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Nepal

Sushil Pandey and Basanta Shrestha

Legend: 2003 — 1995 · · · · · global average
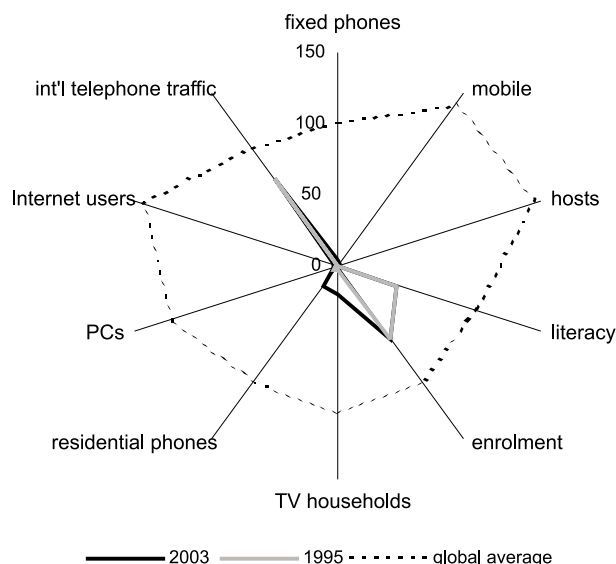
Overview

Nepal formally accorded priority to the development of the ICT sector with the launch of IT Policy 2000. Unfortunately, judging from the performance of the sector over the last few years, it is fair to say implementation of the policy remains slow and many actions stipulated in the policy remain just words on paper. However, some of the key national initiatives to develop the ICT infrastructure, such as the construction of the first IT park and the information superhighway, are on the verge of completion. The commissioning of these initiatives, occurring in tandem with the return of an encouraging environment for foreign investment, should boost activities in the ICT sector over the coming years.

Recent efforts such as the licensing of private rural telecommunications operators, as well as the liberalisation of the telecommunications market, are excellent examples of enabling initiatives undertaken by the government. The establishment of telecentres is also very much welcomed, although the pace is much slower than desired. The Internet has made a difference to the lives of many people in Nepal, thanks largely to the bold initiatives of the private sector, which took the lead in introducing Internet services. Over the past few years, government departments have shown an increasing awareness about the potential of ICT, and they are establishing a growing presence on the Web. The government finally enacted the long-awaited Electronic Transactions Act in 2004. The passage of the bill is expected to spur the growth of e-commerce and other forms of online transactions. However, the current unsettled political situation in the country may curb this growth. Indeed, the most crucial factors for advancing the ICT sector may be the security, peace and political stability of the country.

Local online content

The number of local websites has increased substantially. English is still the main language used in online content. The main types of content found at these websites are news and current affairs, tourism, and government information. Nepali content can also now be found in any topic, ranging from agriculture, sports and food to culture, music and jobs.

It is encouraging to find a new government portal site at *http://www.nepalhmg.gov.np* that provides links to the websites of all government ministries, departments and agencies. Still, the URL for the portal could be simplified to *http://gov.np*, in the manner of the portals of many other governments in the region.

Among the notable local websites is the pioneering AgriPriceNepal (*http://AgriPriceNepal.com*) which provides comprehensive agricultural commodity intelligence to traders. The content is available in both English and Nepali. Another site *http://www.nepalnet.net* ranks the top 51 Nepalese websites. The current affairs and news provider *http://www.nepalnews.com* continues to rank first in this list. The enterprising site *http://www.thamel.com*, which provides information on businesses in the Thamel area of Kathmandu, won the World Bank's Tony Zeitoun Award for successful entrepreneurship and innovation in 2003.

The travel industry has been actively engaged in promoting their business through websites such as *http://www.nepalnature.com*. Online GIS data on Nepal are provided by the International Centre for Integrated Mountain Development (*http://www.icimod-gis.net*).

One of the major issues related to content, both in terms of production and consumption, is the use of local languages, particularly Nepali. Content is only useful if the information offered is relevant to users and presented in a language they understand. The Nepali Language in Information Technology Steering Committee of the High-Level Commission for Information Technology (HLCIT) has been set up to look into these issues and to encourage the use of Nepali online and in software applications.

Online services

E-commerce

The banking industry has made good progress in introducing online services, including telephone banking and, in a few cases, Internet banking. Kumari Bank has also introduced mobile banking. Other companies have generally used their online activities for promotional purposes than for providing more convenient services to customers.

The passage of the Electronic Transactions Act needs to be quickly followed by the development of an online payment system in the absence of an electronic fund transfer system and credit cards. It will take many years for B2C e-commerce to develop into an important economic activity. In the meanwhile, there are numerous business websites where customers can place orders but make payments offline by bank drafts and other conventional forms of fund transfer. The sites *http://munchahouse.com.np* and *http://www.acp.org.np* are examples of those operating this hybrid form of e-commerce. There are also websites offering full-fledged e-commerce, but they tend to be hosted by service providers located outside Nepal. Examples include *http://Dhukuti.com*, *http://eshopNepal.net* and *http://nepalshop.com*.

The Rural–Urban Partnership Programme (*http://www.rupp.org.np*) runs a B2B website (*http://www.b2b.com.np*) to promote business transactions among entrepreneurs. The programme also aims to establish regional linkages among 12 partner municipalities in the country.

Among the niche products and services that Nepal could market via e-commerce to consumers overseas are handicrafts, pashmina fabric, ready-made garments, carpets, herbal products, spices, hotel and tourism services, and software development and IT-enabled services.

E-government

The Rural–Urban Partnership Programme is supporting 11 partner municipalities in adopting the e-government model that was successfully implemented in Bharatpur. The Bharatpur e-government initiative was reported in the last edition of this publication. E-government is one of the most promising uses of ICT which will benefit the people. The success of its implementation in one municipality indicates that it can be introduced to other areas of the country as well. The HLCIT is also working with various ministries to develop online applications for issuing citizenship certificates, driving licences and passports.

Industries

According to an estimate of the Computer Association of Nepal, the volume of business in the ICT sector has exceeded Rs 1 billion (US$13.5 million). This total comprises services, training and education, software export, hardware sales, network integration, and consultancy. The ICT sector in Nepal has not been officially classified as an "industry" and therefore does not receive the benefits that the government accords other manufacturing industries.

Hardware manufacturing

There is very little hardware production in the country. Mercantile PC is the only branded computer being manufactured in Nepal which is ISO 9001 certified. There are, however, now a good number of local companies that assemble PCs from imported parts. The tariff on ICT products is presently fixed at 5 percent but will be completely removed by 2010 in line with WTO membership requirements.

Software origination and export

The IT policy set a target of Rs 10 billion (US$135 million) for export of software and related services to be achieved by 2005. There is little hope of achieving this ambitious target. Merely riding on the waves of progress made by neighbouring countries on software development is not going to help Nepal. Recent analysis indicates that these countries have been successful because their software houses have acquired international software standard certification. This is certainly one of the strategies that can be adopted to boost Nepal's software export capacity.

There are a small number of Nepalese companies exporting software. Very recently, Hi-Tech Valley, an established firm, became the first software company in the country to acquire ISO certification. Achieving such international standards is crucial for attracting foreign investment in software production and export. Entrepreneurs have also conceded that the country lacks highly specialised IT personnel to help expand Nepal's software development business.

ICT education and training services

The rapid growth in the number of IT colleges in the country between 1999 and 2004 has not led to a corresponding increase in students. The colleges are experiencing a significant decline in enrolment recently. They are finding it increasingly difficult to attract students, as new employment opportunities for graduates are not being created. The number of unemployed IT graduates has risen considerably. One estimate projected that Nepal would have a surplus of 3,000 IT graduates by the end of 2004 and an additional 4,500 by 2005. The lack of standards and quality control has also emerged as an issue in ICT education. The country now appears to have sufficient skilled IT workers; what is required is perhaps quality workers.

IT-enabled services

Nepal has the potential to export IT-enabled services and bid for outsourcing contracts from US and European companies. The country offers cost advantages, a 12-hour time difference with the USA, and a sizeable pool of English-speaking and computer-literate workforce. These are attributes shared by successful outsourcing centres located in neighbouring countries such as India, China and the Philippines. The services which Nepal can export include medical transcription, call centres, data entry and processing, website development, and data conversion.

There was much hype a few years ago over Nepal's prospects in providing IT-enabled services. A number of companies were started in the country to provide these services. However, it is sad to find very few of them still operating. Many of the companies have closed down, particularly those offering medical transcription services. The government had signed an agreement with Unlimited Numedia, a private medical transcription company, to train workers in anticipation of the expansion of this industry. However, with the setback in this sector, this training contract has also run into problems. Fortunately, the two call centres, Himalayan Telecommerce and Serving Minds, are doing reasonably well.

The reasons for the failure of ICT services companies are several. Foreign companies seem to have difficulty with Nepal's labour laws and foreign direct investment regulations, besides having concerns about security in the country. It is also difficult to retain workers, as many young ICT workers are attracted by the higher salaries and better career prospects in other countries. Furthermore, as noted earlier, the ICT sector is officially not an "industry" yet and so is not entitled to the benefits enjoyed by manufacturing industries.

The ICT services sector needs to be developed, as it not only brings in foreign exchange for Nepal but also provides employment to the youth. Policy makers and entrepreneurs have to work together to make use of this opportunity.

Service providers

A reflection of the recent past shows that it is the ISPs who have made the greatest difference to the ICT sector in Nepal. The private sector was the first to provide Internet access in 1995. Since then, the number of ISPs has grown together with the number of users. At the same time, new technologies have been introduced into the market. Broadband is the latest of these technologies, and it has attracted many experienced Internet users in the cities. The timely deregulation of the use of VSAT helped to bring about this growth and, especially, to create a competitive environment. One of the most attractive elements of the Internet revolution is the rapid fall in the cost of access. In 1995, when the Internet was

first introduced to Kathmandu, Mercantile Communications Pvt Ltd charged Rs 15 (US$0.20) per minute; it now charges Rs 15 per hour. Similarly, when unlimited Internet access via dial-up was introduced in Nepal in 1998, it cost Rs 5,000 (US$70) per month; the rate has since been reduced to as low as Rs 750 (US$10) per month. The number of Internet users in Nepal has soared as cyber cafés quadrupled in number and their charges fell.

Broadband Internet access is being launched by private sector ISPs in Kathmandu city. There are also plans to provide Internet access and cable television through fibre optic networks. The Nepal Telecommunications Authority (NTA), the regulatory body and licenser, has already awarded Subisu Cablenet Pvt Ltd a licence to operate an Internet access service via a fibre optic network. More companies are waiting for a similar licence. NTA is also planning to provide ADSL to ISPs. This should help ISPs to enhance their quality of service.

There are currently 22 ISPs operating in Nepal, and the country's total bandwidth is about 25 Mbps downlink and 10 Mbps uplink. Studies carried out by the Computer Association of Nepal and the Internet Service Provider Association of Nepal reveal that there are about 200,000 Internet users in the country, of which about 40,000 are subscribers. In 1999, there were about 290 domain names registered under ".np"; this total increased to close to 4,600 at the beginning of 2004.

The launch of the local Internet exchange (*http://www.npix.net.np*) has facilitated the exchange of local traffic among the principal ISPs. This has benefited the ISPs by freeing up bandwidth while providing users with faster download speeds at the same time.

Key national initiatives

IT park

The government has handed over the responsibility of constructing and operating the first IT park to the newly established HLCIT. Efforts are being made to open the park by the end of 2004. Completed buildings in the park have been allocated to small and medium ICT enterprises. Large companies will be provided with plots of land connected to the completed infrastructure for constructing their own buildings and facilities to meet their particular requirements.

East–west information superhighway

Much of the work involved in laying 880 km of fibre optic cable along the East–West Highway has been completed. It is one of the few projects included in IT Policy 2000 to be completed within the stipulated time and is undertaken with assistance from the Indian government. Completion of the fibre network, locally referred to as the National Information

Super Highway, is expected to trigger rapid growth in the development and deployment of ICT in Nepal.

Rural telecentres

An estimated 85 percent of the population of Nepal lives in rural areas. The latest teledensity figures are 0.16 (0.13 in 2002) for rural areas and 16.63 (14.74 in 2002) for urban areas. Rural areas remain almost totally isolated, without access to telephones and other basic services. Adding to the challenge is the mountainous and rugged terrain of most of the country, making development efforts difficult and very expensive compared with similar initiatives carried out on more hospitable terrain. Private operators are only interested in investing in the profitable urban areas, leaving the responsibility of extending services to the non-profitable, marginalised, rural areas to the government.

Rural telecentres are being established through a number of different programmes. However, the pace of construction is very slow because of security problems in the country. The government, with UNDP support, has set up community information centres in 11 districts to provide rural areas with access to ICT. Additionally, under the Rural–Urban Partnership Programme, rural telecentres have been established in selected village development committees within the 33 rural market centres that this programme focuses on. The Tenth Five-Year Plan, which started in 2003, has set the target of building at least 1,500 community information centres in the country.

There is no doubt that the establishment of telecentres will go a long way in helping to close the digital divide, but at the same time the lack of local content, especially in the national language, must be addressed to render the telecentres useful to the people and their operation sustainable. Telecentres should respond to the communication and information needs of the communities they are intended to serve.

WiFi Internet for yak farmers

Yak farmers in the five mountain villages in Myagdi district and adjacent areas are using wireless Internet technology to keep in touch with their families. They are taking advantage of a wireless network set up in the remote region, where there is no other means of communication. The initiative is based on an innovative idea developed by a local educational pioneer Mahabir Pun and backed by volunteers and donations from people within and outside the villages. It aims at bringing the Internet to this isolated part of the world. Pun is also trying to break the cycle of poverty in his mountain village of Nangi by bringing the villagers into the computer age. He founded Himanchal High School, where he sees the Internet as the way to improve local children's education.

Enabling policies and regulatory environment

IT sector

The experience of the last few years indicates that IT Policy 2000 has been an excellent but perhaps overly ambitious plan that has been difficult to implement. The National Information Technology Centre, set up under the Ministry of Science and Technology (MOST) to act as a policy maker, facilitator and regulator of the sector, has not made much headway in the implementation of its mandate. Insufficient resources were allocated to the centre for its activities. There has also been a lack of coordination between the Ministry of Information and Communications (MOIC), which is entrusted with the oversight of telecommunications, and MOST, which is the coordinating agency for IT. The government, recognising these shortcomings, formed HLCIT under the chairmanship of the Prime Minister, who is assisted by a full-time vice chairman and secretary together with nine members. This new commission has now replaced both the National Information Technology Development Council under the chairmanship of the Prime Minister and the National Information Technology Coordination Committee under the chairmanship of the Minister of Science and Technology. The National Information Technology Centre will now serve as the secretariat of the commission, and its executive director as the member secretary of the commission. This new institutional arrangement will hopefully bring the desired benefits to the overall ICT sector. It may also be worthwhile to explore merging MOST and MOIC for the purpose of bridging the existing coordination gap between these two ministries to raise efficiency.

The IT policy has generally not been effective in attracting foreign investment in ICT. It lacks an explicit clause providing incentives for foreign investors in areas such as IT-enabled services and software development; it only promotes foreign investment in infrastructure development. According to the government itself, many of the policy initiatives contradict current government rules and regulations, making implementation rather difficult. Unless a coordinated and comprehensive approach is taken to address these issues in an integrated manner, the government may not be able to create a conducive environment for foreign investment in this sector. In a major change of its foreign investment policy, the government is preparing to open up the secondary market, including ICT, to foreign investors. This is viewed as an encouraging move. Additionally, a one-point service will be established in the Department of Industry to assist investors; and with Nepal now formally a member of WTO, the telecommunications sector is opened for foreign direct investment. WTO membership will also have implications on tariffs for imported ICT products.

In spite of the challenges, there is some positive progress in the implementation of the IT policy. The first IT park will start operation soon, and the east–west fibre optic cable is nearly completed. The policy has also created awareness of the potential role of ICT in the government. Many government departments have established their presence on the Web to provide information on their mandate and activities. The next step should be to provide online services such as bill payment, revenue collection, and procurement.

The Electronic Transactions Act was passed after pending in the House of Representatives for three years. The bill provides for the recognition of digital signatures and legalises electronic documents. It also lays down laws for computer-related crimes. However, there are gaps in the act: it does not address many important aspects of e-banking transactions nor provides for the modes of online payment. These omissions aside, the act is widely seen as a very important step forward in promoting the use of ICT. The next step is to develop the regulations and bylaws needed for its smooth implementation.

Finally, it is time to review IT Policy 2000 comprehensively by evaluating its failures and successes as well as its weaknesses and strengths. This review should identify new strategic directions and help in the revision of the policy to make it more effective and result oriented.

Telecommunications sector

The Telecommunications Act 1997, the Telecommunications Regulations 1997 and the Telecommunications Policy 1999 are the main policies determining the legal and policy framework for telecommunications in Nepal. Their enactment enabled the liberalisation of the telecommunications sector and brought about the positive changes that followed. The decision made in the Telecommunications Policy 1999 to allow ISPs to arrange their own international connectivity using VSAT technology proved to be a pivotal development. Nepal is the first nation to adopt this strategy in South Asia. VSAT helped ISPs to increase their international Internet bandwidth, raise their quality of service and improve their competitiveness while at the same time significantly reducing their costs and hence their charges. It would not be overstating the case to say that this early step towards market liberalisation transformed the ICT market.

In a major attempt to further liberalise the sector, MOIC in 2004 amended the 1999 policy to promote private sector participation and competition in all market segments. The new policy aims at ending cross-subsidies and privatising the Nepal Telecommunications Corporation (NTC). It will phase out the licence regime, thus removing the limit to the number of licences issued, by the end of 2004. This revision also paved the way for Nepal's accession to WTO.

The licensing of a private operator to roll out services in rural areas was another welcome initiative approved in 2003.

In the same year, Nepal saw United Telecom Ltd, the first private telecommunications operator in the country, launch a basic telephone service based on WLL technology, marking the end of a three-decade monopoly by the state-owned NTC. Applications from new private mobile phone operators, who will also eventually compete with NTC, are also being considered.

Most importantly, NTC has been restructured as a new company with a new name – Nepal Telecom – with the government slowly withdrawing from its management. This is a momentous step forward by the country. The company is now an autonomous entity, with full independent authority to make its own decisions. It plans to sell shares in the company to the public and transform itself into a publicly owned enterprise.

The presence of multiple operators and the increase in private ownership of enterprises are likely to bring the same advantages and spark the same degree of growth in the telecommunications sector as those triggered by VSAT in the ISP and Internet market earlier.

The government's efforts towards universal access, a multi-operator environment, fair competition, and simplification of the licensing process are all positive steps that are much welcomed. However, the rapid liberalisation along with the sector's evolution into a multi-operator environment has rendered the job of regulation much more complex. The promotion and maintenance of robust competition will require effective regulatory oversight. This is where policy makers and the telecommunications regulatory body, NTA, need to proceed cautiously. The rapid pace of change in the sector is in the meanwhile making it difficult for newer members of the industry to keep abreast of the changes. This trend will undoubtedly continue and will require frequent review of policies to ensure that they remain current.

Open source movement

GNU/Linux and software such as OpenOffice suite are attracting interest in Nepal. The non-profit private library Madan Puraskar Pustakalaya is coding and developing a version of Linux in the Nepali language. There is now an active Nepalese mailing list on Linux. However, there is no official policy on open source software. Users and interested software professionals in the country are forging international partnerships on open source solutions through South Asia Partnership Nepal, Bellanet, and other institutions and groups abroad. The majority of local ISPs are using open source software in their operations.

Research and development

Madan Puraskar Pustakalaya, in collaboration with UNDP and MOST, has completed its font standardisation project and produced a Unicode-based Nepali font. The new font

has introduced many possibilities to Nepalese users in disseminating information and communicating in Nepali using ICT. Additionally, the library is representing Nepal in the PAN Localization project (*http://www.panl10n.net*), a regional initiative aimed at developing local-language computing capacity.

Trends

It is hoped that the new IT commission will set new directions for the overall ICT development of the country. Progress on two fronts should help the efforts of HLCIT. The completion of the IT park will help to attract foreign investment in software development. Likewise, the completion of the east–west fibre optic cable is expected to increase the deployment of ICT in Nepal. It will serve as the backbone for the expansion of telecommunications services along the East–West Highway, enabling fast and reliable transmission. The fibre optic cable connection to Lhasa, Tibet will provide the country with additional bandwidth for international access.

Nepal's mobile phone density was about 0.46 percent in 2004 compared with 0.09 at the end of 2002, while fixed-line density increased from 1.42 to 1.64 in the same period. The government aims to raise fixed-line density to 4 by 2007. The ongoing laying of fibre optic cable from the eastern to the western region, and within Kathmandu valley, will help the development of telecommunications facilities. The new infrastructure, combined with the opening up of the telecommunications sector, makes the target achievable.

The liberalisation of the telecommunications sector is likely to speed up growth, improve the quality of service, and lower tariffs. A larger number of operators are expected to enter the sector offering their services to all market segments.

IP-based networks are increasingly being adopted as alternatives to traditional circuit-switched telephone networks in many countries. The advantages of these networks are well understood by Nepal's policy makers. Thus, it is likely that VoIP will be approved by the government in the near future. Legalising VoIP should make telecentres more popular, as voice communication will enable the people to make better use of the Internet. Perhaps VoIP should be seriously considered as one of the main areas of growth for Nepal's ICT sector.

It is hoped that progress will be made in the development of online modes of payment following the enactment of the Electronic Transactions Act. The act provides an important legal framework to protect consumers and businesses, which will help to build trust and confidence in e-commerce.

No national IT development strategy can be successfully implemented without a sound human resource development programme. The country should focus on producing highly skilled workers and professionals with advanced expertise.

Finally, the political and social environment will be an important factor influencing the development of a country. The present uncertainty makes it difficult to forecast accurately the direction in which Nepal is headed.

References

Computer Association of Nepal. *http://www.can.org.np*.

Internet Service Provider Association of Nepal. *http://www.ispan.net.np*.

IT Professional Forum. *http://www.itpfnepal.org*.

Ministry of Information and Communications. *http://www.moic.gov.np*.

Ministry of Information and Communications (2002). Telecommunications Policy. *http://www.moic.gov.np/telecom_policy_2060.htm* (in Nepali).

Ministry of Science and Technology. *http://www.most.gov.np/most_final/index2.htm*.

National Planning Commission. *http://www.npc.gov.np*.

Nepal Telecommunications Authority. *http://www.nta.gov.np*.

Nepal Telecommunications Corporation. *http://www.ntc.net.np*.

Nepal Telecommunications Corporation (2004). *Management Information System Report*. Kathmandu.