THE ROLE OF INFORMATION TECHNOLOGY IN IMPROVING SERVICE DELIVERY

In the past two decades, the coincidence of public sector reforms with the much-heralded dawn of the 'Information Age' has meant that government departments have become major users of computers and information management systems. While there are disparities in the extent of investment in information technology (IT) in the public service between countries, broad patterns are evident.

Major improvements have been achieved concerning productivity, and technological and financial considerations (revenue collection, financial management and accounting, and inter-departmental communication systems). These are usually prioritised in the light of financial constraints and impending implementation deadlines. The traditional Anglo-American view of IT use in the public sector has emphasised its potential for rationalising tasks and cost-cutting.

Public sector managers have, in the past, focused IT development on improving efficiency in internal procedures and the 'back office.' More recently, though, IT has come to be seen as a tool that can also improve the quality of service delivery in the 'front office.' IT can reap wider benefits for society than simply reduced costs and government has a duty to unlock this potential.

As governments review the last twenty years or so of public sector restructuring, decentralisation and downsizing, it has also been recognised that the development of IT-use is consistent with the attempt to establish 'joined-up government' – closer integration and liaison between different government businesses whilst retaining departmental autonomy – amidst a climate of devolution. IT can offer the various departments and agencies involved in public service provision the chance for both more effective communication between each other, and more integrated interfacing with customers.

Furthermore, as citizens experience the benefits of technology in other areas of their lives, there is a growing expectation that government services will be provided in similarly flexible and innovative ways. Fears that the information age would create more paternalistic and intrusive government, distempering citizens, have proved wholly misguided. IT is anti-hierarchical by nature, and is increasing the power of individual citizens to access and influence government operations and raise their expectations of public service delivery.

Important factors that are needed to achieve maximum benefits from IT systems include:

- enhanced management, planning and control of the IT function;
- using technology to redesign and improve administrative processes;
- providing better access to quality information;
- harnessing the potential of new technologies;
- developing and applying standards;
- attracting and retaining high calibre IT professional staff;
- increasing research into the economic, social, legal and political implications of new IT opportunities; and
- assessing experiences.

In recent years, the introduction of IT has typically involved a strategic planning process in which organisational objectives are clarified and prioritised. This has been a useful contribution in its own right to organisational effectiveness. IT has also facilitated access by policy-makers to timely and comprehensive information, through better communication systems and the generation of policy-relevant information from operations. This has become all the more crucial in an environment of devolution and separation of policy-making and executive functions.

INNOVATIONS IN SERVICE DELIVERY

As leading private corporations are beginning to use IT to offer services that are simultaneously flexible, accessible, convenient, fast and efficient, citizens, aware of these new service possibilities, are losing their tolerance for traditional 'bureaucratic' service. If, for example, banks are able to offer 24-hour telephone or Internet service, customers begin to wonder why tax offices cannot do the same. Governments are being forced to match the private sector in technological innovation.

'One-stop' services

Leading the field in this area of service delivery are the Ontario Government's ServiceOntario electronic kiosks, which are heavily-used after normal office hours. These were built for the government by IBM which receives a fee of $1 per transaction.

Since 1990, Singaporeans have had access to multimedia interactive information kiosks via the SingaTOUCH network which is used by the government to both disseminate policies and deliver services.

IT has been central to several initiatives to improve access to information and services outside normal office hours, in locations which best suit the client and in multiple forms (different languages, touch screen interrogation, etc.).

- The Australian Taxation Office has developed a system whereby taxpayers will be able to download return preparation software over the Internet, complete their return, digitally sign, encrypt itand then lodge it with ATO also over the Internet.

Moreover, information and services are beginning to be provided to individual citizens via kiosks situated in shopping centres, community centres and other public places. Some developments bring together a wide range of information from many central and local government departments. Others provide both information and services, such as job-seeking and vehicle licence renewal, with the facility for payment by credit card. There are also initiatives that combine public and private sector information.

IT has also supported efforts to provide an integrated service based on the 'whole person' concept rather than on administrative function with the result that, for example, all tax or social security matters relevant to a particular client are dealt with by a single office rather than by different offices. This system has advantages for both administration and client. For the administration, it improves efficiency (by eliminating duplication), control (against fraud and evasion), and effectiveness (by increasing tax in-flow or better targeting of service). For clients, it reduces intrusion and compliance costs. But it requires major changes in work practices, communications, organisational structures and computer systems. Although many countries are committed to the approach, implementation has been generally slow, due mainly to organisational barriers between departments or agencies and local levels of government, and the attitudes of civil servants.

Telecommunications networking among government agencies in Malaysia

Malaysia has established the Government Integrated Telecommunications Network (GITN). The project provides a tele-communications infrastructure that is capable of supporting an integrated network of the various government agencies. The network carries a number of applications more cheaply without each individual agency having to worry about maintenance and technical issues. In 1996, a GITN pilot project was initiated which included such applications as video-conferencing and discussion databases.

Many countries are also developing more interactive and easy-to-use systems that enable point-of-contact officials to provide relevant information and service to clients. Many front-line offices now have immediate access to main databases

storing information on clients and providing opportunities to establish their entitlements and ultimately to customise the service to their needs within defined limits of discretion. Access to computerised information, greater use of existing information and greater integration or connection among systems are reducing form-filling and enabling speedier, more reliable responses to clients.

PLANNING AND MANAGEMENT OF INFORMATION TECHNOLOGY SYSTEMS

The crucial importance of IT in improving public service provision now means that public sector managers are obliged to view information as a fourth major resource and practice systematic information resource management, ensuring that the right information is reaching the right employee or client at the right time and in the right form.

Many governments have developed policy frameworks which provide a public service-wide focus for effective planning and management of information systems, technology, and organisational engineering involving information technology. These frameworks require clear co-ordination and identify lead agencies capable of tracking fast-moving developments in technology and systems. In some countries, units have been established to promote the use of computers and information technology.

- The Government of Bangladesh has established an autonomous body called the Bangladesh Computer Council (BCC). The major role of the BCC is to assist the government in formulating, co-ordinating and implementing IT-related polices and setting up a framework within public and private sector institutions in order to enable them to collaborate to develop new technologies in Bangladesh.

- In 1994, the Canadian Government released a blueprint paper suggesting ways for renewing government services using IT. It outlined a number of key work principles for redesigning delivery processes:

    - *Single Window/Seamless Service* – services to be delivered through a single window;

    - *Streamlining* – the process between client and service delivery to be minimised;

    - *Choices* – cost permitting – clients to be offered the choice as to how service is delivered;

- *Consistency* – the same type of work activities to be conducted in the same way for different services;

- *Location and Time Independence* – clients to have access to services at any time and from many places, where practicable;

- *Continuous Improvement of Service* – measurements embedded in the service processes to ensure that improvement is continuous.

Effective planning of IT initiatives is also essential if public services are to attract the personnel able to administer new programmes. There is a world-wide shortage of trained IT personnel and governments must compete with the private sector which usually offers higher salaries.

- South Africa aims to create a State Information Technology Agency in order to address the problem of recruiting skilled IT personnel. The proposal is to create a state-owned company which will provide IT services to the rest of the government on a cost-recovery basis, using the services of the private sector where appropriate.

Experience in the UK supports a strategic approach to IT management where departments identify and prioritise group elements for information systems and ensure compatibility with other existing and planned systems. This benefits the approving authority by providing a backdrop against which to consider each proposal for expenditure.

The following is a selection of the specific benefits of a centrally co-ordinated IT policy noted in Singapore, but equally applicable elsewhere:

- improved co-ordination between government departments in the packaging and integration of IT, enabling a synergistic approach towards improving public service;

- better identification and initiation of useful strategic applications that improve service provision;

- the possibility of collective bargaining with information delivery service operators for favourable terms and competitive charges;

- quality-assured products and services;

- enhanced product and service development;

- more accurate monitoring of public acceptance and market need for products and services;
- Ease of technology transfer between departments;
- No duplication of set-up costs.

A properly integrated approach also creates certain additional benefits to the extent that, in the case of the UK and Canada, the exchange of ideas and customised software between government departments has led to the development of skills and products that are sufficiently competitive to be marketed to other governments and institutions, and to the private sector at home and abroad.

Integrated Information Systems

The UK's GCTA or Government Centre for Information Systems is responsible for promoting business effectiveness and efficiency in government through the use of IT. It provides specific services to government departments and agencies, such as helping them plan their spending on information systems and advising them on the best use of their information technology by evaluating various systems available against needs and value for money. While its customers are chiefly government departments and executive agencies, its business environment is wider and includes European and other national governments, European Community institutions, the academic world and the IT supply and service industry.

The Canadian Government's Software Exchange Service (SES) aims to reduce government expenditure by encouraging the sharing of a large inventory of government-owned applications service; fostering an environment for sharing ideas on IT; open opportunities for the private sector to provide software customisation, installation and maintenance services; and identify commercially-marketable government-owned software for licensing. It is estimated that this inter-departmental and inter-regional co-operation saves the government more than $30m annually.

APPLICATIONS FOR EFFICIENCY AND QUALITY

As has been noted in some cases already, IT applications, particularly when taking advantage of networking opportunities between departments and reducing administrative burdens on clients, are achieving significant efficiency savings for the public service. The use of electronic mail, smart cards, electronic data interchange and so forth can dramatically reduce the amount of paperwork required in both intra-governmental business and citizen-to-government business. The significance of computerised databases which can be shared between government

agencies is clear when one considers that particulars citizens are required to communicate to, say, vehicle licensing authorities, the police and the tax office. A straightforward change of address need no longer involve the completion of different forms for each section of the public service.

In many Commonwealth countries, the use of information technology has been undertaken with the aim of replacing existing manual systems through a major office automation programme. Computerised text processing, information storage and retrieval, and communication systems have been introduced to increase efficiency and enhance productivity. More recently, countries have been investing in the development of electronic data exchange and generally conducting business electronically wherever possible, such as in the area of procurement. There is also interest in using IT to improve the management and access to regulation.

- Computerisation has made extensive inroads in the Singapore Civil Service and has enabled it to improve efficiency by reducing manpower costs. The Singapore Civil Service Programme has generated S$2.71 in return for every dollar spent on computerisation.

- In Malta, one of the key parameters of the strategic plan for public service reform is based on maximising the information resource through the sharing of information, within the confines of Malta's legislation, to avoid duplication in information collection and maintenance. In order to achieve this, the Government has established an open client-saver architecture platform that allows seamless access of applications systems from a single workstation, with appropriate security safeguards. This input of technology has been very significant in a relatively short space of time, with applications systems in place, or in the course of development, in most major areas of government.

Towards a 'paperless' civil service

The Malaysian Government's objective is to move towards an era of 'paperless' bureaucracy. A network is being established that will enable government agencies to offer their counter services on-line to the public using the computer and network facilities of the post offices. It is hoped that this network will support the provision of 'one-stop/non-stop' services when used along with multipurpose cards for each citizen which will access a variety of government services. These services would include registration of births and marriages; driving licences; and the payment of taxes and pension contributions

The Canadian Government recently announced a blueprint for renewing government services through the use of information technology and thereby bringing services to clients and providing them with 'single-window' accesses for multiple services.

REASONS FOR CAUTION

While successful applications of IT have been evident, there have also been many disappointments and failures. IT investments have not always provided the best value for money or delivered all the expected benefits. The uneven use of IT can also increase external inefficiency and administrative burden. Thus, governments can add to the costs of businesses by not keeping up with their IT investments or by imposing different technical and information standards. A balance needs to be struck between tailoring administrative acts to the needs of individual clients and adding overall complexity, and maintaining uniformity and relative simplicity and transparency.

Technology transfer has long been identified as a key factor within the development process, but a number of problems have been identified in schemes for computerisation in the developing world. First, effective use of IT involves more than simply purchasing the equipment: a number of infrastructure requirements, technical and managerial skills are needed in order to operate it. Second, technologies developed in the West may incorporate particular social and cultural assumptions not applicable elsewhere, such as the value of formal information or legislative stability in the business environment. Thirdly, once the appropriate technology has been obtained from the chosen provider, the donor/vendor may have little interest in making sure that the technology works.

Relevant to even the most technologically advanced of the industrialised nations is the issue of social exclusion raised by the increasing use of IT in public service provision. There is concern that not only are the elderly unable to adapt to new technologies, but the poor, while willing to learn, will remain unable to afford access. The public administration has a duty to ensure that in the race to modernise it does not cut off or marginalise from service provision those on the fringes of society.

Factors such as these emphasise the need for prudent assessment of the potential advantages and costs of investing in IT projects. It has become apparent that many IT investments have been made in a climate of media hype about the miracles of new technology without proper assessment of the real effects on performance or a comprehension of IT's socio-cultural effects within an organisation. As is the case for the other mechanisms for improving service delivery cited here, careful consideration of local circumstances, and the duty of the public administration to serve the public good above all, ought to moderate the outright importation of best practices.