Electronic Transaction and Digital Signature Act” (Draft) and related Acts and Regulation to identify the weaknesses or/and strength relating to E-commerce, Intellectual Property Right and Voice-over Internet Protocol (VOIP) and publish the successful IT products and IT enabled services. This project was completed in December 2002.

e-Procurement in His Majesty’s Government of Nepal

ITPF signed an agreement with The Asia Foundation to study the awareness level, rules & regulation, procedure & practices, accounting & auditing in HMG Offices as well as Suppliers establishment and lobby enactment of encouraging rules & regulation, accounting & audit principles and simplify procedure & practices for implementation of e-Procurement in the country. The project will be completed by the end of September 2003.

IT Professional Forum

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