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INFORMATION TECHNOLOGY: THE INTEGRATION OF GOVERNMENT SERVICES

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INTRODUCTION

The federal government has been using information technology (IT) for several decades in ways that have evolved in step with the underlying technology. Initially limited to scientific and engineering applications, IT is now found in most offices. Many would consider the changes made to date as impressive, but they pale before the magnitude of those the government will be implementing in the future.

To improve the way it serves the public and to maximize the use of IT, the government has been taking some progressive initiatives. The most recent and ambitious was the release, on 22 March 1994, of a discussion paper entitled "Blueprint for Renewing Government Services Using Information Technology" ("the Blueprint").(1) Copies of this document were distributed for review to provincial governments, industry, and federal government departments and agencies, with replies requested prior to 31 May 1994. The President of Treasury Board, Mr. Eggleton, also invited public participation in the review process.(2)

This paper will provide a broad overview of the evolving use of IT in the federal government as well as some of its likely future applications and their possible impact on the Canadian public and federal public servants.

OVERVIEW

A. General

Governments are, by their very nature, information-intensive. They require vast amounts of data to deliver family allowances, pensions and unemployment insurance, as well as health, safety and security services. The federal government also depends on increasingly complex

(1) Treasury Board of Canada Secretariat, "Blueprint for Renewing Government Services Using Information Technology," March 1994.

(2) Treasury Board of Canada, "Re-Engineering Government," News Release, 22 March 1994.

information systems to support programs for taxation, scientific research and statistics. Some of the information dealing with business and private citizens needs to be coordinated with that of provincial and foreign governments.

B. Chronology

Historically, IT in the federal government has been related to the automation of clerical operations; a large percentage of expenditures on IT remain dedicated to operating and maintaining these older systems. The commitment of resources for maintaining these, however, has come to be recognized as restricting their modernization and the development of new applications.

Recent technological advances in information management systems have dramatically reduced their cost while increasing their efficiency and effectiveness. Information can now be captured, stored, managed and distributed more effectively than ever before. Fast, accurate access to information enhances service to clients and results in better decisions. The challenge for the government is to take advantage of the improvements offered by the new technology.

Already in 1991, microcomputers were being used by more than one in every three government employees.(3) The networks linking these computers are expanding very rapidly and being connected to larger networks that can include entire departments. In general, program operations and service delivery are becoming increasingly dependent on IT.

An initial plan for government activities, "The Information Management Policy Overview, Strategic Direction in Information Technology Management in the Government of Canada," was issued in 1987. Approved in 1989 was a policy governing the management of government information holdings and in 1990 a policy governing the management of IT. These policies were designed to promote the use of information and technology as strategic tools and to set the climate for change. At the same time, the Treasury Board approved the coordinated management of all information-based resources. The stated objectives of the government are increased productivity, better program delivery, enhanced service to the public and a modern Public Service, all to be achieved by improving information management processes and the use of IT.(4) Full implementation in all departments and agencies will probably take to the end of the decade.

In 1993, the position of the Chief Informatics Officer was established as the focus for this change within the federal government. The feedback on the 1994 Blueprint has been very positive and Treasury Board now anticipates a large number of departmental initiatives.

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(3) Treasury Board Canada, "Enhancing Services through the Innovative Use of Information and Technology," 1993.

(4) *Ibid.*

C. Government Investment in IT

The federal government aims to apply IT to improve its service and to increase productivity. To this end, from 1986 to 1992, the government spent $11 billion to acquire IT goods and services from the private sector.(5)

The Treasury Board Secretariat estimates that the direct spending on IT-related activities is over $3 billion annually; this sum includes combined salaries exceeding $1 billion for over 20,000 people. These people develop, install, maintain and manage over 200,000 workstations, more than 500 mini – and mainframe computers, a multitude of different computer-based administrative and financial systems, and hundreds of IT projects.(6) The full operating costs (excluding personnel costs) constitute approximately 12% of total government expenditures. Although operational budgets are stable or decreasing, expenditures for IT were rising by about 12% each year.(7)

IT is becoming more and more important in the delivery of programs and services. According to the annual federal government procurement review published by Ottawa-based Government Consultants International, data processing equipment and services became the top procurement category in 1989-90 and retained that position in 1990-91. Information systems companies now account for four of the top 25 positions in the list of vendors to Government Services Canada.(8)

D. Examples of IT Initiatives

Although basic office automation accounts for a large portion of expenditures on IT, more global or system approaches are emerging in various government departments. Some examples of initiatives are described below.

> Revenue Canada Taxation envisages increased electronic interaction with taxpayers, financial institutions, other government agencies and the private sector. The aim is to increase productivity, reduce the paper burden, improve and expand taxpayer service, and provide greater access to information. The department has established teams to research some enabling technologies, including expert systems, voice technologies, video-text systems, imaging, optical storage, electronic data interchange, electronic funds transfer and office automation, and to identify areas for their use.(9)

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(5) Treasury Board of Canada, Communications and Coordination Directorate, "A Review and Analysis of Information Technology Expenditure Trends in the Canadian Federal Government 1986-1992," 1993.

(6) Auditor General of Canada, *1994 Annual Report*, Volume 5, Chapter 8, p. 8-7.

(7) "A Review and Analysis of Information Technology Expenditure Trends..." (1993).

(8) *Ibid.*

(9) "Enhancing Services..." (1993).

The Canadian Patent Office formerly had a lengthy, paper-bound process for granting patents. Rather than merely automating the existing process, the Patents Office redefined its business. It intends to change from an office providing title-searching only into a patent information service. The documentation forming a patent application will be accessible to the public from an image database. The information will be used by industry and others to search for existing solutions that they can license rather than incurring the cost of developing a new solution or duplicating an existing one.(10)

Human Resources Development Canada has the Income Security Program Redesign project for income security recipients. This project aims to improve turnaround in applications for Canada Pension or Old Age Security and is one of the largest redesign projects under way in government. Specific objectives of the redesign are maintenance and improvement of client services, security and accuracy of information, flexibility and responsiveness of program delivery processes, and operational efficiency. The redesign involves people, organizations, structures, processes, systems and communications. Only 30% of the costs for this change are technology-related. Management of this project is particularly concerned with client outcomes, doing it right the first time, providing good client service and ensuring that the right tools are in place to do the job. The 1994 Auditor General's Report praised this project for its "people management."(11)

The government disseminates information to the public via publications, discussion papers and other documents. These traditional means are now being enhanced by electronic formats. The Treasury Board Secretariat produces a database of government information holdings called InfoSource. This is available at 7,000 public access points and is now accessible electronically through a private-sector information-service company. Through InfoSource, the public can find federal government information from across the country.(12)

A government-wide project led by the Office of Information Management, Systems and Technology, Administrative Renewal Division, is re-engineering the government pay and benefits process for government employees. Over 4,600 employees are involved in pay and benefits administration at hundreds of sites across the country. It is estimated that re-engineering these processes will produce a permanent reduction in current costs and could yield cumulative savings over five years of roughly $124 million.(13)

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(10) *Ibid.*

(11) Auditor General 1994, Volume 5 Chapter 8.

(12) "Enhancing Services..." (1993).

(13) "Pay and Benefits: Re-engineering Project," *IT: The People Challenge Newsletter*, Volume 2, No. 2, Fall 1994.

> The government is examining the development of an integrated communication infrastructure that would use a series of standards. The Treasury Board Secretariat is coordinating this initiative, which could effectively integrate government activities in terms of electronic mail distribution, data transfer and, eventually, integrated applications.(14)

GOVERNMENT PLANS

Two key elements make up the core of the government's plans for using IT. First is establishment of the Chief Informatics Officer. Second is the major initiative begun last spring with the dissemination of a major blueprint for stimulating such changes.

A. Chief Informatics Officer

The Chief Informatics Officer (CIO) for the federal government, Andy MacDonald, serves as the central focal point for using information management and technology to increase productivity in delivering government services and reducing the cost of government administration. The CIO facilitates and coordinates information systems and technology development in departments and in government-wide processes such as personnel, finance and material management. The objectives are to reduce costs while maintaining (and in some cases improving) services to Canadians.

B. Overview of the Government's Blueprint

In March 1994, Treasury Board circulated a comprehensive draft discussion paper reviewing the principles for making major changes in the way government services are provided. The paper includes input from the major stakeholders and discusses management of change within the government over the next five years. It is important to note that the Blueprint provides guidance only. Following is an overview of the main areas discussed.

In the Foreword of the Blueprint, the CIO and the Secretary of the Treasury Board introduced the initiative as follows:

> The "Blueprint for Renewing Government Services Using Information Technology" proposes a vision of affordable, accessible and responsive federal government services and an integrated approach to help achieve this vision.

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(14) Bernie Gorman, "Implementing the Blueprint," Information Management, Systems and Technology, Treasury Board, presented at the Professional Development Forum, Ottawa, 27 October 1994.

> The Blueprint takes a fresh, enterprise-wide look at government services using a client focus. It recommends creating, managing, and prudently sharing information electronically among departments and their different services in a way which protects the security and privacy of the information. It envisages the use of a government-wide electronic information infrastructure to simplify service delivery, reduce duplication, and improve the level and speed of service to clients at a lower cost to the taxpayers.
>
> The Blueprint emphasizes the critical importance of employees. Their involvement and commitment are essential to successful business renewal. In this vein, information technology will be applied in a manner to improve the "human face of government" as well as the efficiency and affordability of service delivery."(15)

The Blueprint did not discuss any problems that might arise from this vision, and their impacts on the public and public servants.

As examples of scenarios of future delivery of government services, the Blueprint cites:

- **Auto-Service**. A client's own computer system would generate a service request and the supplier's system would provide a response.

- **Self-**Service **(electronic)**. Individual Canadians, businesses or public servants would use desktop computer workstations to access information and to generate transactions, orders and payments.
- **Self-Service (walk-in)**. Clients would seek information, goods and services by visiting common walk-in centres, where public servants use computerized services to respond.

- **Service with On-site Support**. An intermediary group or agency would provide multiple services, sometimes for numerous clients.

- **Specialist/Expert Service Centre**. Internal and external clients would access "experts" in government directly and quickly via computer connectivity technology.

- **Supplier Interface (extended enterprise)**. Suppliers and internal consumers would be connected directly to the government's order and payment systems and thus become an extensions of these systems.

Each of these scenarios has advantages, depending on the particular service being provided.

(15) "Blueprint for Renewing Government Services Using Information Technology" (1994), p. iii.

The government views the Blueprint as providing a dynamic and integrated framework for implementing government service renewal over the next five years. Critical to its implementation are:

- **Leadership.** Both ministers and deputy ministers must champion the service renewal, with the support of the Chief Informatics Officer. An office within the Treasury Board Secretariat will coordinate implementation and provide support in business re-engineering and IT architectural design.

- **People Management**. Strategies and plans must be directed towards involving people in many ways, including the conceptual design and implementation, and facilitating their shift to the new culture and structures; assessing the composition and skills of the work force; and resolving the human resources issues associated with transition and change.

- **Partnerships**. The implementation of the Blueprint will require effective and sustained cooperation and partnership among staff within departments.

- **Forging Ahead for Results**. Service renewal projects will identify change management and technology requirements, develop migration plans, and provide incentive through success. A government-wide electronic information infrastructure project will support these service renewal projects as they spread across government.

- **Departmental Implementation**. Departments will use the Blueprint in planning and implementing their own internal renewal activities.

The Blueprint has been available for over ten months and most of the initial phases have already been completed. The initial feedback received by the coordination staff consisted of over 100 endorsements of the vision and objective from federal departments, provincial and territorial governments, the private sector, unions and individuals. Areas seen as requiring more elaboration were privacy, methods of implementation, and personnel.(16) Some of the main comments on the Blueprint can be paraphrased as follows:

> get the business right since technology will follow;
>
> people management is essential;
>
> a government enterprise network is essential;
>
> privacy and security issues must be carefully addressed; and
>
> implementation must proceed quickly in a coordinated manner.(17)

(16) Andy MacDonald, "The Blueprint: An Update," *IT: The People Challenge Newsletter*, Volume 2, No. 2, Fall 1994.

(17) Gorman (1994).

Overall, comments suggested that the government must show results quickly to maintain momentum but the results must not be oversold. The indications are that the government wants the process to proceed without delay. In June 1994, the Treasury Board Ministers approved the vision and objectives set out in the Blueprint for renewing government services to internal and external clients.(18) A companion draft discussion document also prepared by Treasury Board and entitled "The Human Side to Re-Engineering," was amended to respond to the comments on personnel issues. It is interesting to note that some provinces and other countries have shown an interest in the Blueprint document.(19)

The CIO is committed to providing $2 billion in savings and cost avoidance in government departments over a five-year period. Mr. MacDonald, the CIO, estimates that about $700 million could be saved by delivering programs more efficiently and the remaining $1.3 billion could be cut from administrative overheads, of which $800 million could be realized if departments adopted shared systems, or at least chose solutions from a limited number of approved options.(20)

C. Illustrations of Future Services

Some examples of possible future services to be offered by the federal government and given in the Blueprint are:

> At 4:00 a.m. every morning, a desktop computer in a large federal office building in Montreal automatically places a call to a computer across the city. The purpose: to collect news that will be in the morning's newspapers across the country and that will touch on areas of importance to the department's minister and senior executives. By 6:30 a.m., the information is available on the department's Executive Information System, by opening an electronic window. Meanwhile, down the hall, another computer is preparing to place an electronic data interchange (EDI) order to restock the department's central office supplies. The order includes all the information needed to complete the transaction, including payment on confirmation of receipt the next day..... Other examples of services that could be delivered in this scenario: payroll and deductions (such as direct deposit of pay),...(21)

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(18) MacDonald (1994).

(19) *Ibid.*

(20) Auditor General 1994, Volume 5 Chapter 8.

(21) "Blueprint for Renewing Government Services Using Information Technology" (1994), p. 14.

> Instead of having to go to an employment centre in another part of town, a client visits an electronic kiosk at a nearby shopping centre. Using a "smart card" issued by the government, he peruses jobs that seem to match his computerized skill profile. A touch on an icon on the kiosk screen produces a print-out of local jobs that seem promising. Another touch on the screen provides a just-released schedule of new training courses at a local high school. He decides to apply for one course on the spot and, again using his individualized smart card, obtains almost instant approval from the government and from the high school. It's just like using a bank machine, he thinks, as he signs off.(22)

> A businesswoman takes the elevator down to the main floor in her office building in Saskatoon...she decides to stop in the local government business service centre... Her partner ... is wondering whether it would be worthwhile to try to develop some foreign sales for their recently patented polymer building panels. But neither one knows where to start.... she's directed towards ...the building material specialist at the National Research Council in Ottawa... Two hours later, a three-page fax arrives...it lists four upcoming trade shows featuring new external building materials...a print-out from a Canadian commercial database and a two-day-old United Nations (UN) Request for Proposal for innovative, light-weight, all-weather building material for experimental housing for central Africa... contact names, telephone and E-mail. ...three Canadian prefabricated building companies which have all established records selling abroad. A marginal note from a trade official in Tokyo confirms that the embassy will keep the new supplier in mind in upcoming discussions on joint Canada-Japan cooperation on new uses of polymer building materials for the Japanese housing market.(23)

Each of these illustrations highlights ease of access to a wide range of government services and information. Some of the services imply a 24-hour, seven-days-a-week operation.

HOW THE GOVERNMENT HOPES TO MAKE IT HAPPEN

The government has prepared a draft implementation plan and last fall began implementation. The theme of the plan can best be summarized as "quit studying the problems; get on with it." In a presentation entitled "Implementing the Blueprint," presented at Professional Development Forum held in Ottawa, 27 October 1994, Bernie Gorman, Executive Director, Information Management, Systems and Technology, Treasury Board, described this stage of the process.

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(22) *Ibid.*, p. 16.

(23) *Ibid.*, p. 19.

A. Implementation Problems

The government recognizes some of the problems it must overcome to attain the desired results.

- **Access and Privacy**: Might service levels actually go down for some clients? Are privacy and information sharing incompatible?
- **Changing Management**: How can we mitigate the negative effects of IT on the public service? How are we to plan the training and redeployment? Do we need to change management tools and skills?
- **Governance**: How are we to manage the "single windows" when different departments, different levels of government, etc. may be involved? How are we to evaluate shared solutions and services? Where are the investment strategies for hard times? Is there more need for a government-wide coordination?
- **Technical Issues**: How will the infrastructure, be funded, managed and prioritized? What standards should be used?

In implementing the Blueprint, numerous parallel activities will have to be coordinated. One of the critical activities will be getting flagship projects going quickly in each of three action areas to set the tone and direction and to demonstrate their feasibility. The plan is to nurture departmental re-engineering initiatives since this is where much of the best work is being done.

Another major goal is to identify and resolve problems of horizontal implementation in government-wide common services. This is particularly important since some of the major savings anticipated are related to common services. It will also be essential to accelerate the building of the government-wide infrastructure needed to bring about many of the improvements.

The idea of using partnerships with industry, other levels of government and other federal departments and agencies to effect these changes remains important, but has proven to be more challenging to implement than was expected.(24)

B. Areas of Action

The government plan has three areas of action. The first is to bring information to Canadians as clients; this involves supporting innovative program delivery. The second area is modernization of the government's internal administration. The last area is creation of a knowledge network (the government's portion of the Canadian Information Highway).

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(24) "Blueprint Report Card, An Interview with Andy Macdonald," *HUM The Government Computer Magazine*, February 1995, p. 30.

1. Bringing the Information Age to Canadians

The objectives are: to bring service and information efficiently to the public; to integrate related information and services and deliver them together; to streamline service delivery across departments and 7flagship projects related to service to Canadians that are under way or being considered:

> Home delivery of government information and services. Various pilots, including interactive TV, are investigating the public response to such service.
>
> One-stop shopping, such as the Canadian Business Service Centres, Social Service Centres and InfoCentres. The Canadian Business Service Centres were set up with the provinces to allow a single point access for business people to receive services and information from a wide range of federal and provincial (and sometimes municipal) agencies. A database on trade opportunities is now available at some of these centres. Social Service Centres have been set up in several major cities (e.g., Toronto, Winnipeg, Vancouver, Montreal) and are sponsored federally by Human Resources Canada. InfoCentres were established several years ago with over 250 kiosks in Canada Employment Centres, Revenue Canada offices, and the Income Security Program centres across Canada. The information provided is organized by subject rather than department.
>
> Information Services. A system providing electronic management and delivery of strategic information for decision makers in industry is being led by Industry Canada.
> Canada Post and the government are collaborating on developing the Address Change Management system to improve the delivery of government services and information by mail.
>
> Technology is also being used to reduce the government's information demands on business.

2. Modernizing the Government's Internal Administration

The objectives in this area are to rationalize processes and systems across administrative functions and departments and thus improve efficiency and effectiveness; improve administrative support to program delivery; and reduce overlap and duplication so as to lower the cost of government administration.

Listed are some flagship projects related to government administration that are planned or underway:

Locally shared support services (LSSS) to help reduce costs to all departments. Public servants at all levels are participating in over 300 projects for sharing local area networks (LAN), security services, mail services, libraries, etc.

Sharing common computerized administrative systems, including the initial purchase, on-going maintenance and future upgrades, across the departments. This is expected to save $800 million over five years.

The use of electronic media monitoring whereby newspapers are clipped with electronic scissors and a spring board for electronic management to enable distribution of broader strategic information across government and thus enhance decision-making.

The redesign of the procurement and payment systems to co-ordinate these two important and related processes.

The redesign of the pay and benefits system so as to improve delivery of government compensation services.

3. Creating an Electronic Information Infrastructure

One objective in this area is to create a "virtual network" between departments across Canada, and eventually with client groups outside the government, for electronic delivery of both services and information. This "virtual network" will become the government's portion of the developing Information Highway. Other objectives are to provide staff with access to internal and external information databases and make specialized network services, common support, and information services available on an enterprise-wide basis, thereby achieving economies of scale.

Listed are some flagship projects related to the government infrastructure:

A Government Enterprise Network (the infrastructure for the federal government's equivalent of an information highway) is being planned for early implementation.

A government knowledge infrastructure is being developed that will allow the sharing of strategic information for operations and decision-making across departments and across the country.

IMPACT ON CANADIANS

The federal government exists to serve the Canadian public through programs in such areas as agriculture, citizenship and culture, education and training, employment and labour, the environment, foreign affairs, health and safety, immigration, international trade, industrial

development, national defence, natural resources, parks and recreation, public infrastructure, public information, regulated utilities, security and protection, social assistance, and taxation. The present approach to renewing government services through IT is aimed mainly at improving current services.

A. Potential Benefits

The client-oriented proposals outlined in the Blueprint should generate numerous benefits for Canadians, in addition to the obvious savings in resources. They should reduce the time spent by the public in obtaining access to government data and services, and should also improve these data and services.

Canadians and Canadian businesses can expect to have immediate access to government services virtually anywhere in Canada, rather than having to go through numerous departments or agencies. Some of the services offered should be available 24 hours a day, seven days a week, while others would be available during working hours around the country.

Public servants responding to Canadians are likely to be given increased authority, once services are re-engineered to use IT; this should result in prompter responses. As well, those serving the public directly should have greater flexibility in applying regulations to respond to exceptional circumstances.

Personal and corporate information could be integrated throughout the government so that individuals and businesses would need to provide basic information only once, no matter how many requests they made for government service. Similarly, delivery of numerous government services, such as old age security, veterans' benefits and unemployment insurance, could be merged. Thus, authorized government employees would be able to offer a more complete and customized range of services and advice.

There is an increasing awareness of the interdependency of all government programs. For example, discussions have already been held on redesigning the delivery of unemployment insurance in response to the need to integrate labour training and retraining. As well, provincial governments recognize the links between unemployment insurance and provincial welfare programs. Although not discussed in the Blueprint, the next phase of integration in the technological delivery of services and programs would involve both the federal and provincial governments so as to permit delivery of the full range of government services. Ideally, this integration could eventually extend to the municipal level.

B. Potential Pitfalls

The planned transformation of the federal government will have to avoid several major pitfalls, as the Blueprint discusses. Due regard to privacy and security issues will be essential; there would have to be assurances that information collected by law for one purpose would not inadvertently be used for others. The potential for misuse and abuse of the available information on Canadians and Canadian business will always be present and, even with built-in safeguards, will require further control measures or security auditing. Both the CIO and the Canadian Privacy Commissioner, Bruce Phillips, have discussed this issue and the CIO suggests that suitable safeguards should be possible.(25)

Members of the public may not be aware of what personal details are contained in government files; moreover some of the details may not be accurate and the creation and maintenance of government-wide common files on citizens could easily perpetuate such errors. A possible safety mechanism might be to ask all Canadians to verify a printout of their personal data held in government files.

The Canadian Privacy Commissioner presented some general rules for privacy in relation to informatics at the Professional Development Forum held in Ottawa in October 1994. Some of these rules are:

> privacy must be specifically recognized;
>
> networks must be governed by a code (in law);
>
> individuals must control the personal information they allow to be transmitted on networks;
>
> governments must receive only the minimum information to accomplish the task;
>
> service providers must not disclose information without the informed consent of the individual involved;
>
> information on individual transactions must be governed by a code;
>
> information must be protected (possibly by encryption);
>
> there must be no charge to individuals for privacy protection or to access their personal information in government files; and
>
> an independent oversight body must be in place to review privacy and ensure that it is respected.

(25) Bruce Phillips, Canadian Privacy Commissioner, "Naked on the Information Highway: Privacy in the Electronic Delivery of Government Services," presented at the Professional Development Forum in Ottawa, 25 October 1994.

Although the re-engineering process described in the Blueprint is supposed to be geared to the client, fiscal pressures are currently so strong that redesigned services run the risk of being more oriented towards cost savings.

IMPACT ON PUBLIC SERVANTS

The government's Blueprint recognizes that the successful implementation of service renewal will hinge on public servants. Although some changes will offer potential benefits for government employees, others may not be welcomed.

In re-engineering its services, the government will have to: help the public service workforce make the transition to the new culture; assess the composition and competency of the workforce; renew training and development; establish open communication and consultation; and empower employees, while giving them greater accountability. It may prove difficult to promote recognition of change as a positive force and to ensure that change is effected with sensitivity to the needs of both those within the organization and the clients outside it.

A. Potential Benefits

The full benefits from expanded use of IT and the percentage of employees likely to receive them remain to be seen. The following advantages are likely.

> For those who manage programs and support functions, the integrated use of IT will speed service delivery and allow more time to deal with clients' needs.
>
> Service renewal will automate mundane activities and reduce central controls or build them into systems supporting service renewal. New and enhanced skills will be required for an information-based operation focusing on service to clients. These changes should result in job enrichment, increased job satisfaction and potentially greater financial benefits for employees.
>
> Empowering employees will provide them with greater authority and flexibility in serving their clients (greater value-added service). These additional responsibilities could result in a higher job level and a corresponding salary increase.
>
> One possible benefit of re-engineering will be telecommuting. This will offer some employees a greater level of flexibility and reduce some of the costs associated with travelling to work.

B. Potential Pitfalls

People in general have a tendency to resist change and massive change is implied in the re-engineering of the government. The most obvious negative impacts on public servants will be job change and job loss.

One area likely to be subjected to cuts is administrative services support; a government-wide support system using IT will substantially reduce the number of employees required in that area.

Change will also affect working hours. Services that are independent of time and location may require employees to work split shifts, so that staff are available to deal with client needs from the start of business on the east coast to the end of business on the west. Selected services offering primarily automated response systems and available 24-hours-a-day and seven-days-a-week may require resource persons to be on call to respond to exceptional cases.

CONCLUSION

The government exists to serve the public and it is under pressure from taxpayers to provide better service with diminishing resources. For several years, the government has been attempting to use information technology to reduce the cost of its operations and in March 1994 it began a major initiative to renew government services by fully exploiting IT. The eventual result of this initiative should be improved service to both the Canadian public and Canadian business, though the necessary adjustment to changes will present significant challenges.

The possible impacts of such exploitation within the federal government are immense. The process will involve public servants in a great deal of change, some of which may be traumatic. The technical aspect of the task is the least difficult, particularly if change is implemented in stages, rather than all at once. Altering the attitude of public servants towards change and encouraging more sensitivity to client needs will be more difficult, particularly given the current poor morale within the public service as result of the fiscal climate, job insecurity and frozen benefit packages. What is needed is a balanced policy that fully considers the likely effects on people as it implements massive technological innovation.