A Holistic View of Public Sector Information Technology:

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Abstract

This paper outlines the research methodology, conceptual framework, and some preliminary research results for a longitudinal and holistic study of the impact and management of information technology in two governments considered by knowledgeable observers to be in the forefront, the federal Government of Canada and the Province of Ontario. The methodology involves close observation and periodic interviewing of public servants, questionnaires of politicians, and ongoing tracking of websites. The conceptual framework uses economic analysis to identify and describe demand, supply, and competition in a number of related markets that, taken together, add up to the IT sector in government. These include government services delivered electronically, e-consultation, and e-democracy. The supply side includes the construction and management of Internet sites, procurement, and staffing. A number of common issues affecting all these markets include the influence of cost and available resources, the necessity of organizational coordination, and the effect of the Internet’s absence of location on the structure of government.
Introduction

Are the terms e-government and e-democracy destined to become redundant? Will an increasingly pervasive application of information technology (IT) to government and politics make the “e” qualifier unnecessary? In ten years time, will government and democracy be electronic by definition? Many practitioners, especially public sector Chief Information Officers, believe so. This belief offers a challenge to scholars: to determine systematically the nature and extent of IT’s effect on the public sector. Will ten years prove IT to be transformative, or simply another fad whose time has come, and gone?

This paper attempts to lay the conceptual foundations for a research project that will develop a comprehensive understanding of the evolving role of information technology (IT) in the public sector. Briefly, the research represents a longitudinal and holistic study of the impact of IT on two governments considered by knowledgeable observers to be leaders in its application. The paper will develop a comprehensive approach for assessing the application and management of IT in the public sector, based on the demand and supply framework intrinsic to economic analysis. The model is based on observation and interpretation of the evolution of public sector IT in both jurisdictions.

The two governments being studied are the Government of Canada and the Province of Ontario. The time frame is the beginning of the current decade to the end of 2005. The consulting firm Accenture ranked the Government of Canada as the foremost national government in terms of e-government maturity for the last three years (Accenture, 2003). The Bertelsmann Foundation (2001) ranked Ontario third in its recent study of balanced e-government and the Commonwealth Association for Public Administration and Management (CAPAM) gave Ontario first prize in its (biennial) 1998
and 2002 international innovations awards because of its IT-based innovations in service delivery. Ontario has been a persistent innovator over the last decade, as it was in the forefront in employing electronic kiosks, building an all-electronic toll road, automating its land registry system, and introducing integrated industrial inspections\(^1\). An end date of Dec. 31, 2005 was chosen for the study because that is the federal government’s deadline for completion of its Government OnLine initiative and because both the federal and Ontario governments will have held general elections by that time.

The paper develops the component parts of an economic model for thinking about the application and management of IT in the public sector. These include the demand for IT in government, the different services being produced, and the production function for such services. Intrinsic to the model will be a discussion of the nature and extent of competition at each level. The paper concludes with a discussion of some common issues that are affecting all services.

**Research Methodology**

This research initiative represents a departure from previous research in the field precisely because it is holistic and longitudinal. Most previous studies have focussed on particular areas of technology, for example, e-democracy, electronic service delivery, or procurement. They have also tended to be comparative across jurisdictions (i.e., cross-sectional) and conducted at a given point in time, rather than over time. A longitudinal and holistic approach attempts to explain how all these aspects of public sector IT fit

\(^1\) The latter involves replacing several inspectors that would inspect a factory in a given year with one inspector armed with a program on a laptop.
together and how they evolve over time. The present study is supported by a major four-year grant from the Social Sciences and Humanities Research Council of Canada that began in 2002, and, given its ambitious nature, is engaging the efforts of a team of scholars. More information about the project and research team is available at the project’s website, www.publicsectorit.ca.

The study employs a variety of research methodologies. These include:

- Close observation of the experience of both governments in electronic service delivery and management of their IT functions, including periodic interviewing of civil servants

- Questionnaires, for example of IT use by politicians, to be repeated within the study period

- Ongoing tracking of relevant websites, for example both official government sites and party and political candidates’ websites.

The two jurisdictions the study focuses on are reasonably large in population. Canada has a population of 31.6 million, similar to California (34.5 million). Ontario has a population of 11 million, similar to Illinois (12.5 million), Michigan (10 million), Ohio (11.4 million) and Pennsylvania (12.3 million). Actually, population comparisons downplay the significance of the Canadian jurisdictions because both the Government of

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2 One researcher, based in an NGO in Ottawa, has worked closely with the federal IT community; the author is currently a scholar in residence with the Ontario Government, and thus has good access to the IT community there.
Canada and Canadian provinces have a larger set of responsibilities than states in the US. More relevant comparators would be the US federal government and the UK government, and two members of the team are providing comparative perspectives on them.

The Demand Side

The literature has developed a number of terms for public sector outputs that are delivered by means of advanced technologies, such as electronic service delivery, e-government, or e-democracy. We see the demand for delivery of public sector outputs through advanced technologies as ultimately being determined by the users of the outputs.\footnote{We do not intend to engage in the debate about whether or not to refer to users of outputs as citizens or clients or consumers. Those who prefer citizens reject the market analogy implicit in clients or consumers. On the other hand, non-citizens and non-residents are frequent users of public sector outputs, to that extent that, for example, the Government of Canada home page (www.gc.ca) starts with a three-fold distinction between Canadians, non-Canadians, and Canadian businesses. We consider users of outputs to be a more neutral term.} We choose the term public sector outputs as it is broad enough to encompass not just services but also political processes such as consultation, lobbying, and elections.

Public sector outputs delivered through advanced technology (call them OATs) are competing with public sector outputs delivered through traditional technologies (call them OTTs). Of course, the definitions of advanced and traditional technologies change over time. At present, Internet and electronic kiosks are considered advanced...
technologies, with post and over-the-counter traditional technologies, and telephone and fax somewhere in between. Technologies might be subdivided between those that are entirely automatic (for example, Internet, kiosk, fax, automated voice response system) and those that incorporate human input (for example telephone and over-the-counter).  

The slogan of the Clinton Administration’s Reinventing Government (REGO) initiative, “government that works better and costs less,” is a good shorthand for the factors influencing modal choice. Users of public services are looking for the mode that works best and, to the extent that cost is a relevant factor, costs least. The Citizens First surveys conducted by Erin Research for the federal-provincial Public Sector Service Delivery Council over the last five years have found a set of relatively consistent drivers of satisfaction with public sector service quality (Erin Research, 2003). In general, the five key factors, in order of importance, are speed (i.e., time needed to provide the service), staff competence, courtesy, fairness, and outcome. For web-based delivery, the drivers, in order of importance, are navigability, outcome, visual appeal, and completeness of information.

The “costs less” side of REGO includes both costs borne by the user to access a service (for example, traveling to a government office) and user fees. In most cases, public sector services are delivered without user fees. In some instances however, particularly services to business, there have been attempts to cost out services by mode and base user fees on modal costs. Businesses are sensitive to differential user fees and, ceteris paribus, will shift to the lower cost mode. The overall cost of service delivery is of

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4 The Ontario government currently considers a service to be delivered electronically if it is delivered though automatic technologies alone.
at least some concern to politicians and public servants. Operating expenses account for
14 percent of the Ontario government’s and 27 percent of the federal government’s total
expenditures; if technology could lead to major reductions in operating expenses, they
could reduce taxes or free up tax room for new programs.\(^5\)

While the demand for public sector outputs delivered by OATs as opposed to
OTTs is influenced by relative service quality and costs, it is also determined by the
characteristics of the user. Thus, numerous studies of the digital divide (for example,
Norris 2001) show that higher income and more education increase the demand for OATs
as opposed to OTTs. Age currently has an inverse effect, in that, ceteris paribus, younger
people tend to prefer OATs to OTTs. This raises some interesting demographic questions.
Is this because the take-up rate for this OATs is higher among the young than the old,
with the implication that as younger generations replace older ones, the rate of OAT use
among the elderly will catch up with the rate among the young? Or do people who started
to use computers and the Internet when they were young stop using them as they get
older, which would imply that the current relationship would persist?

While the distinction between OATs and OTTs is generally posed in terms of
government services, it could also be posed in terms of public consultation and political
processes. What determines citizen preferences between OATs and OTTs for
participating in the policy and electoral (seeking information for voting decisions,

\(^5\) Operating expenses include personnel costs, transportation and communications,
services, supplies and equipment, and acquisition and maintenance of land, buildings, and
machinery. See the 2002-03 Government of Ontario Estimates (www.gov.on.ca/mbs) and
political donations, and voting) processes? In this context, the term citizen is appropriate, given that at least some political rights are restricted to citizens. The conceptual framework used in the Citizens First studies has hitherto been applied only to services, but could readily be extended to public consultation and political processes.

Finally, we observe that competition is intrinsic to the notion of demand for public sector outputs. Users choose among competing ways of offering services. While a government may decline to offer services via one or more modes, users of public sector services are also consumers in the market place, and expect public sector services to be available through technologies similar to those available in the private sector.

We can conceive of two types of competition in terms of modal delivery. On the one hand, there is likely to be competition among modes within the bureaucracy. For example, if a government is contemplating introducing a website for the delivery of a service hitherto available only over-the-counter, managers and employees of over-the-counter services, wanting to keep their jobs, will argue against Internet-based service and will try to find ways to make their own mode more attractive. For example, call centres are a way of providing one-stop shopping by telephone for public services. Thus, we can expect competition among the public servants responsible for Internet-based service, call centres, and over-the-counter services. If service evolves over time in such a way that a given mode gains popularity, we can expect inter-institutional competition for control of that mode. For example, if strong citizen preferences for e-consultation emerge, we could

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6 The Erin Research (2003) studies show that roughly 50 percent of service transactions involve multiple modes. This finding would argue for the creation of multi-model service delivery organizations to induce cooperation rather than competition among modes.
then expect competition among the bureaucracy, the party in power (especially as represented by the head of government), and members of the legislature for control over the e-consultation channel.

**The Supply Side**

There are now many examples of public sector outputs delivered by advanced technologies. These include information and transactions available over the Internet; transactions available at electronic kiosks; user fees delivered electronically, for example on toll roads; channels for e-consultation, whether through government departments or politicians’ websites, and, a few experiments in electronic voting.

A significant issue for research on the supply side is the nature of the production function for these services. Production involves a number of components, or factors of production, including hardware, software, systems integration, and people. One key consideration for each factor of production is the nature of its factor market. When government purchases goods and services, the easiest situation is a standardized good that is not unique to a particular jurisdiction purchased in a market with many actual or potential suppliers. Globerman and Vining (1996) refer to these three characteristics respectively as low task complexity, low asset specificity, and high contestability. Conversely, the most difficult situation involves a complex product (high task complexity) that is unique to a particular jurisdiction (high asset specificity) and few actual or potential suppliers (low contestability). There exists a continuum from the easiest to most difficult case. Consider each of hardware, standardized software, people, and specialized systems in terms of this continuum.
Despite rapid technological progress, basic computer hardware (e.g., desktop and laptop computers and printers) has become increasingly standardized, with many competing producers, and a large market that includes businesses, consumers, and government. Government procurement systems have become adept at delivering virtually instant procurement, through either purchasing or leasing. Because government is a large purchaser, it can receive volume discounts. Instant procurement and volume discounts also characterize government’s role as a user of standardized software, even though many segments of that market are dominated, if not monopolized, by Microsoft. The move to utility computing, involving the renting of software based on use, would also benefit government, given its status as a heavy user of software.

The labour market for IT professionals was a seller’s market during the dot.com boom of the last decade, and governments had difficulty staffing positions in that area. The problem was accentuated by the one-time demand created by the Y2K transition. The dot.com collapse has cooled the market for IT professionals, and as a consequence governments face less competition for IT professionals. In some sub-fields, such as website development, there now exists standardized software and a large pool of people with the relevant skill, so that government can hire the web developers and webmasters it requires at competitive salaries. Help desks are another area in which staffing has become easier. In other sub-fields, such as systems architecture and high-level IT management, the pool is smaller, and competition with the private sector continues to be intense. While governments have increased salaries in those areas, they still pay less than the private sector. One factor used to attract employees is the nature of the work; as will be discussed below, work in the IT area in the public sector poses problems of greater complexity than
those in the private sector, so that public sector employees have the intrinsic challenge of working on truly cutting edge problems. This has the additional benefit of increasing their attractiveness to the private sector at a later point in their careers.

The most difficult competitive context for government concerns the acquisition of specialized systems. Governments require such systems when replacing mainframe-based systems that are now obsolete or attempting major reengineering projects. We will refer below to Ontario’s experiences in contracting to reengineer its justice system and income support program. Specialized systems are characterized by high task complexity, high asset specificity, and low contestability. The procurement of specialized systems is usually contracted out, but the relationship with contractors involves extensive negotiation, and carries great potential for a conflicted process and unsuccessful outcomes (Globerman and Vining, 1996).

The Production Function: Specific Services

Given these general considerations, we can now examine the production functions for specific services, in terms of whether they are produced internally or contracted out, and the ongoing challenges governments face in terms of successful management. We will look at the following cases: government Internet sites, involving both information and transactions; procurement of specialized hardware or systems; and e-democracy, namely e-consultation and the political use of the Internet.

Public Services on the Internet
Given the availability of both standardized software for creating websites and a large pool of trained website developers at affordable salaries, most public sector website production is now done internally. The ease of website development, however, poses a co-ordination problem. If any department can develop its own website, a government’s web presence may end up being a loose alliance of departmental sites lacking a common look and feel. Some governments, for example, the State of Texas, do not require departments to affiliate with the state web site, and indeed many opt out. In contrast, both the Government of Canada (www.gc.ca) and the Province of Ontario (www.gov.on.ca) have tried to create a strong web presence, requiring all departments’ sites to be part of the official website and to have a common look and feel. In Ontario, the Premier has reserved to himself ultimate authority over strategic decisions about the website.

One of the important principles of website design is organization on the basis of user needs rather than departmental identities. Both the federal and Ontario websites, like those of other leading edge governments, present their upper level pages in terms of issues (for example employment), demographic or interest groups (e.g., youth, the elderly), and life events (getting married). In contrast, departments or agencies must be searched from a sidebar. Presentation on the basis of issues, constituencies, and life events cuts across departments at any level of government and often requires linking to other levels of government. This leads to an organizational, as opposed to technical challenge, namely how to bring together all the different programs relevant to an issue, constituency, or life event. The federal government organizes its web site on the basis of 35 service clusters, and has established an interdepartmental cluster management board for each. One of the elements of our research will be a study of the functioning of these
boards. These boards (and similar coordinating structures in other jurisdictions) do not necessarily restrict themselves to organizing existing programs on the website; they may go the next step to study cross-program impacts and make proposals to rationalize programs. They thus provide the potential for bottom-up interdepartmental and intergovernmental cooperation.

Studies of government websites often make the implicit assumption that providing information about programs is a basic function, while providing the capacity for transactions is more advanced. While this is true technologically, it overlooks the significance of posting public sector information. Government has vast data holdings that encompass archival records, economic and census data, environmental and land use records, and public sector performance reports. Making these records available online dramatically improves availability and lowers cost for users, especially those with faster computers. Of course, preparing the material for online presentation entails substantial cost, particularly the fixed cost of establishing the basic infrastructure. The issue here is how those costs will be covered. In some cases, such as highly disaggregated economic or census data, the federal government operates as much as possible on a cost-recovery basis. In other cases, such as making available the holdings of the Public Archives of Canada, there is no attempt to impose cost recovery, but rather the Archives seeks out public and private partners to help it cover costs (Wilson, 2002).

In its attempts to provide transactional capability over the Internet, the public sector faces more significant technological challenges than those confronting the private sector. The public sector is already providing simple one-time commercial transactions over its websites. Services available to anyone, anywhere in the world, include
purchasing publications or a seasonal hunting licence, or booking a campsite. In addition, governments have provided the capacity to file certain taxes electronically. Electronic tax filing rests on the assumption that, since taxes represent a cost to citizens, no taxpayer has any incentive to impersonate any other taxpayer.

Much of the role of government in society involves the provision of expensive multi-year entitlements, such as social insurance and passports at the federal level, and birth certificates, driver’s licenses, and medical insurance at the provincial level. As an economically advanced country with an exceedingly diverse population, entitlements to Canadian citizens and residents are extremely valuable, so that forged certificates carry a high value on the black market. The cost to government in terms of resources and potential threats to national security of giving entitlements to those who do not qualify is substantial. Thus the two governments are making substantial efforts to ensure that their identity and entitlement documents are given only to those who are truly entitled. For example, applicants for passports and birth certificates require a guarantor from certain designated occupational groups. While the application for a birth certificate in Ontario can be downloaded and the completed form faxed to the registry, the use of a guarantor makes it difficult to conduct the entire process online.7

The next step in increasing transactional capacity online therefore is an effective system of authentication, that is a unique electronic identity that qualified individuals can use in electronic transactions with government. According to Ontario corporate CIO Greg

7 This would be considered electronic service delivery in terms of Ontario’s current definition. Online delivery would involve email among the applicant, guarantor, and registry office and electronic signatures for both applicant and guarantor.
Georgeff (2003), without authentication, the public sector has gone about as far as it can in providing Internet-based transactions. The federal government is constructing its Secure Channel, which will enable departments and agencies to transmit and store electronic information securely and to identify qualified individual clients, the latter by means of a registration/authentication service called epass.

**Procurement of Specialized Hardware and Systems**

Procurement issues arise out of either necessity or opportunity. In many instances (for example, air traffic control) legacy systems using outdated software operating on mainframe computers have reached the end of their useful life and must be replaced. In other instances, politicians and public servants see the potential for process reengineering to improve performance and reduce cost by providing integrated systems in a particular policy area.

These projects entail the acquisition of specialized hardware and or software systems. Large upfront investments are required, with the hope that operating costs will be reduced and/or service improved relative to the legacy systems. There are two key problems in making these investments. The first is that governments will be stretched to find the funds for the initial investments if they are already running deficits. The second is that government does not have the expertise to build these complex systems. They must be contracted out, yet there are few actual or potential suppliers.

Ontario has had substantial experience developing such reengineering projects in a resource-constrained environment. Four major projects in the last decade have included the construction and maintenance of a province-wide system of electronic kiosks, the
building of an electronic toll highway, business reengineering of the family assistance program, and the introduction of case management in the justice system. The province was running large deficits in the Nineties and therefore wanted to avoid making the initial investments itself. As a consequence, it looked for private sector partners to make the initial systems. These included IBM in kiosks, a technology consortium of Hughes Aerospace and Bell Canada for highway tolling, Accenture for the family assistance program, and a consortium led by EDS for the justice system. In two cases – the electronic kiosks and the toll road – the projects were clear successes; one, business reengineering of family assistance had cost overruns but still produced net benefits; and the fourth, the integrated justice system was a failure that did not come to fruition (Borins, 2003). These cases provide some basis for generalization as to what distinguished successful from unsuccessful procurements.

The family assistance and integrated justice projects both operated under a procedure known in Ontario as common purpose procurement. (Variants on this approach have undoubtedly been used in other jurisdictions). The government first chooses the most capable partner, rather than lets a contract. The government and the partner design the project jointly. Project definition includes both the work to be done and a methodology for measuring benefits to be achieved. Then a contract is signed, along the following lines. The government and its partner both contribute resources (known as the cost pool) and, once benefits have been achieved, share the benefits in proportion to the resources they have contributed to the cost pool. If the benefit pool ultimately is not

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8 As will be discussed below, these projects are sufficiently complex that the private sector partner is often a consortium rather than an individual firm.
larger than the cost pool, both lose money. The objective of this approach is to create a common interest on the part of both the government and its partner in making the project succeed.

The two common procurement cases demonstrated that there were still difficulties in making the partnerships work. In both cases, the private sector partners were management consulting firms that do not carry very much working capital and therefore are accustomed to being paid on an ongoing basis. They are unlike software developers or aircraft manufacturers that make large upfront investments long before their products come to market. The partners responded to this unaccustomed uncertainty of return in several ways: trying to claim as large a share of the cost pool as possible, in particular by incorporating high overhead charges into per diem fees, because overhead does not represent actual cash flow; attempting to renegotiate the agreement with the government to be compensated as soon as benefits start to accrue; and attempting to keep some services outside the common procurement framework and thus payable when rendered. From the partner’s point of view, there are risks involved in dealing with government, such as the risk that government staff will be unable to perform their tasks on schedule or that political decisions will change the nature of the tasks. Building in a profit margin at the outset and maximizing cash flow are ways the private sector tries to protect itself from risk. Obviously, the private sector’s risk aversion creates difficulty for the public sector partner.

Given the difficulties inherent in these partnerships, governments must develop the capacity to manage them effectively. This capacity is not necessarily something found within the public service, and government may have to look outside. Two of the cases,
the toll road and the family assistance reengineering project, displayed such expertise. The consortium building the toll road was monitored by a Crown corporation created specifically for that purpose that hired expertise from both the public and private sectors and that had a board of directors with private sector expertise. After some initial difficulties, the provincial government hired as project manager a former federal deputy minister of supply and services who, after leaving the federal government, had worked in the technology area in the private sector.  

These procurement cases also revolve around the management of inter-organizational alliances. The factor that doomed the integrated justice project is that, on the government side, it consisted of a complex coalition including the courts, the police, the Crown attorneys, and the corrections system. Some members of the coalition made unrealistic technological demands, for example systems requirements that were too detailed for software developers to implement or digital court recording that demanded far too much broadband capacity. Other members of the coalition, in particular court staff, dragged their feet because of concern over job losses. This story is consistent with the case studies in Fountain (2001) of difficulties implementing systems to be used by complex coalitions of government agencies.

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9 The UK Government, in a review of difficulties experienced with large IT projects, also makes the point that it is essential for government to develop skill in the management of external suppliers (Parliamentary Office of Science and Technology, 2003).
Managing a consortium is equally challenging on the private sector side. Consortia are also necessary because to bring expertise to specific aspects of the project, but they require strong leadership to ensure each member of the consortium meets their commitments. Though the electronic toll road was ultimately a successful project, the Bell Canada – Hughes Aerospace partnership was a difficult one, and it missed its deadlines by several months.

Ontario’s experience in managing partnerships where the private sector is asked to front the costs may become increasingly relevant to the US government and states, given the magnitude of the deficits both are facing. On the one hand, US governments may resist spending more on IT when running deficits; on the other hand, IT investments that have the potential of reducing costs may look attractive (Eggers, 2003). Private sector partnerships that reduce upfront costs – the option Ontario followed in the Nineties – may appear to be the best alternative.

E-democracy

E-democracy, at least in its initial stages, is based on Internet technology. As was discussed above concerning the delivery of public services over the Internet, the technology is standardized and inexpensive, and web site development can be conducted in-house. Even so, it is at an earlier stage in its development than electronic service delivery for two reasons. First, we know less about citizen demand for e-consultation and electronic access to the political system than about demand for government services. Second, to move from providing information to undertaking meaningful political transactions over the Internet requires major progress in authentication. For example,
politicians reading their e-mail and governments undertaking e-consultation initiatives want to know whether the messages are from their constituents or from outside. Voting over the Internet, while appealing as a way of attracting the Internet generation to political participation, requires foolproof authentication.

Both the federal and Ontario governments display tentativeness in their movement towards e-democracy. In e-consultation both are experimenting with consultation on particular topics being hosted on departmental websites (Deibert, 2003). They also have working groups that are developing basic policies for e-consultation. Some of the issues they are considering include whether to ask for a mailing address to determine if the originator is a citizen or resident, whether or not to post all (or merely representative) comments and, if comments are posted, whether to introduce some type of moderator into the consultation.

The easiest consultative processes to convert to an electronic basis are those that are clearly structured with a limited number of potential interveners, all of whom are well acquainted with Internet technology. An example of this would be regulatory decisions by a securities commission or rate-setting tribunal. The Ontario Securities Commission conducts consultations over its website, and makes all submissions available on the site.

Another aspect of e-democracy is the representation of legislators on government websites. Both the federal and Ontario governments display a clear hierarchy. The Prime Minister of Canada and Premier of Ontario are the most visible politicians, with websites containing both biographic information and information about major policy initiatives immediately accessible from the home page. Ontario Premier Eves’ site occupies a full right-hand sidebar on the home page and the news section in the centre of the page
usually includes one or more stories involving the premier, with the result that on any
given day the home page is likely to include at least two photos of the premier and
several mentions of his name. In contrast, Prime Minister Chretien’s site is accessed from
a box on a sidebar and neither his name nor photo is displayed prominently on the home
page. We can attribute the difference in visibility in recent months to the fact that Ontario
will be holding an election on October 2, 2003, while Prime Minister Chretien will leave
office next winter. Cabinet ministers in both governments have photos and biographies
on their departmental home pages.

Backbench legislators simply have short biographies and e-mail addresses listed
on their legislature’s site. Both the federal House of Commons and the Ontario
Legislature do not provide links to members’ personal websites. If members want to
develop websites of their own they can do so at their own expense or using their office
budgets, but these sites are not linked to the legislature’s official site. It appears fewer
than ten percent of the members of the Ontario Legislature have developed their own
websites. (Some of the earliest sites, ironically, were registered in the US under the .com
domain because the body regulating the .ca domain did not at that time permit individuals
to register sites in their own name.) This differs from the situation in the United States
government, where members of Congress are permitted to develop elaborate websites

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10 Once Premier Eves called the election, however, the official government website was
frozen, permitting no new stories regarding policy or politics. The Premier’s policies may
be seen on the website of the Progressive Conservative Party, which he leads.
that are part of the official Congressional site. The non-elected and much less powerful
Canadian Senate permits senators to link their private sites to the official site and, as of
writing, 24 of 105 senators have links.

Why have Canadian back-benchers been so slow to seek a more visible Internet
presence, or indeed, to embrace most forms of IT? Strong party discipline prevents
backbenchers from creating their own platforms or presenting their own voting records,
so their websites could not, at least in these respects, differ from the party website. The
falling (and now low) cost of creating and maintaining a website, however, should be an
inducement to MPs or MPPs to do so independently. MPs and MPPs often hire students
or interns with strong computer skills, and these would be likely people to create and then
maintain their sites. Kippen and Jenkins (2003) report that the Liberal Party of Canada
has developed a suite of software to assist MPs in managing constituency cases and
campaigning, but that fewer than 10 percent of Liberal MPs have adopted it. Perri (2003),
writing about UK MPs’ similar lack of enthusiasm for new technology, describes
them as “regarded as, and behav[ing] as little more than vote fodder for the party
leadership” who think of “the advanced tools of e-governance [as] pretty toys, but at once
over-powered to be worth investing in, given what can feasibly be achieved, and yet also
curiously abstracted from the round of day-to-day miseries encountered in her
constituency or ward.”

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11 This distinction exists in other organizations. Some universities permit or encourage
faculty members to develop personalized sites linked to the official site, while others
require them to complete a standard template that is part of the official site.
Since April 15, 2003 there have been four provincial elections (Quebec, Manitoba, New Brunswick, Nova Scotia) and one federal leadership contest (Progressive Conservative). These have provided an opportunity to define the emerging state of the art in Internet use by political parties. By and large, the party websites are used to provide information about the party platform, the leader’s tour, local candidates, a link to the official electoral office, and limited transactions, such as opportunities to donate money and to volunteer. The most advanced websites were those of the Parti Quebecois and Quebec Liberal parties; they changed daily to reflect the latest issues in the campaign, and incorporated attacks on the other party. The party websites in the Ontario election also change daily, carry frequent attacks on the other parties, sometimes quoting policy experts, and enable the browser to view their television ads. In some instances, the television ads advise the viewer to consult the website for more information about party policies. The morning after the televised leader’s debate, each site contained stories claiming victory. A federal election campaign is likely in 2004 and it will also be monitored closely.

The Internet has also demonstrated itself to be an effective arena for political gossip and rumour. There are two examples from the recent Canadian campaigns.

- Two law students created an unofficial site about the Conservative leadership campaign (www.torydraft.com) that carried rumours and inside information. It was receiving up to 60,000 hits per day, far more than the official party site, and was consulted daily by reporters.

- The key turning point in the Quebec election came in the televised leaders’ debate when Liberal leader Jean Charest attacked (Parti Quebecois) Premier Landry over
allegations that former (Parti Quebecois) Premier Parizeau had reiterated the comments he made after the 1995 election blaming the outcome on money and ethnic voters. Parizeau’s comments had first been reported by a local newspaper in Trois-Rivieres and were circulated on an independent Quebec media site, which is where they were noticed by Charest’s staff, which gave him the key question in the debate. Landry was not briefed about the story, and appeared hesitant and defensive in the debate.

Common Issues

The different public sector services described above are not unrelated. There are a number of common issues that affect them all. These include the cost of a technology and resources available to government to acquire it, the need for organizational cooperation in developing and managing technology, and the overall organizational capacity required to manage a portfolio of services and technologies. In addition, the Internet’s absence of physical location challenges traditional government structure. Ultimately, there are important choices any government must make in managing IT.

In the area of cost and resources, we saw how technologies that become low-cost and standardized are either dealt with through a straightforward procurement process, in the case of basic hardware and off-the-shelf software, or are internalized into government (such as website production). Complicated, expensive, non-standard projects are the exception, and they are contracted out in thin markets, require careful monitoring, and run substantial risk that the results may not live up to expectations.
Progress in applying IT to government is a function of the level of resources a
government is willing to commit. Governments are already spending heavily on IT, at a
level of roughly 10 percent of total expenditure on government operations, which
translates into $50 (US) billion for the US federal government and $5 billion (Cdn) for
the Government of Canada. Much of this spending goes to cover staff and routine
procurement. The interesting question is how much is devoted to new priorities in the IT
area, such as development of transactional capacity on websites, or new process
reengineering projects. For example, the Government of Canada is spending nearly $900
million Cdn between 2000 and 2005 on its Government Online initiative, much of it to
support the development of authentication software. The Government of Canada has had
the fiscal capacity to make this expenditure because it has been running surpluses and
reducing its debt burden for the last five years. If the Government of Canada’s finances
stay strong, it will have the resources to maintain its position as – at least according to
Accenture – the global leader in e-government.

The Government of Ontario was financially constrained during the early Nineties,
but moved ahead on its process reengineering initiatives by inducing private partners to
share development costs in its common purpose procurement projects (integrated justice
system, family assistance); by allowing IBM to cover its costs in building and
maintaining electronic kiosks by charging a $1 transaction fee; and by paying back its
borrowing for the electronic toll road with user fees. If the US government and many of
the states remain in deficit, they will likely consider similar approaches.

Organizational cooperation is a key success factor for many IT initiatives. Users
want websites organized on the basis of issues, demographic groups, or life events, rather
than departmental mandates. Departments offering programs relevant to each must cooperate on website development and management. Because many service transactions involve several modes, some governments are undertaking multi-modal service delivery initiatives to coordinate across modes. Reengineering projects often involve processes that cross departmental boundaries. When IT projects are contracted out, the contractor is often a consortium. Hence, public management knowledge about how to encourage inter-organizational cooperation is directly relevant to the success of IT-based initiatives.

Technology is also facilitating closer relationships among organizations, as the following examples demonstrate

• Canada’s National Library and Public Archives have always been separate institutions with distinct enabling legislation; sharing a building and technology infrastructure has led them to propose a merger (Bill C-36, currently being considered by Parliament).

• Two key federal ministries, Human Resources Development Canada, which provides benefits, and the Canadian Customs and Revenue Agency, which collects taxes, together deal with 85 percent of Canadian citizens and businesses. They have begun working together on both back-office (e.g., shared server farms) and front-line integration (d’Auray, 2002).

• Rather than each department having its own CIO, the Government of Ontario has appointed CIOs for seven clusters of related departments (e.g., land and resources, justice, economic development) to facilitate projects that cross departmental boundaries.
Governments need a variety of IT professionals to deliver in-house initiatives, such as better websites, and to oversee outsourced projects. These individuals must also fit into an organizational structure that manages IT effectively. Both the federal and Ontario governments have put in place relatively centralized IT management structures, at least as compared to some of the looser and more decentralized approaches taken by some American states. The corporate CIO in the Ontario government is a deputy minister level appointment in Management Board Secretariat. His office is responsible for strategic planning and, through Management Board, for influencing implementation, especially as concerns funding. The seven cluster CIOs mentioned above report to both the corporate CIO and the deputy ministers in their departmental cluster. The corporate CIO in the federal government is an Assistant Deputy Minister within Treasury Board Secretariat. While federal departmental CIOs do not report to the corporate CIO, like her counterpart in Ontario, she has influence over Treasury Board spending decisions on technology, and, as discussed above, the federal government is investing more in IT. Both the federal and Ontario CIOs are well-positioned to coordinate the development of their respective websites, to conduct strategic planning, to set and implement priorities, and to direct the evolution of IT in their respective governments.

The locationlessness of the Internet refers not simply to physical location – an observation often made in discussions of e-business – but also to organizational location. Users of websites seek thematically organized services and information and care little for departmental boundaries. This creates pressure for interdepartmental cooperation in the short term, and may well lead to interdepartmental integration. This has already proved to be true of service delivery, and will likely apply to e-consultation. If governments move
ahead with e-consultation initiatives, citizens will likely disregard departmental proprietorship about a particular topic. This will be especially true for topics that cross departmental boundaries. Just as we see service delivery organized in user-friendly ways on governmental home pages, we will see e-consultation initiatives organized in a user-friendly way on the home page, rather than scattered across departmental home pages. MPs and MPPs, to the extent that they move forward in developing their own websites, may attempt to use them for e-consultation as well. Obviously, the policy process is complicated, and e-consultation, wherever it is hosted, will be one input among many. Still, governments will soon provide a one-stop arena for e-consultation.

Our final point is that there are many choices governments can make about the evolution of IT. They can decide how much to invest, which processes to attempt to reengineer, what sort of partnerships to seek and how to manage them, how much to centralize their websites, whether to have a strong CIO or a weak CIO, and how to balance the web presence of the Government with that of legislators. These are early days in the history of e-government and e-democracy. The options are open, and there will likely be a wide range of choices made by different governments. Ontario and the federal government are moving forward with relatively centralized leadership within the bureaucracy, a willingness to invest substantial resources, and committed leadership by Cabinet (as opposed to Parliament). This formula is putting them in the forefront internationally. This research project will follow the consequences and fate of these choices over the next few years.

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12 The exception to this might be well-established constituency specific consultative processes that maintain their location on departmental websites.
References


