



Only one-and-a-half years ago the government of Bhutan was reluctant to allow TV and Internet access into the country, but now it is determined to turn Bhutan into an IT-exporter. What happened?

Rogier Gruys reports on the advance of Information Technology in the land of the Thunder Dragon.



Information Te

Propelling an Himalayan Kingdom



chnology in Bhutan

into the Information Age

Every morning Laxmi Subba logs on to E-groups, a free Internet mailing group service, to check the status of Cyber-Bhutan, Bhutan's first electronic mailing list. So far nearly 60 computer specialists in Bhutan have subscribed to the group; they will use the forum to exchange views, get answers to technical questions, and share ideas.

Cyber-Bhutan is one of many initiatives that the Division of information Technology (DIT) a newly created Division under the Ministry of Communications, has started to promote IT in Bhutan. Housed in a simple building among the cornfields just outside Thimphu, its staff are trying to keep up with the rapid pace of developments in Information Technology in Bhutan.

For centuries, Bhutan has been isolated from the outside world – until the early seventies, few outsiders had ever set foot in the small Himalayan kingdom. Even after it carefully opened its doors to the outside world, the government resisted the introduction of TV and the Internet. Finally, to celebrate the 25-year reign of His Majesty on June 2 of last year, it introduced Internet in Bhutan, on the same day as TV. Many people predicted that the Internet would just be another information source; they didn't expect it to set off a surge of interest in computer technology in general.

Before the introduction of the Internet, there were about 2,500 computers in the country, but few of them were

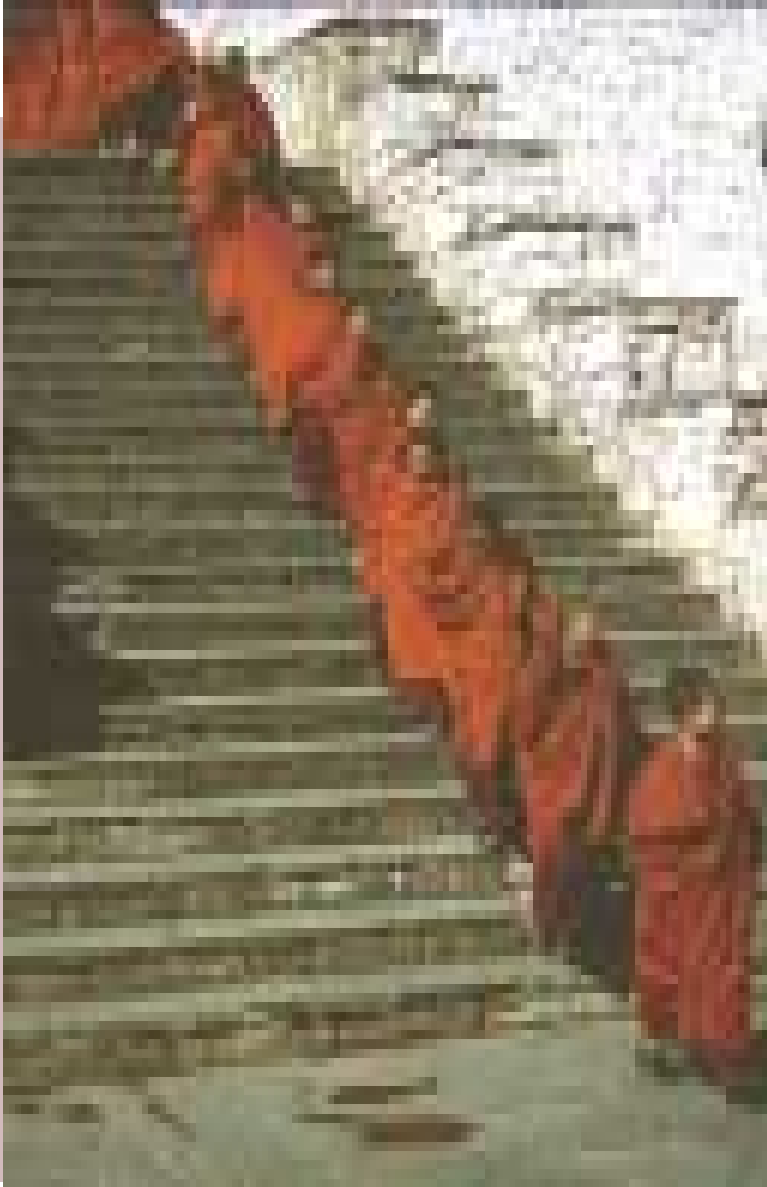


linked together. Even fewer were used to share information. Yet, as soon as the new connection to the information superhighway was introduced, officials started to think past a simple link to the Internet, and considered all aspects of IT.

Around the same time, the government's Computer Service Center, working with a Danish firm, published an IT strategy for Bhutan, which included a long list of initiatives to turn Bhutan into an IT-savvy country. The government heeded the strategy's recommendations, and replaced the Service Center with a new Division to coordinate all IT activities in

the country. Meanwhile, ministries started drawing up plans to link their computers into networks, and were thinking of ways to connect their regional offices in the districts. Since then, five of the seven ministries and many other government agencies have installed networks and Internet connections.

When DIT came into existence on the first of January of this year, it had to catch up, says Sangay Wangchuk, its acting head. Agencies wanted to jump onto the bandwagon of IT immediately, and didn't want to wait for DIT to set policies or standards. Half a year later,



DIT is catching up, and Wangchuk and his staff are now busy preparing new standards and policies. They just issued proposals for standardization of software across the government, reduction of import tax on computers, and improved tender procedures. More importantly, DIT staff try to coordinate the IT efforts of all government agencies, and they promote IT among the general public through a weekly column in the national newspaper.

DIT is not alone in its drive to promote IT. The Dzongkha Development Commission is working with a UK-based non-profit organization to

develop the software needed to include Bhutan's national language, Dzongkha, directly into the Windows operating system. This means that by next year users around the world will be able to use Dzongkha automatically in all windows-based programs, without loading any plug-ins. This will make computers and information more accessible to users who don't speak English, and help schools teach Bhutan's national language.

While many agencies are upgrading their hardware, there is still a lack of content for the new computers. Until now most Bhutanese have been surfing websites outside

Bhutan, and chat and e-mail with friends abroad. This is simply because there is a lack of Bhutanese content. At the moment the only Internet Provider, Druknet, hosts only 13 Bhutanese websites. Although there are a handful of sites hosted outside of Bhutan, a lot more sites are needed to attract more customers. Druknet only has around 600 subscribers, and although several users may use one account, there probably are no more than about 1000-1500 actual users. This number is not likely to increase until there is more useful Bhutanese content available.

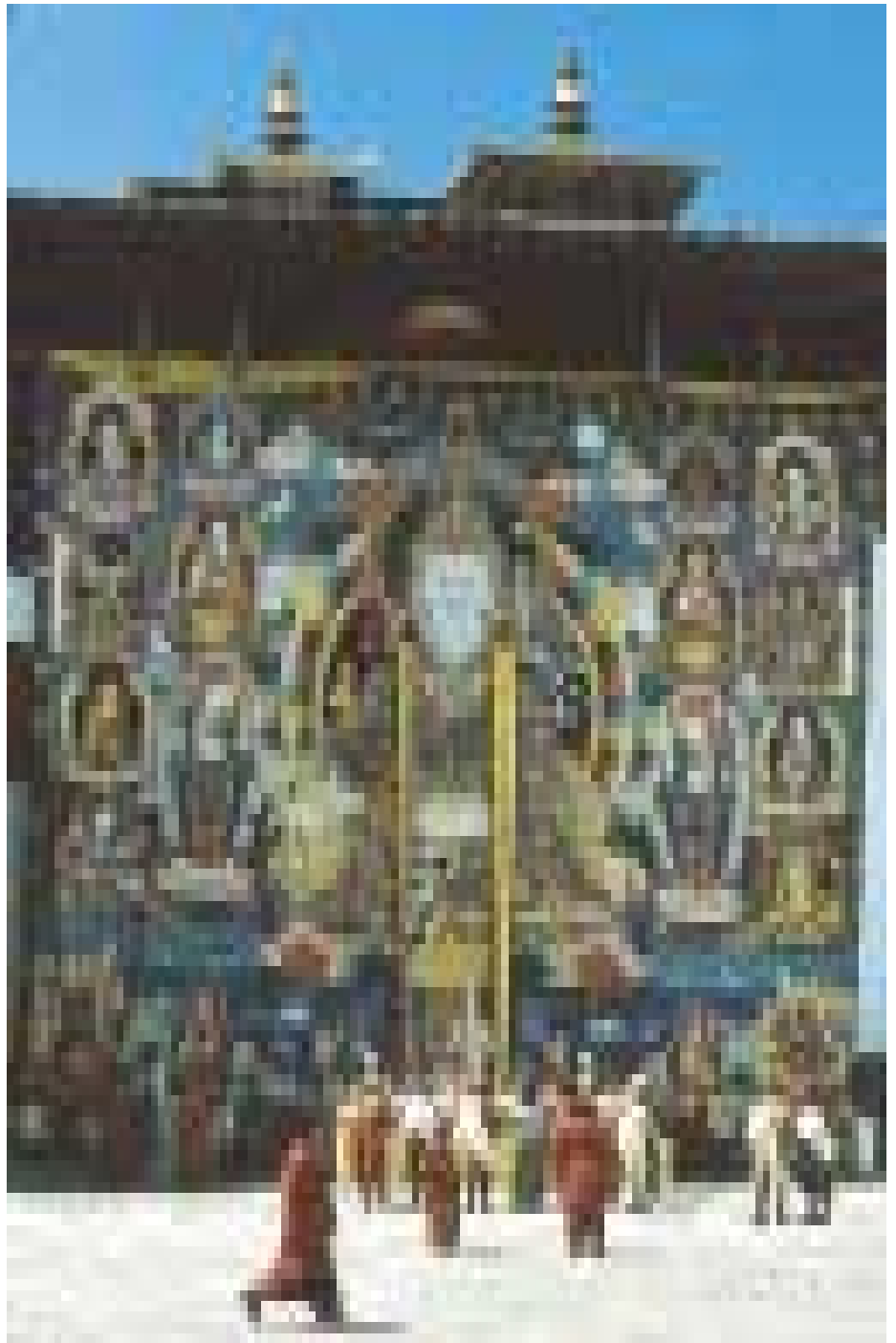
To help various agencies share information, the government is creating a new national data center. The center will not only help in coordination among the various government agencies, but will also help them make the information available to others through the web. This will supplement the newly created Bhutan Center for Geographic Information Systems, which has been set up to promote the use of computer mapping and sharing of mapping information. Meanwhile, DIT is trying to introduce new ways in which offices can use IT to cooperate and work more efficiently. These new, so called groupware solutions will start with simple improvements, such as the use of e-mail, common electronic calendars to plan meetings, and better electronic filing systems. Once these are successful, other more advanced components will be added. Sangay Wangchuk of

Facing page, top : Kids in Laya, a small village three days from the nearest road: when will the information age reach them?

Facing page, below : Preparing for the future: IT Diploma students at the Royal Institute of Management

Left : Young monks in Paro: IT can actually help Bhutan preserve its rich cultural heritage

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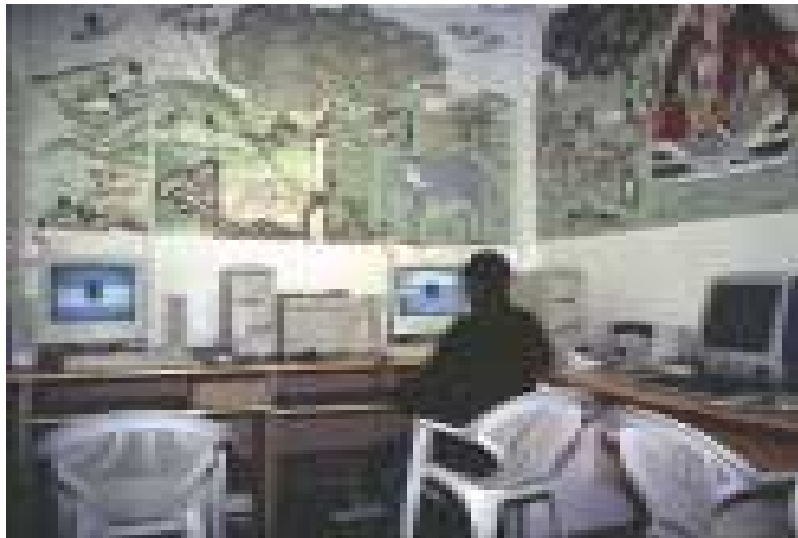
Above : *Thongdrel* in Thimphu: an isolated Himalayan kingdom thrusts itself into the Information Age

Facing page : Traditional art – new technology: Internet Café in Thimphu

DIT believes that only when computers improve users' efficiency, will they be used to their full potential, and will sceptics become excited about IT.

The government has a much grander vision for the future of IT in Bhutan than merely connecting its agencies and sharing information. Landlocked, far from regional

markets, with no major industries, and few export products, Bhutan has everything going against it in a traditional economic model. However, with a small, but well-educated population, a high level of English, a stable political climate, good telecommunications infrastructure (Bhutan has an excellent all-digital telephone system, and local-call access to



Internet anywhere in the country), and ample electricity from its hydro power, Bhutan has decided that export of IT services may just be the right industry for the future.

Bhutan still has a lot of obstacles to overcome before it can compete with other countries in providing IT services. Most critically, at the moment there is a severe lack of skilled IT personnel. In all sectors there is a shortage of trained people. Realizing this, the government is eager to change that as soon as possible through extensive training programs at all levels. The Department of Education is preparing an ambitious proposal to introduce IT education in all of the country's schools in the coming years, while the newly created National Technical Training Authority is planning to certify all IT training institutes in Bhutan, coordinate all IT curricula, and even help one of the technical institutes set up an entirely new computer training program.

The Royal Institute of

Management has already been offering a computer diploma program, and last year it became the host for a Cisco networking academy. This series of courses, sponsored by one of the leading manufacturers of networking equipment, teaches students how to install and maintain computer networks, a much-needed skill in Bhutan. Meanwhile, one of the private computer training institutes in Thimphu is offering a three-year diploma in computer programming, in association with the English Association of Computer Professionals. If such courses prove to be popular, then in a few years' time Bhutan should have a larger pool of IT personnel.

Some are concerned that IT will erode Bhutan's cultural values. With the introduction of the Internet a wealth of new information is available to the Bhutanese, and it will certainly have an impact. But it is certainly not nearly as intrusive as TV, which within its first year already has had a much larger influence on viewers. Because the cost of making local programs is too high, most TV programs will

come from abroad for a long time to come. On the other hand, using IT, up-to-date information can be shared cheaply across the country, and citizens can access information otherwise inaccessible to them.

Moreover, IT can actually help Bhutan promote its heritage, and sell its products. Already several projects are underway to catalogue and reproduce many of Bhutan's Buddhist texts in electronic form. This will make it easier to share the texts, and safeguard them from fires and other disasters. Others are looking to the Internet to sell Bhutan's high-quality hand-woven cloth and carpets.

Donors have realized Bhutan's potential in IT, and several have already supported a number of IT initiatives. Others are keen to join, and help the country in its quest to develop IT. Compared to other countries in the region, they feel Bhutan stands a good chance to achieve its goals.

Can Bhutan indeed transform itself from an isolated mountain kingdom into a first-class user and exporter of IT? Time will tell. The country has to overcome a lot of hurdles before it can fulfill its dreams, but it wouldn't be the first time it tried to achieve a seemingly impossible goal, and succeeded.



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