The Unfulfilled Promise of Information Management in the Government of Canada

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Abstract

The advent of new information and communications technologies in the 1990s gave a more prominent role to information management (IM) as a discipline of public administration, offering the prospect of knowledge-based government in the knowledge-based economy and society. In the federal government, the promise of IM enabled by networked computing and database technologies has been highlighted by the move towards citizen-centred service and the provision of information-based services to the public. There has also been a growing recognition in many areas of government that their knowledge base is a defining element and a significant asset.

This promise has not been fully realized, however, for a number of reasons. These include the historical neglect of information and records management in public administration, compounded by the lack of a unified understanding of what those activities encompass or even of how they relate to each other. There has also been a weak recognition and consequent undervaluing of information as a public resource, compounded by increasingly poor management of that resource in the electronic era. Vulnerabilities arise across the board, from the practices of individual public servants to government-wide 'enterprise' information architecture. The treatment of IM as a sub-set of the management of information technology has been another limiting factor, as have wariness at the political level and a weak connection to senior public service governance structures and the public sector reform agenda. The latter two elements are particularly important if the full potential of information and knowledge management is to be realized.

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"Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?"
(T.S. Eliot, "Choruses from *The Rock*" 1934)

Information, and its management, presents one of the great paradoxes of modern public administration. It lies at the heart of decision-making and the relationship between government and the governed. At the same time it is so deeply engrained that it is difficult to address and easily overlooked as a focus of management attention. Considerable effort and a legion of public service jobs are devoted to acquiring and generating information, using it for immediate purposes and then retaining, sharing, re-using, disseminating, protecting and destroying it – yet the government's information holdings are assigned no value as an asset in the Public Accounts. Information exchanged in a meeting can have immediate importance but will have no lasting existence unless recorded in some form, while a Social Insurance Number file opened for a new-born child serves little current purpose but provides the framework for a relationship that can last a century or more.

In technology-enabled government, information defines many of the services provided to the public[1]: it is given away but it is also sold and has its own economic model (Tapscott 1996). Access to information is seen as a cornerstone of accountable and honest government (Robertson 1978), but the use of statutory mechanisms to gain access to information has become politically contentious (Pugliese 2010). Information availability is central to exercising the rights and obligations of citizenship; control of the apparatus of government communications has become central to modern politics.

Over time, information has been held in a wide range of media and formats, although hand-written and printed paper records have dominated for most of Canadian administrative history. With the advent in the past two decades of networked computing and databases, the Internet and related information and communications technologies (ICTs), there has been a growing recognition in governments that their knowledge base defines their role in the knowledge-based economy and society and is a critical resource (Lenihan et al. 2002). This has highlighted the importance of managing the government's information holdings, a challenge in itself; it has also fuelled a more ambitious vision of knowledge-based government (Tapscott 1997), harnessing the potential of technology to the skills and experience of public service staff and making fullest use of what it knows in support of more effective public policy and public administration (Bontis 2007). As the largest holder of information in the country, the federal government's own information management (IM) practices and information-based services to the public are central to the realization of this vision. This in turn gives greater prominence to IM as a discipline of public administration.

The promise of information and of knowledge-based government has not been realized, however, and deficiencies in the management of information are a major concern among senior managers in all levels of government (Brown 2007: 60). In the federal government, which is the focus of this paper, this situation can be explained for a number of reasons, many of them rooted in the circumstances of the government's institutional response to the widespread introduction of information and communications technologies in the 1990s and subsequent developments. Five sets of reasons are

particularly important and provide the core of this paper. These include: the historical neglect of information and records management in public administration; the lack of a unified understanding of what IM encompasses or of how the various elements relate to each other in the face of the wholesale adoption of new ICTs; tensions and unrealized synergies within and among the information policy areas, compounded by disciplinary differences among the related communities of practice; weak recognition and consequent undervaluing of information as a public resource; and fluctuations in IM governance and a weak link to broader public service governance and reform.

The main body of this paper addresses these reasons in turn. Individually each represents a significant challenge to effective management and use of the government's information holdings. Cumulatively they have made it very difficult to realize the potential of information-based government. In addressing these issues it is important to understand the nature of information and the impact on it of contemporary ICTs. This is where the paper begins.

Context: Information and Technology

In public administration, information has a value-added connotation. There is no standard definition (Rowley 2008), and the Oxford Canadian Dictionary definition includes "something told, knowledge, items of knowledge, and data as processed or stored by a computing system." These elements can be loosely linked into a continuum: a datum is an item of information, information is a collection of such items, and knowledge is an array of information. Information theorists have described an ascending hierarchy, often portrayed as a pyramid with a fourth level, wisdom, at the apex (Rowley 2007: 164). Often referred to as the DIKW hierarchy, its elements are assigned a wide range of definitions and usages (Zins 2007); each level is typically defined in terms of a value added or judgment applied to lower levels.

A concept that has had a more direct influence on public sector IM is the information life cycle. Borrowed from the archival community, the information life cycle was incorporated into Treasury Board IM policies in the aftermath of the passage of the *Access to Information Act* [R.S.C. 2009 c. A-1] in 1983 and its galvanizing requirement that documents requested under the *Act* be produced within 30 days. Four stages are particularly important: the acquisition of information, whether internally generated or from external sources, its use, its maintenance and preservation beyond initial use, and its ultimate disposition, normally either permanent preservation or – in the majority of cases – destruction . The government's life cycle model includes three other stages intended to provide a more systematic IM approach: planning before collection, organization after acquisition, and evaluation after disposition – setting the stage for planning a new cycle.

The information life-cycle has been used to provide conceptual linkages and coherence among the various Treasury Board IM policies, building on the core IM policy, which embeds the cycle as a whole (Canada TBS 2007a). The Access to Information (ATI) policy (Canada TBS 2008a), based on the *Act*, is concerned with organization and dissemination – in response to requests under the *Act* – as well as protection in the case of exemptions. Its companion, the Privacy Protection policy (Canada TBS 2008b) addresses the same concerns as ATI with respect to requests from

individual Canadians for records held by the government about themselves. Based on the *Privacy Act*, [R.S.C. 2009 c. P-21], it also regulates the collection, use and re-use of personal information, and has a general orientation towards information protection. The Government Security policy (Canada TBS 2009), especially when first developed in the late 1980s, is cast in terms of protecting government information, based on threat and risk assessment and ensuring appropriate protection to information deemed sensitive.

The reverse side of the coin is information dissemination. Complementing Access to Information and Privacy (ATIP) access provisions, the Communications policy (Canada TBS 2006) is designed to promote publications, advertizing and other forms of public information dissemination. Through its regulation of public opinion research, the policy is also concerned with information collection by the government. The Federal Identity Program (FIP – Canada TBS 1990), which is closely related to the Communications policy, establishes corporate identity standards for government institutions, with a view to enhancing the visibility of government activities and through that their accessibility and accountability. An extension of the FIP has been the establishment of a "common look and feel" for the federal presence on the Internet, including standards for web page design and navigation and for promoting on-line accessibility.

At the end of the life cycle are rules established by Library and Archives Canada (LAC) governing the eventual disposition of government records (Canada LAC n/d), beginning with procedures for departments to screen out records not needed for current business purposes, leading to their transfer to LAC and decisions about destruction and long-term preservation. LAC has also sought to move "up stream" to regulate e-mail, a particularly problematic area (Canada LAC 2008). While only a minority of files are kept for the longer term, considerations supporting retention include providing evidence for the historical record, future business requirements of departments and long-term accountability exercises, including commissions of inquiry and the courts. An incentive to limit the permanent record is the significant cost of long-term storage.[2]

Information exists in a variety of formats. Paper has traditionally been dominant but other media – stone monuments or the beads of the Gus-Wen-Tah Two Row Wampum (Borrows 1997) – continue to be part of the public record. The media in which information is recorded are all shaped by technology, and changes in the uses and impacts of information have been driven by technological change. In the past generation there has been a sea change in the relationship between information and technology, shaped by the Internet and the related convergence between telecommunications, computing and broadcasting (Rowland 2006) – a process that has been largely beyond the control of government.

Treasury Board's IM policy defines information technology (IT) as the medium that houses the content: "any equipment or system that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information." Here the operative word is "automatic." The definition goes on to provide a crucial link to purpose-driven management: "It includes all matters concerned with the design, development, installation and implementation of information systems and applications to meet business requirements" (Canada TBS 2007a: Appendix – Definitions).

IT offers enormous scope to government but also frames its greatest challenges. Electronic databases facilitate consolidation of information well beyond the scope of paper-based filing systems, while networking greatly broadens access. The ability to link and recombine information increases the range of potential uses and also its value, both to government and as a service to the public. This puts particular pressure on personal information, much of it collected as a function of coercive state powers; government needs to maintain citizen trust, if only to safeguard the continued flow of accurate personal information, while making best possible use of the information at its disposal. The new technologies increase by an order of magnitude both the amount of information in the hands of government and the speed with which it is acquired and handled. They also increase the channels by which it is acquired and the media and locations in which it is held, creating a significantly more complex IM environment. By the same token, the government's ability to disseminate information is greatly increased. Compounded by 24-hour news media, information's importance has been increased as both an instrument of political action and a source of political risk. As discussed in the next section, it is this latter characteristic especially that poses a major challenge to the realization of the full potential of IM in the public sector.

The Challenges to Effective IM

Notwithstanding its contemporary importance, information management has received uneven attention in the past and is still not fully formed as a discipline of public administration. This section of the paper discusses five sets of factors that help to explain the current situation. It begins with a brief history of federal records and IM, followed by a discussion of how IM has been affected by the ascendency of information technology (IT). A third part looks at the internal dynamics of IM and some of the tensions among the different spheres of information policy. A fourth area is the concept of information as a public resource, and the fifth looks at the governance of information and its relationship to politicians and politics.

Historical legacy of records and IM

In describing the working conditions of rank and file clerks in the United Province of Canada (UPC), which formed the nucleus of the post-Confederation federal civil service, Hodgetts states that in an era before any kind of office equipment their time was "taken up with making tedious entries in a vast number of clumsy ledgers, copying out letters or passing bulky files." As a result, "the written word became a living presence to which civil servants daily made their obeisance" (Hodgetts 1955: 54). Beset by fire and other hazards, there are large gaps in the archives for this period (61), although one lasting legacy is the role of the role of the Executive Council Office (now Privy Council Office – PCO) in keeping the official record of the Governor-in-Council.

The low priority accorded public records persisted for the next century. When the Public Archives was created in 1872, its director chose not to follow the model of the British Public Records Office and to concentrate on documenting Canada's cultural record rather than that of government. Commissions of Inquiry at the beginning of the Laurier and Borden governments (Canada 1898, Canada Pope 1914) both lamented the state of public records and called for a systematic approach to their handling and long-

term disposal, with the Public Archives as the final repository (Wilson 1982: 23). In the 1930s and 1940s the Canadian Historical Association maintained the pressure (Brown 1944), in support of a growing national political self-awareness; this was echoed by the Massey commission on the Arts in 1951 (Massey 1951, Stacey 1951).

Although there were gradual improvements after World War II, including the establishment of a separate National Library in 1953, the Glassco commission in 1962 painted a generally dismal picture of the state of records management and sounded a cautionary note about the newly emerging fields of automatic data processing and data transmission. The commission found there was no policy guidance from Treasury Board in any of these areas or on encouraging collaboration among departments. Glassco considered that government record keeping was important to document both "the obligations of the citizens to their governments" and, in a democracy, the even greater importance "to record the obligations of a government to its people" (Glassco 1: 198). All aspects were criticized. In the area of data transmission, the commission expressed concern about the lack of compatible equipment and common coding, limiting the government's ability to realize "the benefits from integrating the flow of information … by automatic handling throughout, which will facilitate the exchange of common information through different systems (210)."

In response, the Pearson government in 1966 issued the first Public Records Order in Council, establishing groundrules for departments to deal with their dormant files and identifying Public Archives as their ultimate custodian. Acting on Glassco's recommendations to take a more managerial approach to government administration, an Administrative Policy Branch (APB) was set up in the reconstituted Treasury Board Secretariat (TBS) in 1970 to provide central direction to departments in the areas of records and technology management, among others. In the course of the 1970s it issued several directives governing IM and the management of IT, although the two areas were not linked to any degree. Reflecting ministerial concerns about containing costs and infused with values of prudence and probity, APB's policies sought to ensure "adequate equity, control and restraint" (Paton and Dodge: 8).

The situation changed in the course of the 1980s, under the dual influence of the passage of the *ATI Act* in 1983 and a general reorientation of Treasury Board administrative policies towards supporting program managers and outcomes, reflecting the ascendency of the New Public Management (NPM). This period also coincided with a conceptual shift from a focus on records to the broader but less tangible sphere of information, as something to be managed in itself and as a means to the larger ends of government and society.

From a records and information policy perspective, the late 1980s and early 1990s represented a high water mark. After a long period of neglect, information was seen by Treasury Board as a corporate resource, with administrative policies designed to encourage departments to manage it in support of the move into the information society (Morton and Zink 1991). Treasury Board ATIP policies developed in the mid-1980s were joined by the end of the decade by the complementary Security and Communications policies, in both areas addressing issues raised by royal commissions,[3] and these were managed and presented by Treasury Board Secretariat (TBS) as an integrated policy suite. Under the influence of Public Service 2000, there was a move to harness

information with new information and communications technologies in support of better service to both the public and government (Vision 2001 – Canada TBS 1992). However, even though the same TBS branch was responsible for both the suite of information, communication and security policies and the IT management policy (Canada TBS 2007b), their administration was not linked to any degree.

IM in a technological context

The situation changed dramatically in the early 1990s, shaping the current environment where the individual components of IM are more important than ever but the whole is less than the sum of the parts. Information policy has been blooded, engaging with technology and losing the more theoretical orientation that it was seen to have in the late 1980s (Morton and Zink 1991). It has become more central to public administration, but also less focused, its impact weakened by the lack of a unified understanding of what it constitutes or how its elements inter-relate. The fragmentation of information has occurred under two pressures, both rooted in events that occurred in 1993 – organizationally with the appointment of a Government of Canada CIO, and technologically with the inauguration of the Internet, to which the CIO was at least in part a response.

When a CIO[4] was appointed in TBS in 1993, reporting to the Secretary of Treasury Board, the position was assigned responsibility for the Treasury Board management of IT policy and related initiatives to strengthen IT infrastructure and the use of technology in internal administration. An early priority was to launch a *Blueprint for renewing government services using Information Technology*, building on the earlier Vision 2001 (Canada TBS 1994). The information policy suite was not at first included in the CIO's responsibilities and was only added 18 months later. Although an information-based approach fit well with the work of the Information Highway Advisory Council (IHAC), which encouraged government to be a model actor on the information highway (Canada IHAC 1995 & 1997), the mid-1990s also saw severe Program Review-based cuts to the records management and other information-related functions, justified at least in part by the prospect of using automation of administrative functions to effect savings. Some departments such as Industry Canada adopted a strategy of using technology to turn themselves into knowledge organizations (Brown 1997), but such initiatives were left to institutions individually, eschewing a government-wide approach (Giroux interview).

During this period, TBS's institutional focus on information policy gradually weakened. In 1998, after several re-organizations in the CIO branch, the information-related policy centres were separated organizationally within the branch, and in 1999 responsibility for most policy areas was transferred to other units in TBS: ATI P and non-IT related Security policy to the TBS budget office and Communications and FIP to a new Service sector. The aim was to allow the CIO to focus on IT-related issues, including Year 2000 preparations, electronic service delivery, monitoring major IT projects and strengthening the IT function in general. The CIO continued to be responsible for IM policy, narrowly defined, but it was considered that serious attention to the IM agenda would have to wait until the more pressing technology issues had been addressed (Harder interview).

With this more focused mandate, the CIO successfully addressed Year 2000 and launched Government On-Line (GOL), a public service-wide reform initiative, to bring the 130 major federal services to the public fully into the electronic environment.[5] IM, however, was addressed largely on a care and maintenance basis. By 2002, with GOL well established (and a new TBS Secretary), the ATIP and non-IT Security policy functions, along with the service policy, were transferred back to the CIO, in order to provide closer integration with CIO activities and in particular to strengthen IM in support of service to the public in the context of GOL (IM in support of internal administration was left on the back burner). The Communications and FIP policies, however, were combined with the TBS departmental communications office, weighting the operational concerns of the increasingly political communications function over its conceptual and administrative links to information policy.

Organizationally, the situation has been largely stable since 2002. A life cycle-based IM policy remains the centre-piece of a suite of information-related policies and management initiatives, but their administration is considerably less integrated than in the 1980s and early 1990s. The TBS CIO is responsible for the IM, ATIP and Security policies as well as the IT management policy, but their administration is spread across the CIO branch, making a coherent approach to IM more difficult. Housed in a different TBS branch and with strong operational links to PCO (and through it to the Prime Minister's Office), the Communications policy centre is even less integrated with the other information-oriented policies, with a consequent loss of synergies. This organizational dispersal at the centre of government both reflects and promotes an unfocused conceptual understanding of what constitutes IM in departments, adding to the constraints on government's ability to act as a knowledge organization.

The situation has been compounded by IM's intersection with the information and communications technologies that have come into prominence in the past generation. The release of the user-friendly browser Mosaic in mid-1993 – shortly after the TBS CIO was established – is generally credited with unleashing the wholesale adoption of web-based technologies in both private and public life (Rowland 2006: 371), amounting to a once-in-a-generation paradigm shift (Tapscott and Caston 1993) and offering transformative potential for the economy (Tapscott 1996), government (Tapscott 1997) and society (Canada Industry Canada 1996). Further refinements to these technologies, the establishment of robust broadband telecommunications infrastructure, and the widespread adoption of wireless technologies and associated hand-held hardware, have contributed to an open-ended expansion of networks and related applications, currently under the broad heading of Web 2.0. All spheres of daily life (Tapscott and Williams 2006) and of the public service (Wouters 2010) continue to be profoundly affected.

These technological developments have expanded exponentially the contexts in which information may be held and transmitted, generally in an uneasy state of coexistence with older formats and methodologies. They have also contributed to the fragmentation – potentially also the reinvention – of IM. There are several dimensions to this issue. Perhaps the most far-reaching is that information may be held and transmitted electronically in an ever-expanding range of environments and applications, often moving between environments, both inside and outside the institution. Individual data or units of information are combined and recombined to create new records based on the

same content but for different purposes. Often information is held in more than one version, both of the content and of the applications and hardware. Many older mainframes, which continue to be the workhorses of government computing and electronic information storage, especially for government programs with wide application such as tax collection or employment insurance, have outlived an entire generation of programmers and are a major source of risk (Canada Auditor General 2010).

The challenges to information policy and management are enormous. While the desirability of establishing common standards and IM practices that promote interchangeability and information sharing is recognized, progress has been slow for a variety of reasons: the enormity of the task, its lack of immediate and obvious payback, the time and effort involved in the face of more pressing concerns, and cost. A different challenge is posed by the range of professions and skills that are brought together to address these issues, who need to overcome disciplinary barriers to working with each other and with lay managers and staff. The most serious challenge, however, is to overcome the natural resistance created by vertical accountability models in the public sector, reinforced by a generation of NPM emphasis on outcomes rather than inputs and the aftermath of the sponsorship scandal, to an inherently horizontal and homogenizing function such as networked information storage and transmission. The Glassco commission's warnings of nearly a half-century ago remain uncannily relevant.

The internal dynamics of IM

If the information life cycle provides a common thread for IM, it also creates a number of internal tensions and pressure points. The variables can be grouped under three broad headings: the nature of the information being managed, issues relating to its use, and the perspectives of the actors in the IM process.

Consideration of the nature of information begins with the three-cornered relationship between information, records and published material. The Treasury Board umbrella policy developed in the wake of the *ATIP Acts* in the 1980s was concerned with the management of government information holdings, defined as either (internal) records, subject to the ATIP policies and later to the Government Security policy, or (external) published material, which was instead governed by the Communications policy. The expansion in the 1990s of electronic networks across institutional boundaries meant that the same information could routinely be accessed for both internal and external purposes and used in either paper or electronic format, or both. The emphasis therefore shifted from holdings to information more broadly; records and published material remain core categories but within a broader information universe. This blurring of boundaries was reflected in the merger in 2004 of the National Archives and the National Library to form Library and Archives Canada.

Several tensions are built into the various information policies and into the dynamics among policies, sometimes consciously and at others inadvertently. The most basic is between making information available and protecting it. Even availability has an inwardness: the ATIP legislation facilitates access, but only at the initiative of a requester, while the Communications policy is based on government taking the initiative to disseminate information to the public. Ideally the two are administered in tandem – the more that government proactively disseminates, in particular internally-held information,

the less need there should be for recourse to ATIP procedures. This has proved difficult to achieve with the greater political sensitivity of the ATIP and Communications functions and their increased isolation – both organizationally and operationally – from each other and from the rest of information policy. This has exacerbated the tendency for ATI to become a mechanism for controlling rather than facilitating access.

A second tension can be found within the *ATI Act*, between its general provisions for access and the specific exemptions and exclusions that limit access. Three pressure points are particularly significant. One that was recognized from the outset is with the *Privacy Act*, which was designed to be complementary to ATI, guaranteeing individuals access to information about themselves but establishing strong protections against access by third parties or even re-use of personal information within government beyond the purpose for which it was originally collected.

A second pressure point is national security. The harm-based tests for many ATIP exemptions had to be reconciled with traditional security-based information classification, which in turn determines levels of physical protection accorded to government information and other assets and the system of security clearances for government employees and contractors. The *ATI Act* also highlighted the need to replace the *Official Secrets Act*, and many of the provisions of the post-9/11 *Security of Information Act* (R.S.C. 2009, c. O-5) deal with issues that had been addressed by the three security royal commissions.

The third pressure point in the *ATI Act* arises from its positioning in the political process. A major argument in favour of it was that it would help to provide more informed public debate and therefore better public policy (Canada Secretary of State 1977). It was considered important that the accountability structure and oversight mechanisms should reinforce rather than undermine the Westminster-based system of ministerial responsibility and Cabinet government. This led to several of the *Act*'s distinctive features: placing decision-making about exemptions in the hands of ministers (as Heads of their departments), minimizing the role of the courts, and assigning an information-gathering and publicity role to the Information Commissioner (all in support of individual ministerial accountability to Parliament), and excluding the records of and direct policy inputs to Cabinet discussion from the coverage of the *Act*, supporting collective ministerial responsibility (Robertson 1978).

In some respects the *Act* has worked very well. Information released under it has become the lifeblood of Question Period and other aspects of parliamentary debate, and Parliament has become more vigilant in overseeing its implementation. At the same time many departments have been found wanting in their performance in meeting requests (Canada Information Commissioner 2010), political vetting of sensitive requests has increased notwithstanding safeguards in the *Act* (Roberts 2005), policy making has become less open than envisaged (including ending the practice of releasing background papers to Cabinet discussions), and the *Act* itself has become a focus of contention rather than the handmaiden of public debate – all of these trends compounded by the dynamics of an acrimonious minority parliament.

Within government there are also tensions between the originators of records (in the context of immediate operational requirements), the interests of their larger organization

in managing that information in the medium term, and the longer term interests of Library and Archives Canada. Any interest that the government as a whole might have, as ordinarily expressed by TBS and the CIO, is superimposed on these other perspectives, which are largely driven by operational or programmatic concerns. The differing mandates and world-views of IM specialists and the IT specialists with whom they must work also come into play. Even within the Archives, which has a statutory mandate to determine what records to keep for the longer term – measured in decades and potentially centuries – there are longstanding debates about the role of the archival function, its relationship to historical research on the one hand and future but unforeseeable operational requirements on the other, and concretely about the criteria used for selecting the small proportion of documents that become part of the permanent record (Bearman and Lytle 1985, Cook 1997). These dilemmas have become even more complex with the wholesale addition of electronic records (Grimard 2005).

Information as a public resource

A fourth set of factors inhibiting effective federal government IM is a history of weak recognition and consequent undervaluing of information as a public resource. Government bookkeeping assigns no value to its information holdings, while the policy development and administrative activities associated with IM are individually treated as costs but with no means of aggregating them. There has been a greater administrative focus on the IT that houses much of the government's information, but even it is treated as a cost in its acquisition and then as a depreciating asset – as well as the source of numerous administrative and political headaches. During the 1970s and 1980s the TBS Administrative Policy Branch prepared annual summaries of IT spending identified in the Estimates, but this was discontinued with the establishment of the CIO. A study by the CIO branch in 2003/04 estimated that IT-related spending (then just under $5 billion) was about 10% of total spending on government operations, with about 2/3 of that amount spent on purchasing IT goods and services from the private sector (Brown 2007: 63); this has not been repeated.

Even without a clear understanding of costs, the government can still act to make effective use of its information resources. Because of its unmatched ability to collect, organize and analyze data, government information in many areas is prized by external users for its integrity. This is especially true of information products from public agencies that are in the business of collecting and generating information and related knowledge, examples being Statistics Canada or science-based departments such as Natural Resources. Their IM practices are largely tied to their programs and do not depend on central regulation or support. The situation is less clear-cut in other areas of the government, however, limiting the periodically-expressed government-wide objectives of single collection and re-use of information from the public, information sharing and data mining, supported by common standards and infrastructure (e.g., Canada TBS 1994).

These latter objectives depend on an effective government-wide IM framework. Some of the obstacles have already been described, including neglect of records and IM until relatively recently, and tensions in the nature of information itself and in the objectives and interaction of the content of IM policies. A broader concern has been whether the government intends or is able to take a policy-driven "enterprise" approach to these matters. An underlying factor in the churn in organizational arrangement for the

Treasury Board IM policies was ambivalence about the nature of central management policy administration in general and, for a period, about the degree to which that should be part of the TBS vocation at all. The CIO branch began during a period that combined NPM-inspired questioning of central controls with a desire to get out of the way of departments dealing with major Program Review cuts. This debate ran through all of TBS but notably in the Comptrollership sector, out of which the first CIO and the core of his staff and activities were drawn. The original configuration of the CIO branch was largely project-driven and had only a very limited role in the management of administrative policies of the type that are at the heart of the financial and human resources management sectors. Although the suite of TBS information-related policies was later added, it was only after a decade that the branch was mandated and organized itself to take a systematic approach to shaping and leading the IM function across government.

The earlier ambivalence about a policy management role is now gone. In the current IM Policy the stated goals are:

> "to achieve efficient and effective IM to support program and service delivery; foster informed decision making; facilitate accountability, transparency, and collaboration; and preserve and ensure access to information and records for the benefit of present and future generations."[6]

From an administrative point of view these are essential concerns and to the extent they are realized will make a major difference (they are also essentially the same goals that were expressed in policies written in the 1980s). They do not, however, make any link to a broader vision such as enterprise-wide (i.e., cross-program) information sharing or support to the ongoing process of public sector innovation and reform, much less repositioning the government as a knowledge organization playing its part in the knowledge society. Another indicator, perhaps, is that the Management Accountability Framework (MAF) , the template used by Treasury Board to assess departmental management performance since 2003, did not include information and IT management in its original framework, and currently these are largely cast in process terms under the rubric of Stewardship, which is linked to the "departmental control regime." A major concern is to meet the process requirements of the *ATIP Acts* (Canada TBS MAF).

The next section will argue that the current situation can be regarded as a necessary but not sufficient condition for the full realization of the potential of the government's information assets. Before doing so, it should be noted that there are two other dimensions of the issue of information as a public resource that are not addressed in this paper: Crown copyright and the sale of government information. In common with British practice, the federal government asserts intellectual property rights for all the information that it generates, and the Communications policy governs licensing procedures. This approach contrasts with the United States, which does not assert over-riding government intellectual property rights and has a general orientation towards making government data available to the public at no or minimal cost, especially where this can lead to the development of value-added products and the generation of economic activity.

The governance and politics of IM

In this paper, governance refers to the mobilization of collective decision-making and institutional support for the IM agenda. It includes both the high-level institutional

deployment of IM-related agencies and senior officials and their linkage to the broader public service and political arenas. A central issue is the organizational location and relationships of the CIO. A review of current governance arrangements in light of experience in the past twenty years suggests that they support incremental improvements in the state of IM as a component of internal administration but not a more fundamental harnessing of information as a driver of public sector reform. The ultimate determinant is political attitudes and priorities, both at the ministerial level and in Parliament.

The ground level of IM governance is the role accorded to it in the Treasury Board IM policy, seeking "A fully implemented set of policy instruments supporting IM outcomes, defined accountabilities, and enterprise IM governance" (Canada TBS 2007a). Specific objectives include alignment of departmental with government-wide IM policies and practices, better measurement of policy compliance, and less need for independent action by departments. The steering mechanism is a Policy and Governance Sub-committee of the Committee on IM in Business (CIMB), the CIO's senior advisory committee, whose members are program ADMs in line departments. CIMB is the CIO's primary vehicle for influencing and obtaining input from departments, with associated sub-committees and working groups covering most significant areas of the CIO's IM domain. All departments are expected to participate, and supporting IM governance is a MAF assessment criterion.

A second dimension of IM governance is the CIO's organizational location in the central agency universe and in particular the relationship to, and standing within, TBS. When the office was created in 1993 it was within TBS, in principle building on the organizational model that grew out of the 1962 Glassco report. The essential feature of that model was that TBS should combine the role of budget office with that of policy-based overseer of management practices in the public service. The latter entailed bringing all areas of management policy except appointments under the purview of Treasury Board but at the same time separating the central agency policy role played by TBS from the provision of common services to government pursuant to those policies, which was the domain of operational common service organizations, notably in today's context Public Works and Government Services Canada (PWGSC). This structure was intended to provide the environment needed to "let the managers manage."

The application of this model to the CIO and IM has been tested in several ways. As already discussed, there was initial uncertainty as to whether the CIO should play a traditional TBS policy role at all or whether it should be a senior-level project office supporting IT-based change initiatives. This debate has largely been resolved in favour of the established TBS model, although with a less unified policy universe than was the case before the CIO was established. A second set of issues concerned whether the CIO should be embedded in TBS or whether its agenda warranted creating a separate central agency, although still under the Treasury Board committee of ministers, as has happened in both the comptrollership and the human resources areas. In the late 1990s, in the final stages of Program Review, consideration was given to breaking up the Glassco model by combining the various policy branches in TBS with their PWGSC counterparts (in the case of the Communications policy, with the then Communications Canada), to form a galaxy of Special Operating Agencies reporting to the President of Treasury Board (Harder interview). This was ultimately rejected at the political level. In 2001, a review

was conducted of the option of creating a separate central agency, on the comptrollership and human resources management model, in support of the GOL initiative, but it was concluded that this was not necessary if the CIO made full use of available Treasury Board instruments (Brown 2001).

A related issue has been the personal standing of the CIO within TBS. Since 1993, the position has always reported to the Secretary, the senior TBS official. The first CIO, Andy Macdonald, was a deputy minister, having previously been Comptroller General when that office was independent of TBS. Later CIOs have all been at the senior ADM level. This has contrasted with the comptrollership and human resources management areas where the senior TBS positions are established in the *Financial Administration Act (FAA)* [R.S.C., 2009, c. F-11] and assigned the rank and powers of a deputy minister (*FAA* ss. 2 (1) and 3), appointed by Cabinet on the advice of the Cabinet Secretary and participating in the deputy ministerial community. The lack of such status and access has been seen by many observers as handicapping the later CIOs. A related factor is that the legislative framework in the areas covered by the CIO has developed piece-meal and there is no overarching statutory framework that links the elements together, in the way that the *FAA* shapes the comptrollership function or the Treasury Board employer role.[7]

A third dimension of the governance issue is the CIO's relationship to the structure of senior public service horizontal committees. Not being at the DM level, the CIO does not participate in any of the committees on management and policy initiatives appointed by the Cabinet Secretary. The CIO does, however, have access to the Treasury Board Policy Advisory Committee (TBPAC), made up of departmental deputy ministers to advise the TBS Secretary on existing and contemplated Treasury Board management policies. TBPAC and its predecessor, the TBS Advisory Committee (TBSAC), have played an important role in obtaining senior-level departmental support for CIO initiatives, but its mandate covers all policy areas and is not focused on the CIO's agenda in particular. When the CIO position was created in 1993 there was a DM-level TBSAC IM Subcommittee (TIMS), which served as a steering committee for CIO-led initiatives for a number of years, notably Y2K and GOL, both of which were considered to be part of the larger management reform agenda. No successor committee has been appointed at the DM level, however, since the conclusion of GOL in March 2006.

This downgrading of horizontal machinery supporting the CIO is related to a fourth element of the governance equation, the link to the government's public service reform agenda. In its first decade, the CIO's priorities were clearly tied to the government's agenda writ large, engaging ministers as well as senior officials. Again, Y2K and GOL were particularly important. The Y2K initiative upgraded much of the needed infrastructure for the move to electronic service delivery under GOL. GOL had the government's wind in its sails: as a central component of the Connecting Canadians agenda that followed from the reports of the Information Highway Advisory Council, it enjoyed the support of the ministers of Industry and Finance as well as of the Treasury Board President and, indirectly, the Prime Minister, receiving endorsement in two Speeches from the Throne and $880 million in new funding. For several years it was, alongside Public Service Modernization, one of two government-wide public sector reform initiatives and as such part of the accountability of every deputy minister and of government managers. Information and technology are important parts of the current

reform agenda, but only among many factors and with an emphasis on enabling collaboration in the workplace.[8]

The final dimension of IM governance is its link to the political sphere. The level of support provided by the Prime Minister, as prompted by the Cabinet Secretary, is an important contextual factor, especially in shaping the broad public service reform agenda. After 15 years when there was a succession of high-level initiatives sponsored by the Cabinet Secretary and endorsed by the Prime Minister, this kind of comprehensive approach has not been taken up by the Harper government and there has been no successor to GOL, the last in the series. Treasury Board Presidents have generally supported initiatives to promote information and technology in government, although this was most visible and enthusiastic during GOL. Reg Alcock, a former Manitoba public servant, also took a greater interest in strengthening the internal management of IT and IM and using them to create greater efficiency in government. This might well have led to a GOL successor, but his efforts were still-born with the fall of the Martin government. On the other hand, there is anecdotal evidence that part of the Harper government's caution about major new initiatives in this area was the Harris government's problematic experience with major IT projects in the 1990s.

The reality is that IM and IT are not vote-getters, and they are more likely to be seen as sources of political risk. Parliament has a checkered record, with consideration of IM and IT scattered across the committee system. Both areas are regularly the subject of reports by the Auditor General and less frequently of follow up hearings by the Public Accounts committee – the most notorious case being the Auditor General's 2003 reports on advertizing, polling and sponsorship (Canada Auditor General 2003b), all components of the Communications policy. The Standing Committee on Government Operations also held hearings on GOL and is currently the locus for discussion of IT projects and TBS-related issues more generally. Several Commons committees potentially deal with Security policy issues, including the Standing Committee on Public Safety and National Security. Recently, the Standing Committee on ATI, Privacy and Ethics, which was set up during the Martin government, has begun paying closer attention to the annual and special reports of the Information and Privacy commissioners, after a long period when they were largely ignored. It remains to be seen how this interest will translate into consideration of IM practices more generally, although these have been the subject of increasingly critical reports by the Information Commissioner (Canada Information Commissioner 2010).

If Parliament's interest in the administrative dimensions of IM-related issues has been diffused, reflecting the pattern in government, the political process has concentrated attention in two areas. The most direct is the effect of the daily House of Commons Question Period, where virtually uniquely among liberal democracies – even in the Westminster system – oral questions may be posed without notice on any subject to any minister, with the Prime Minister as the default, on any day that Parliament is sitting. Played out on television and the Internet, these gladiatorial contests accentuate the inherently adversarial nature of parliamentary proceedings and place particular pressure on the *ATI Act*, which is the vehicle for much of the information gathering by the government's critics, leading to allegations of interference by political staff in the processing of ATI requests (Martin 2010, Akin 2010). Lying behind this has been the

growing centrality of communications to the political process (Flanagan 2007), leading to closer political oversight than ever of the communications function in government, compounding its isolation and that of ATI from each other and from other areas of IM.

Conclusions

Information is a defining feature of public administration – more so than ever in the environment defined by the information and communications technologies that have come to the fore in the past twenty years – but it is not fully recognized or acted upon as such. Considerable progress has been made, but much of it has been piecemeal and under the pressure of events, leaving more to be done.

The starting point is a better understanding of the nature of the beast. There is no clear definition of information. Public administration, like other disciplines, needs to develop its own understanding, both practical and conceptual, although it can draw on the information hierarchy based on the interaction of judgment and use. Format is another consideration: in principle information is independent of medium, in practice in public administration paper has historically been the mode of choice and still has an advantage in the longer term. Regardless of medium, the information life cycle has been adopted as the spinal cord of the management of information, providing the common framework for the suite of Treasury Board administrative policies that fully emerged in the 1980s. A similar life-cycle approach has been recognized as the foundation of good stewardship of the government's IT assets, providing common ground for IM and IT.

The very fact that initial thinking about information and its management was largely based on experience with paper records – although very much in awareness of the emerging IT revolution – meant that administrative approaches to the two spheres were not at first reconciled. The pressure to do so became unavoidable as the result of two events in 1993: the establishment of the CIO position in TBS, the central agency responsible for management, and the popularization of ICTs with the exponential growth of the Internet.

These events combined to offer a vision that itself has not been fully articulated but whose elements and range of choices are clear enough. Administratively, fully realized IM will, in the terms of the government's IM policy, result in better and more efficient program and service delivery, better decision making, and greater accountability, transparency and collaboration, now and for future generations. This of course is a very tall order, but others would go even farther, challenging government to turn itself into a knowledge organization, playing a full value-added role in the transition to a knowledge-based economy and society.

Whether the more modest or the more ambitious vision is adopted, the aspiration currently falls short of reality. This is for a number of reasons. There was no systematic approach to government records for the first century of Confederation, and it took another twenty years for a framework of administrative policies to be developed based on the information life cycle. The government's institutional response to new ICTs – the appointment of a CIO – in many ways represented a set-back to a systematic approach to IM, and as recently as ten years ago IM was not treated as a core function of federal public administration, except in the important but relatively narrow context of service to

the public. As the management of information and of technology have become increasingly integrated, IM has been brought into the administrative mainstream, but its unity has also eroded both organizationally and even conceptually, exacerbated by natural tensions within and among its various components. A further complicating factor has been the lack of systematic understanding of how to value information as a public resource.

The greatest test facing IM and the greatest obstacle to realizing a vision of information-based public administration – much less knowledge-based government – is its centrality to the political process. The clearest progress in IM occurred during GOL from 1999-2006 – literally its seven fat years. Circumstances are leaner now, partly because many of the easier advances have been made, and more difficult issues that were set aside during GOL are now being tackled. GOL also was part of larger government initiatives, born of the IHAC process, to support a social-economic transition to the knowledge-based information society; this kind of public policy "pull" factor is not currently present.

On the other hand, components of information policy have become core instruments of the Canadian political process, in particular the use of ATI to fuel public debate and accountability and of communications tools to conduct that debate. In many respects that is precisely what they were intended to do, but – herein the paradox – in the short run at least this has had the effect of isolating these information disciplines from each other and from IM more generally. In the short-term these are setbacks. In the longer term, this very sensitivity to the political environment and to public policy leaves future prospects wide open.

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[1] In the federal government's Government On-Line initiative, which brought over 130 government services on line, 69 were characterized as transactional and the rest informational (Canada Auditor General 2003a).

[2] A related and growing problem is the cost of keeping an inventory of outdated office automation equipment in order to access electronic records kept on versions of word processing software that are no longer in current use.

[3] The communications function received critical attention from Glassco (Canada Glassco 3) and by the 1980s had been the subject of the failed Information Canada experiment (Murray 1988) and efforts to centralize communications services in the national unity context. Security was the subject of three post-World War II Royal Commissions: in the wake of the Gouzenko affair (Canada Taschereau/Kellock 1946), to advise on the *Official Secrets Act* (Canada Mackenzie 1969) and on the RCMP security service (Canada McDonald 1979, 1980). In all three cases a central concern was issues relating to information acquisition, retention, protection and dissemination in the context of national security.

[4] Initially a Chief Informatics Officer, reflecting a primarily technological orientation. After some organizational flux, including the addition of information policy responsibilities, the position was reconstituted as Chief Information Officer in 1997, which it has remained.

[5] One measure of success is that for five years (2001-2005) the federal government – in effect GOL – was awarded top ranking in an international benchmarking survey of electronic services to the public by the consulting firm Accenture (Accenture 2005).

[6] TBS website: "IM Policy" http://www.tbs-sct.gc.ca/im-gi/imp-pgi/imp-pgi-eng.asp

[7] IT and IM come under the broad management authorities provided by s. 7 of the *FAA* but are not specifically mentioned in the *Act*.

[8] The Cabinet Secretary's Seventeenth Annual Report to the Prime Minister on the Public Service of Canada lists "renewing the workplace" as one of five priorities for 2010-11, requiring "greater emphasis on collaboration, technology, innovation, back office systems and knowledge management," among other dimensions. The report speaks approvingly of the introduction of the GCpedia wiki, based on Web 2.0

social networking technologies, to improve collaboration and policy development within the public service. (Wouters 2010: 13).

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