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INFORMATION TECHNOLOGY IN BANGLADESH

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Bangladesh has a relatively long experience in the use of computers - the first "second generation" computer was installed in 1964 at Dhaka and very soon some of the large banks and industrial concerns started using computers, mainly for accounting and payroll applications. The utility companies (e.g. gas, electricity) also started using the bureau facilities of these installations for their customer billing. Unfortunately, the financial crisis that the country faced immediately after its independence in 1971 did not permit the sustenance of this early lead and lack of maintenance forced the closure of most of these installations.

Although the possibility of export of data entry services and software from Bangladesh has been discussed for over a decade, only a few companies were successful in getting some work from outside. In June 1997, the Government of Bangladesh appointed a Committee (with the author of this article as its Convenor) to look into the problems and prospects of export of software from Bangladesh. The Committee submitted its report in September, 1997. It contained 45 recommendations, both short term and medium term; some of these recommendations have already been implemented and the government has asked different concerned ministries to go ahead with implementing the other recommendations.

Although not properly exploited yet, Bangladesh does have quite a few inherent strengths which can be used as the launching pad for making this country a potential offshore source of Software and Data Processing Services. Some of these advantages are :

- A substantial number of educated unemployed youth force, with ability to read and write English, exists in the country. They can be trained in the required skill (particularly in Data Processing Services) within a short time.
- Quite a few Bangladeshi skilled professionals have been working abroad. They can be encouraged to return to the country and/or collaborate with Bangladeshi entrepreneurs, provided proper environment is created.
- Universities in Bangladesh are turning out an increasing number of graduates in Computer related subjects every year, although the number is much less than the requirement.
- A large number of Bangladeshi students are studying overseas in Computer related subjects.
- A wide range of Hardware platforms, from Mainframe to PC, are available.
- Reasonable skills exist in the following areas :
 - Operating System - Windows, Windows 95, MAC/OS, Novell Netware, Windows NT, UNIX, OS/400.
 - Programming Language - C++, Visual Basic, Visual FoxPro, COBOL, RPG, OOP, J++
 - RDBMS - Oracle, Informix, DB/2
- Bangladesh offers a very attractive cost-effective wage level, viz.

	Bangladesh	India	U.S.A.
Programmers (per month)	US\$ 400 to 800	US\$ 1,200	US\$ 4,500
Data Entry (Per 10,000 keystrokes)	US\$ 3 to 5	US\$ 10	US\$ 30 to 50

The government has taken a decision recently (June, 1998) to withdraw all import duties and VAT from all computer hardware and software. This has brought the prices of computers down to a level affordable by middle income households and sales of PCs have soared during the last few months. A 80-90% annual growth in the number of PCs sold is expected this year.

An Information Technology village is going to be set up very close to Dhaka. The government has already made 18 acres of land available for setting up this IT village. This would be similar to the Software Technology Parks in India. All the infrastructure, including high-speed telecommunication facilities (2 Mbps link) would be provided. These would enable the small companies to move into buildings with readily available facilities. Since this is going to take at least two years, a decision has been taken to initially set it up in an existing building in Dhaka.

In June, 1996 the government decided to allow private companies to act as Internet Services Providers (ISPs) using VSATs. At present, there are about 22,000 account holders with the ISPs (8 in Dhaka and 2 in Chittagong) and the total number of users would be around 100,000. The slow speed of access provided by VSATs (max. 128.8 kbps) is a major constraint. A number of Cybercafes providing e-mail and Internet browsing facilities have been opened in Dhaka city; these are quite popular among the young generation. Public kiosks with internet facilities are also being planned.

BTTB has already established a network for providing Internet connectivity and plans to start commercial service very soon. The proposed tariff rate should make Internet connection affordable to a larger cross-section of public. BTTB is also establishing a fibre optic backbone in the country. They also plan to offer ISDN service very soon using the facilities of the already installed digital exchanges in Dhaka and Chittagong cities.

In order to enable the young entrepreneurs in the IT field, a special fund has been created by the government to provide working capital loan without any collaterals. A venture capital fund is also being set up. The banking procedures are also being amended and simplified to reflect the different nature of software transactions.

Experience of other countries shows that it is very difficult to achieve success in exporting software unless there is a big domestic market. The government ministries and departments are being asked to computerise their activities. A domestic price preference of 15% would be given to suppliers of locally developed software.

Bangladeshi students have recently been participating in international programming contests. For example, in the ACM Inter-collegiate Programming Contest held at Atlanta, USA, last year, the team from Bangladesh University of Engineering and Technology (which had earlier emerged as the regional champions) secured the 24th position, above many of the reputed universities in USA (including Stanford University). In the on-going ACM programming contest on Internet, the performance of Bangladeshi students is among the best - out of the top 25 positions, 17 are now occupied by Bangladeshis. In the Regional ACM Inter-collegiate Programming Contest held in Dhaka recently, teams from Bangladesh (particularly from BUET) performed much better than those from other countries of the region (including India, Sri Lanka and Iran).

Some of the local firms have already succeeded in exporting software, although the total amount is not very large. One firm has been producing CDs with searchable database for US and Latin American clients. CAD conversion work and web-page design work are also being undertaken. Taking advantage of the considerable number of COBOL programmers who were trained in the sixties and seventies, a number of firms are doing work related to the Y2K problem. ERP software is being developed by a local firm in partnership with Microsoft.

The government has placed top most priority to human resource development in the IT field. At present, the annual output of graduates in the IT field would be around 500. The target is to produce 10,000 programmers annually by the year 2001. There are about 24 Universities offering undergraduate degree programmes in IT-related fields. All the four BITs (at Rajshahi, Chittagong, Khulna and Gazipur) are also planning to offer undergraduate degree programmes in

computer science and engineering from next year. The 20 Polytechnics are also introducing 3-year diploma programmes in Computer Technology. In addition, a large number of educational and training institutes, many of them with linkage with foreign institutions, are also offering training courses. One of the major problems faced by these institutions is the shortage of trainers. Recognizing this problem, the GOB Committee (referred to earlier) recommended that BCC should take up a crash programme to train at least 1000 high-level trainers by the end of 1999. Moreover, the absence of adequate physical resources (e.g. computer hardware and software) and weakness in course contents in the training institutions will adversely affect the quality of output from these institutions. An accreditation system is planned to be introduced by the government soon.

BUET was the first institution to offer post-graduate degrees (M.Sc. and Ph.D.) in Computer Science and Engineering. Some other institutions have also initiated research programmes in IT related fields. These include Machine Learning, Pattern Recognition, Speech Recognition, Automatic Translation, Computational Algorithm, VLSI and 3-D Vision. Considerable research work has been done in the use of Bangla in computers. Unfortunately like R&D in other fields of science and technology, there is very little interaction between academia and industry.

Efforts were initiated about 13 years back to introduce computers in schools and colleges. 'Computer Studies' has been introduced as an optional subject both in SSC and HSC examinations. The lack of adequate physical facilities, computers and qualified teachers has resulted in very few students opting for these courses. Experience of other countries shows that teaching of computer programming by incompetent teachers may do more harm than good. Therefore, teacher training is one of the priority actions to be taken.

In order to co-ordinate the computerisation activities of government and semi-government agencies a National Computer Committee was set up in 1983. This was transformed into the National Computer Board in 1988 and the Bangladesh Computer Council was set up in 1989 by an Act of Parliament. It had some initial problems and faced a lot of criticism from the IT community when it became more of a regulatory body, rather than a promotional body as originally envisaged. It is planned to strengthen BCC by inducting more IT professionals, so that it can play a bigger role in IT development in the public sector, particularly in human resource development.

A large number of Bangladeshis are now working in the IT field in different companies in USA and are gradually moving up the organizational hierarchy. The government is trying to get the assistance of these non-resident Bangladeshis (NRBs) in IT development, particularly by giving them incentives to set up software companies in Bangladesh.

The lack of any copyright protection for software has been one of the major deterrents in the growth of software industry. A software Copyright Protection Act has already been drafted and is expected to be enacted very soon.

Although the banking sector had been among the pioneers in computerization in Bangladesh, the present level of computer usage in banks is very low. The foreign banks operating in Bangladesh have taken a lead in computerizing their front office operations. It is only during the last 4/5 years that some of the Bangladeshi banks have started gradually computerising their front office activities and very soon a network of automatic teller machines (ATMs) using VSATs would be set up by the private banks throughout the major towns.

At present, Internet access is available only in a few Universities. The University Grants Commission is setting up BERNET (Bangladesh Educational and Research Network) establishing linkage among the Universities and providing access to the Internet.

One of the major constraints in the initial stages of computerisation of government offices was the non-availability of Bangla software and Bangla fonts in printers. The breakthrough came when the PCs were introduced in the early eighties and very soon desktop publishing using computers became very popular. Bangla version of many of the commonly used packages like word processing, spreadsheet and database management have been developed.

Almost all the IT related developments which have taken place during the last few years are concentrated in the capital city, Dhaka; in other cities and towns, only a small number of computers are being used, mostly for word processing. (The government funded training institute NTRAMS at Bogra, with a few hundred PCs is a notable exception). The danger of increasing the already existing disparity between urban and rural areas looms large in the horizon. In order to enable rural populace to get the benefits of IT, Grameen Communications is trying to develop a system linking the mobile telephone systems (which are already being used in a large number of villages) with solar-powered computers. This would enable the large number of rural educational institutes, offices and households to get the

benefits of e-mail and Internet access. Moreover, some of the data processing services could be rendered by people living in villages, rather than moving into urban areas.

The present government has recognized IT as one of the priority sectors and is providing all support to the private sector to enable them to enter the export market for software and data processing services. Recognizing the bright future of IT, a large number of students, young professionals and businessmen are taking keen interest in acquiring knowledge about computers and its applications. This is reflected in the tremendous enthusiasm generated in the on-going International Computer Show organized by Bangladesh Computer Samity. It is expected that within the next 3 to 4 years, IT applications in Bangladesh would not only spread to various private and public sector offices and industrial units, but Bangladesh would emerge as a regional hub for software development.

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