

# 添 付 資 料

**DRAFT**  
**IT POLICY**  
**of**  
**BANGLADESH**

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ACRONYMS

ADP	Annual Development Program
BCC	Bangladesh Computer Council
BIT	Bangladesh Institute of Technology
BTTB	Bangladesh Telegraph and Telephone Board
CD	Compact Disc
CMIS	Computer based Management Information System
ERD	Economic Relations Division
GIS	Geographic Information System
HRD	Human Resource Development
ISP	Internet Service Provider
IT	Information Technology
LAN	Local Area Network
MOST	Ministry of Science & Technology
MW	Micro Wave
NAPE	National Academy for Primary Education
NII	National Information Infrastructure
PDB	Power Development Board
PTI	Primary Teachers Training Institute
R&D	Research and Development
RD & COOP	Rural Development & Cooperative
TTC	Teachers Training College
UHF	Ultra High Frequency
VAT	Value Added Tax
WAN	Wide Area Network

## 1.0 Preamble

1.1 Information Technology (IT) encompasses the broad fields of data/information processing and communications by means of computer and telecommunications techniques and tools and is being increasingly used for organizational/personal information processing in all sectors of economy and society. This document presents the policy guidelines for the development of the IT sector in Bangladesh.

1.2 A dependable information system is essential for efficient management and operation of the public and private sectors. But there is a shortage of locally generated information needed for efficient performance of these sectors. In order to develop a dependable information system, IT use in all sectors shall have to be accelerated in terms of information generation, utilization and applications. Considering the gravity and importance of IT Hon ' ble Prime Minister has already declared IT as the thrust sector.

1.3 Over the last few years, many nations have taken advantage of the opportunities afforded by IT within a policy framework, laid down guidelines and proceeded with the formulation of a national IT strategy as a part of the overall national development plan. Bangladesh intends to use IT as the key driving element for socio-economic development.

## 2.0 Vision and Objectives

### 2.1 Vision

This Policy aims at building an IT-driven nation comprising of knowledge-based society by the year 2010. In view of this, a country-wide IT-infrastructure will be developed to ensure access to information by every citizen to facilitate empowerment of people and enhance democratic values and norms for sustainable economic development by using the infrastructure for human resources development, governance, e-commerce, banking, public utility services and all sorts of on-line IT-enabled services.

### 2.2 Objectives

2.2.1 Promote and facilitate use of IT in all sectors of the economy for transparency, good governance and efficiency improvement.

- 2.2.2 Develop a large pool of world class IT professionals to meet the needs of local and global markets. ;
- 2.2.3 Promote use of IT by providing special allocations for IT project implementation in the public sector. Train the decision makers in IT use and promote a IT culture;
- 2.2.4 Provide effective incentives for development of IT sector to both local and foreign entrepreneurs;
- 2.2.5 Develop an efficient IT infrastructure that provides open access to international and national networks;
- 2.2.6 Establish legislative and regulatory framework for IT issues like IPR, data security and protection, digital signature, e-Commerce, IT education etc.;
- 2.2.7 Set up national databases that are reliable and accessible to all the people of the country;
- 2.2.8 Set up an IT organization at the highest level to continuously promote and foster IT Industry;

## **3.0 Policy Statements**

### **3.1 Human Resources Development**

Bangladesh must prepare itself to compete effectively in the global IT market. As the demand for skilled manpower in IT is growing world-wide, the country needs to produce a large number of IT professionals. The specific policy statements are:

- 3.1.1 Widespread introduction of IT education in public and private educational institutions is a prerequisite for producing skilled IT manpower. Facilities shall be built to promote IT education and computer aided education in all levels. Donor agencies, non-government organisations and other development partners of the country shall be encouraged to help build the necessary capacity in this area.
- 3.1.2 Universities, Bangladesh Institutes of Technology and colleges, both in the public and private sectors, shall be strengthened to produce IT graduates in four-year Computer Science and/or Engineering courses. Necessary resources will be allocated to these institutions.
- 3.1.3 Out of the twelve Science and Technology universities proposed in the Fifth Five Year Plan, two will be earmarked as center of excellence in IT by giving higher allocation of resources.
- 3.1.4 Establish multimedia institutes to produce skilled human resources to exploit the opportunity offered by the growing multimedia-market.
- 3.1.5 Diploma and Trade courses in IT will be offered in both public and private institutes including Polytechnics. The continual skill upgrading of existing professionals working in public and private sectors shall be ensured by in-service training programmes.
- 3.1.6 The shortage of trained and qualified teachers and trainers for IT education and training is a bottleneck to the HRD plan. To address the issue, IT-Capacity-Building of the Teachers Training Institutes (TTI) including TTCs, NAPE, PTI, RD & COOP will be taken up. To teach the teachers and trainers, intensive post-graduate diploma courses will be introduced in TTIs. Training programs to train and retrain them periodically to keep them up-to-date with the technological progress in the area of IT will be introduced. IT literacy will be a desirable requirement in the recruitment and selection of teachers.
- 3.1.7 As it would be difficult to train teachers in IT in large number using the present infrastructure, deploy virtual IT teachers wherever possible. CD and web based courseware development and use shall be encouraged to promote computer-aided education at all level of education.
- 3.1.8 To address the issue of deficiency in English and mathematics education, a crash programme shall be taken to train teachers. To ensure standard and quality of IT education, a national certification and accreditation system shall be developed and implemented.
- 3.1.9 Take up programs to develop quality IT professionals and skilled personnel to ensure success in the global software and IT-enabled services market. Encourage and support formal and informal sector to adopt internationally accepted standards in training programs and to introduce globally acceptable standards like professional certification examinations.
- 3.1.10 Use the potential of IT for delivery of distance learning to help stretch the country ' s limited teaching resources and ensure quality education to all.

### **3.2 IT Infrastructure**

- 3.2.1 To ensure capacity building of the nation in the field of Information Technology and to attain a sustainable growth of the

IT sector of Bangladesh and to help compete in the expanding global IT market, Science & Technology Ministry and BCC should be appropriately strengthened.

3.2.2. To support the growing demand of the IT sector, appropriate IT infrastructure is to be established immediately. As telecommunication infrastructure is an integral part of IT, so the telecommunication sector needs liberalization.

3.2.3 Development of telecommunication infrastructure should be considered as Infrastructure Development Industries like Development of Road, Electricity Power, Computer/IT Industry etc.

3.2.4. Facilitate development of telecommunication infrastructure at the least possible cost with little or no customs duties during construction of the infrastructure and to earn revenue subsequently from the Services (VAT, Income Tax etc.) it renders to telecommunication and IT industries through these infrastructures.

3.2.5 As telecommunication infrastructure [Telephone Exchange, Towers, Radio/Telephone Transmission Lines etc.] are similar to electric power infrastructure [Generator, Pylons, Power Grid and Gas Transmission Lines], so customs duty & tax etc. should be amended accordingly.

3.2.6 Cellular telephone handsets are being increasingly used as terminals for emailing and other IT uses. Customs duty & tax etc. of cellular mobile telephone handsets should be brought down to the level of computer terminals.

3.2.7 The use of IT and information services should be affordable to the people; and therefore the cost (and hence the price) of carriage. Infrastructure & Services must be provided by a multiplicity of enterprises; some of which like the Railways, Electricity and Gas Companies can easily exploit their under utilised potential to provide quick and less expensive infrastructure.

3.2.8 Bangladesh Telegraph and Telephone Board (BTTB) has resources like land, MW/UHF Towers all over the country, which are under utilized and could be shared with other Private Telecommunication Operators for augmenting Information Infrastructure. BTTB will take the leadership to coordinate with other Public Utility sectors [PDB, Gas, Railway etc.] and make their existing dormant/under utilized infrastructure & resources (land, building, Radio Towers, Power Pylons, Cable Duct etc.) productive. BTTB will promote cooperation between Railways, Electricity Boards, Power Grid Company, Oil & Gas Companies, etc., which have right of way and some infrastructure to build digital microwave and optical fiber based photonic information transport systems for use by information service providers.

3.2.9 BTTB will seek cooperation of Private Licensed Telecommunication Operators to transform the under utilized resources in the public sector into countrywide Information Infrastructure. To this end, BTTB shall make joint venture agreements with Private Licensed Telecommunication Operators where BTTB will make available the Public Sector resources like land, Radio Towers, Power Pylons, Cable Duct etc. on a commercial basis under the aegis of existing rules and practices. The Licensed Private Telecommunication Operators shall provide necessary finance and technology to construct countrywide National Information Infrastructure (NII) for use of all Telecommunication and Internet Service Providers (ISP).

3.2.10 BTTB will increasingly shift its role from Service Provider to Infrastructure Provider to all other Telecommunication Service Providers and ISPs.

3.2.11 Socio-economic development can be accelerated if more people can have access to information. Teledensity is important in this respect and it will be increased to broaden the coverage which will improve the socio-economic condition of the people through IT-related activities.

3.2.12 Basic telecommunication facilities will be extended to the rural and under-served areas to bring the greater mass into the stream of IT activities.

3.2.13 Advanced and new technologies will be introduced to expand the existing network and will be extended gradually to the rural and under served areas.

3.2.14 Telecommunication facility will be made available to every segment of the society and all of the present and emerging services will be provided at an affordable cost.

3.2.15 To provide dial-up Internet access, ISPs face an acute problem with the present capacity of telephone network of the country. This problem will be solved by developing national Internet access platform without affecting the present telephone network.

3.2.16 The Internet facility will be extended to all the district headquarters and subsequently to its adjacent areas. Internet will be provided to the educational institutions and libraries at a subsidized rate.

3.2.17 To ensure public access to information, Cyber Kiosks will be set up in all post offices, union complex, and Upzila complex. Private sector participation will be encouraged to set up these facilities.

3.2.18 To support the installation of ISPs in the country national high speed communication backbone for Internet will be developed and international high speed gateway facilities for ISPs will be provided.

3.2.19 Inter-ISP communication is time consuming and costly as there is no Internet exchange for the country. The problem will be solved by establishing Internet exchange in the country.

3.2.20 An integrated flexible and reliable nation-wide transmission system capable of voice, audio, video, data and graphics transmission will be ensured. National Information Infrastructure will be developed and it will be connected to Global Information Infrastructure through Information superhighway to create, collect and sell software and provide IT enabled services to the world-market.

3.2.21 To improve the quality of present telecommunication services and to help provide value added services analog telephone-switches and transmission link of the existing telephone network will be replaced by digital switches and transmission link immediately.

3.2.22 The bandwidth capacity and availability will be ensured all over the country at a reasonable cost to encourage the growth of Internet, IT industries, e-Commerce and e-Governance and will also help facilitate video conferencing.

3.2.23 Development of local technological capabilities through local IT industry, preferably with state support, will be emphasized. The service component of the IT industry will be conducted by local private firms, possibly in association with foreign firms.

3.2.24 Hi-Tech Zones will be established through technology transfer with the cooperation of foreign companies and non-resident Bangladeshis. Software Technology Park with dedicated and advanced data communication facilities shall be established and software development and export companies will be encouraged to set up offices in those parks at preferential terms.

3.2.25 A central depository for collection and dissemination of IT information and research findings will be developed. This will be done under a network, connecting all university libraries and research organization to this central depository, which in turn will be connected to the Internet.

### **3.3 Research and Development in IT**

3.3.1 Research and development in IT will focus on need-based fundamental and applied research contributing to the improvement of quality and efficiency of the application to our IT industry.

3.3.2 Bangladesh Computer Council (BCC) will coordinate IT R&D activities carried out by the public and private sector organizations.

3.3.3 BCC along with IT industry, will formulate plans to conduct need-based R&D activities in the Universities, BITs and public & private sector R&D institutions and encourage the younger generation in these activities. The industry may fund for R&D activities for new IT products and services through Industry -Academia collaboration.

3.3.4 A central on-line data bank will be established for scientific and technological information which can be accessed by educational institutes and other R&D organisations.

3.3.5 R&D efforts on Bangla text processing, Bangla voice recognition, translation and synthesis will be intensified. This may be extended to other languages.

### **3.4 IT Industry**

#### **3.4.1 Software Industry**

3.4.1.1 To develop and encourage the local software industry, price preference will be given to locally developed software in all public and private sector procurement.

3.4.1.2 The government shall extend start-up financial support to the local software industry. Expatriate Bangladeshi experts shall be encouraged to set up software development companies.

3.4.1.3 The associations of software companies and developers should be encouraged to exchange ideas, experience and organize collective operations such as seminars, training, etc. and take part in trade delegations and trade shows for acquaintance with the international market, trends and establishment of business contacts.

3.4.1.4 The Export Promotion Bureau and commercial wing of mission abroad should take vigorous steps to identify and explore markets for export of software, data entry services and IT-enabled services from Bangladesh, including promotion of strategic partnership and outsourcing opportunities.

3.4.1.5 In case of joint-ventures, the lead firm in all software projects must be a Bangladeshi company, in order to ensure technology transfer and maintenance.

3.4.1.6 An annual target of 2 (two) billion US dollars from earnings from export of software, data entry and IT-enabled services shall be set for the year 2006. The target shall be revised periodically to match the growth of the market.

### **3.4.2 Hardware Industry**

3.4.2.1 Hardware industry often requires a huge capital investment and entrepreneurs shall be encouraged to establish production facilities for components, peripherals and accessories with joint venture cooperation and technology transfer agreements. Foreign owned and multinational companies, who will establish such production facilities in Bangladesh and employ our workforce, shall be offered special incentives.

3.4.2.2 Laboratories in university and other concerned institutions will be set up to develop skilled manpower required to establish and run hardware industry.

3.4.2.3 Since the local market is still small, the hardware industry may target the export market. Dependence on foreign materials should be reduced where possible by giving incentives to local companies and protecting them from unfavourable competition. Local institutions and R&D organizations may also be encouraged for research, design, and manufacturing of specialized informatics equipment.

### **3.4.3 Services Industry**

3.4.3.1 Bangladesh, having the advantage of cost-effective labour, must endeavour for expansion and export of IT-enabled services such as medical transcription, data entry, data processing, call centres etc. at home and abroad.

## **3.5 e-Commerce**

3.5.1 The public and private sector will promote business in electronic form and create an environment in which it will be well secured.

3.5.2 Authentication of the identities of both buyer and seller or the involved parties in an electronic transaction is crucial to promote e-commerce. A certification authority for issuance and management of digital certifications that are needed to secure electronic transactions should be established.

3.5.3 Establish inter-banking payment system in electronic form.

3.5.4 Legal framework to provide the guiding principles, rules and legislation for e-Commerce shall be put in place.

## **3.6 e-Governance**

3.6.1 The Government shall use IT system within the public administration to improve efficiency, reduce the wastage of resources, enhance planning and raise the quality of services.

3.6.2 Government shall implement wide-spread IT systems to provide nation wide coverage and access by any citizen to the government databases and administrative systems which can be used to extend public services to the remotest corner.

3.6.3 All Government ministries, divisions, departments, bodies and all district headquarters, Upzila headquarters and Union headquarters must be networked to the National Data Resource Centre in the shortest possible time. The centre shall be a system of national databases having capacity to store and supply rapidly all necessary information on the economic, cultural and social situation of our country.

3.6.4 Each ministry, divisions, government bodies shall create an IT cell, to be managed and run by well-trained IT professionals to plan, coordinate and implement IT projects and services. Special compensation package comparable to that of private sector shall be introduced to encourage IT professionals.

3.6.5 All ministries, divisions, agencies of government and semi-government organisations shall set up web sites where all policy documents and information relevant to the public shall be ported and regularly updated. A portal 'Bangladesh Government ' will be created from which link will be provided to the web sites, like E-forms, E-procurement, E-recruitment, E-results etc.

3.6.6 Preference shall be given to IT literate persons for the purpose of recruitment in public offices. IT-literacy shall also be given due importance in the ACR to ensure utilization of IT in the public services.

## **3.7 Legal Issues**

3.7.1 Software copyright provisions embodied in the Copyright Act 2000 will be implemented by promptly setting up appropriate enforcing bodies as mentioned in the Act.

3.7.2 IT Act should be enacted immediately.

3.7.3 Data security and interoperability should be ensured through actions such as setting of encryption standards and international agreements on interoperability.

3.7.4 With the increase in the use of Internet and Information Technology in every sphere of human activities, formulation of new laws or amendment to the existing ones should be done, if deemed necessary, to ensure privacy of data, freedom of information and access to information by the mass.

### **3.8 National Security and Defense**

3.8.1 IT will be used by the law enforcing agencies to ensure safety and security of life and property of the citizen.

3.8.2 Bangladesh Armed forces should use IT to the fullest extent to increase their efficiency and effectiveness.

### **3.9 Health Care**

3.9.1 The main focus in the use of IT and communication technologies in Healthcare will be to deliver new capabilities for hospitals and healthcare providers. IT should be used to develop such capabilities specifically in the areas of electronic medical records, telemedicine, medical and health education.

3.9.2 Telemedicine System Network shall be introduced throughout the country for cost-effective delivery of health care services. The Telemedicine Network will be used for rural patient management, distant medical education, training of health professionals and to develop mass awareness for disease prevention.

3.9.3 Development of Bangladesh Health Portal should be given priority for appropriate growth of e-health and telemedicine referral system. International tele-consultation through telemedicine for critical patients will be supported in both private and public sector.

3.9.4 All public hospitals and medical research centers shall be linked by computer networks with Bangabandhu Sheikh Mujib Medical University as the central hub in order to make expert services available throughout the country. This network may be gradually extended to the Upzila level.

### **3.10 Agriculture and Poverty Alleviation**

3.10.1 Agriculture including fisheries and livestock is the main source of earnings for the majority of the people of Bangladesh. IT systems can be used in these sectors to reap its unutilized potentials and thereby improving the socio-economic conditions of the rural people. Proper initiatives will be taken to utilize IT systems in agri-business development, agriculture research, dissemination of agricultural technology to the farmers and preparation & maintenance of agricultural database.

3.11.1 Nation-wide IT systems will be implemented for rural development activities, agricultural, horticulture, fisheries and livestock extension for farmers, career guidance for youth, technology guidance for rural enterprises, micro level planning etc. Communities and user groups or beneficiaries would be actively encouraged to participate in all such activities.

3.11.2 Public grievance redressal will be incorporated in the IT-based system to facilitate access to citizens through any of the kiosks, public facilitation centers or Government offices. It would be made email based and strengthened to facilitate monitoring and on-line responses.

3.11.3 Non-government organisations will be encouraged to establish centres at the village level for providing hardware/software or other support services. At the same time the Government will use both the formal and non-formal channels to disseminate information about the application, advantages to communities of the use of IT.

### **3.12 Transportation**

3.12.1 The government will introduce an IT-based integrated transport management system.

3.12.2 Commercial transport agencies will be encouraged to deploy Information Technology for dynamic route planning and traffic management.

3.12.3 IT will be used for online booking and ticketing services of all public and private transport companies.

### **3.13 Tourism**

To harness the potential of the tourism industry in Bangladesh, Information Technology can play an important role. The recommendations are :

3.13.1 Information Technology should be used to project tourists' attractions in Bangladesh through the Internet.

3.13.2 A reliable, comprehensive, on-line information system to satisfy the needs of the tourists for travel and accommodation to deliver instant and up-to-date information will be developed.

3.13.3 The partnership with both the local and foreign agencies relevant to tourism will be strengthened and encouraged to introduce on-line reservation for travel and accommodation, booking and ticketing for arts and entertainment events and shopping.

### **3.14 Environment**

The growing environmental problem has endangered the national communities including the human existence. In this era of wired world, the Information Technology can help build the capabilities to fight against the environmental degradation. The



policy recommendations are:

3.14.1 Information Technology will be deployed to collect and disseminate information on environmental problems and their causes in order to create awareness about environment among the common mass.

3.14.2 Information system for flora & fauna, their habitats and eco systems whose life has been endangered will be created.

3.14.3 GIS and other IT-based systems will be set up for planning at the national level for conservation of nature while accommodating compatible land use to maintain the ecological balance.

3.14.4 Information Technology will be used to help solve the most pressing problems of environment in the metropolitan areas- toxic emissions from vehicles, industries and other sources.

### **3.15 Judiciary**

3.15.1 To enhance the capacity of the judiciary, a computer based Management Information System (CMIS), with suitable Wide Area Network (WAN) and Local Area Network (LAN), will be established both for the Supreme Court and for the District Courts. It may consist of three inter-related modules, namely, (i) a case management module, (ii) a legal framework module, essentially covering two basic sources of updates, namely the Bangladesh legislative code and the Bangladesh case law (reported Supreme Court rulings) database; and (iii) a court administration module, whose areas of application may include court inspection, planning and budgeting, transactions, financial accounts, staff-related information and reporting, statistical applications and records management.

### **3.16 Regional and International Cooperation**

3.16.1 The Ministry of Science & Technology and BCC will be the focal point for the regional and international cooperation in the area of Information Technology.

3.16.2 The ministry vested with the responsibilities in IT affairs shall explore and execute, in consultation with Ministry of Foreign Affairs, Regional, Sub-Regional and International cooperation and collaborative agreements on IT with developed and developing countries and also with relevant international agencies.

3.16.3 The concerned ministry will facilitate participation in the regional and international forum to reap benefit for the country ' s economy.

## **4.0 Implementation and Monitoring**

### **4.1 Funds and Resources**

4.1.1 Government spending in IT shall be increased to at least 1% of ADP by 2005.

4.1.2 New budget line should be created for all Ministries, Divisions, Departments and Bodies and all economic sectors should be encouraged to make their own investment in the application of IT in production, trade and services. ERD should explore external funding for necessary infrastructure and human resources development conforming to the IT Policy.

4.1.3 Those IT companies will get preferential terms which will be able to meet up 20 percent of its revenue expenditure from the earnings of export of software and IT-enabled services.

4.1.4 A centralized fund for R&D and HRD will be created with BCC. 1% of all profits from Software and IT-enabled services shall be paid to the R&D and HRD fund.

### **4.2 Institutional Arrangement for IT Policy Updating, Implementing and Monitoring**

4.2.1 In order to make best utilization of IT and exploit its immense economic, social, commercial and scientific potential a 15-member National IT Task Force headed by the Hon ' ble Prime Minister has already been formed on 4-1-2001. This apex national body will guide in updating, implementing and monitoring the IT Policy.

4.2.2 The Ministry of Science and Technology and the Bangladesh Computer Council will collaborate with all Ministries/Divisions/Departments/Autonomous Bodies including Banks and Insurance ' s in their attempt to promote and use IT in respective areas of operation.

4.2.3 The role of BCC as the central coordinating agency assumes critical importance as the implementing body. BCC shall advise the Government on IT sectors of its progress and development both at home and abroad.

4.2.4 BCC will work closely with the private sector as promoter of the IT activities and business.