national development Strategy

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# Information Technology

When the National Development Strategy (NDS) was being formulated about two years ago, its authors were of the opinion that very few Guyanese would be fully conversant with the potential contribution which Information Technology (IT) could make to the social and economic development of countries such as Guyana. Although the situation has changed considerably since then, it might be useful to restate here the claims they then made for this relatively new determinant of a nation's progress.

They asserted that IT has become pivotal to the process of development because it now provides the most efficient and cost-effective ways of exchanging information and transacting business; because it has transformed the very nature of the world's financial and other service sectors; and because it embodies in its mechanisms and modalities the means of considerably enhancing our human and institutional capacities.

More specifically, the authors argued that IT can help Guyana in several ways. They emphasised first, that IT can greatly assist the country's trade prospects (i) by enabling our entrepreneurs to discover new markets not only for our traditional exports but also for those new products that would result from our diversification programmes; (ii) by quickly and consistently accessing, through the internet and other means, relevant information on prices, the demand and supply of particular products and services, their specifications, potential buyers, and the periods in which they are frequently required; (iii) by speeding up delivery time and reducing transaction costs through the use of computer technology for data processing; (iv) by helping producers to deal directly with exporters, thus circumventing the middleman and, thereby, increasing their profits, (v) by assisting small-scale producers to combine with each other to obtain and supply export orders which they might not have been able to service individually; and (vi) by extending the scope of our tradeables in the service sector. Through our participation in electronic commerce we could be in a position to provide or receive, for example, a range of legal, accounting, medical, educational, financial and data processing, retailing and tourism services. Indeed, new types of jobs and new fields of endeavour could become available through access to the information economies of the world: software development, translation services, data entry and data housing services, and data conversion. Second, they insisted that the use of IT can assist greatly in macro-economic and public sector management in several ways: both in the mobilisation of resources, and in their

utilisation once mobilised; in improving the efficiency, transparency and accountability of our governance; in helping us to design, implement, and monitor the performance and the effects of public policy; in following-up on tax collection; in validating revenue collection against expenditure; in applying simulation techniques simultaneously to maximise revenue and minimise the tax burden in selected income groups; and in helping to simplify purchasing procedures. In short, information technology systems and computer-based modeling can be used in a wide range of governmental transactions.

Third, the authors of the NDS stressed that the implementation of the strategies which they have put forward for the development of agriculture in Guyana could be much enhanced through the adoption of information technology. For example, information systems could be developed to monitor our drainage and irrigation systems, the utilisation of our land resources, and the control of crop diseases. Moreover, through IT, access to new technologies and techniques for improving agricultural production could be considerably improved, thus enabling extension officers more effectively to advise growers on ways to step-up their productivity. Indeed, the type of knowledge now being disseminated by information technology systems include advances in genetic engineering which could offer opportunities for Guyanese to use seeds and plants that are adaptable to areas of relatively low water availability and sub-optimal soil conditions, and would therefore be of infinite assistance in our utilisation of such locations as the Intermediate and Rupununi Savannas.

The authors of the NDS considered this matter of the adaption of techniques and technologies to be of such importance, that they emphasised that if Guyana is to emerge from the morass which now seems to hinder its social and economic development, it cannot afford to follow time-worn and beaten paths. We must piggy-back on the new knowledge that is being created. We must leap-frog our development. And agriculture is one of the main areas in which this process can best occur. Indeed such innovations are already occurring in many developing countries such as Nigeria, Indonesia, Kenya, Thailand, and Malaysia. The opportunities for the utilisation of information technology to develop Guyana's agriculture appear to be limitless.

Fourth, it cannot be too strongly emphasised that rapid human capital development is essential for sustained economic growth and poverty eradication in Guyana. And yet, as we have already demonstrated in these columns, the country does not currently possess critical masses of trained personnel in any of the main areas of our developmental thrust. The inadequacy of our manpower base is therefore one of the main obstacles to our future progress. Several problems pervade our educational system. We need, inter alia, to improve both its quality and its relevance; to increase teacher-student ratios; to overcome the limited availability of instructional materials; to provide more exposure to science and technology in our schools; and to enhance the access of our University students to international journals and adequate research facilities.

Because most of the problems of our educational system are caused by inadequate funding and the inefficient use of available resources, IT is particularly apposite for a wide range of low cost solutions. For example, distance education systems which are economic, flexible, and adaptable may not only be utilised to pursue both conventional and unconventional

educational ends, but may also be employed to establish linkages between the University of Guyana and the University of the West Indies and indeed, with universities further afield in order to exchange ideas, facilitate research, and supplement the fragile knowledge base of our country. In addition, the new technology can be utilized to teach classes in a range of schools from one central position, thus requiring a significantly reduced amount of teachers.
The wide potential of IT in education can be illustrated by the operations of the African Virtual University (AVU), satellite-based distance-education project that was initiated by the World Bank in 1995. Its objectives are to educate and train world-class scientists, technicians, engineers, business managers, health care providers, and the other professionals that are needed to support economic development in Sub-Saharan Africa. Such a scheme might, with imagination, be adopted to Guyana's conditions. It might help, for example, to solve the persistent problems of low budgets, too few lecturers and professors, obsolescent and obsolete equipment, and limited facilities at the University of Guyana.

Fifth, is the potential importance of IT to our health sector. IT, for example, could help in the establishment of a decentralised decision support system, which seems a necessity in the remote parts of our country; it could provide information on health profiles; it could enhance our health administration and management through the establishment of medical information systems; it could link our health centre and delivery systems; and help to co-ordinate the medical transportation of patients, especially those who are referred from a lower echelon of our health structure to a higher, in our interior and rural areas. Moreover, with moderate investments in some and hardware, hospitals can create on-call tele-radiology systems or consult on remote cases over the Internet. There is little doubt, also, that the use of the Internet could also considerably improve the quality of training that is available to our medical students.

Sixth, Information Technology could he used in the formulation of environmental strategies by providing data for co-ordinated environmental management in monitoring the implementation of environmental information. It should become an integral part of the mechanisms that are utilised by the Environmental Protection Agency.

These are some of the general and specific benefits which could accrue to Guyana if information technology systems are more widely utilised here. In the-next article in this series some of the constraints to the wider application and utilisation of IT in Guyana will he discussed; the objectives of an IT strategy will he enunciated; and the strategy which the authors of the NDS have devised to attain these objective will he described in some detail. It might he salutary, however, even at this stage, to stress that the authors of the NDS are quite certain that no strategy for the development of IT in Guyana can he fully realised unless there is established an appropriate institutional, legislative and regulatory framework which clearly delineates, as a minimum, the role of the private sector, the role of the market in telecommunications development, and the degree of public regulation to which the sector would be subjected. (Back to top)