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# Governance and Information: Myths, Realities and the Future

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by Garth Graham, Cornelius F. Burk and Henry E. McCandless

*As legislators come to realize that they need better information for their governance roles, they must have assurance that management of information in government is a process that informs, and is not simply an activity that pursues technology as an end in itself. This article argues that in the new networked relationships in organizations and the larger communities, we must make understanding and collective learning our conscious objectives. Legislators can help by knowing the implications of networks — which means using them.*

Surrounded by the information economy, the information age, information highways, chief information officers, information management, and even the magazine *Information Week*, legislators, managers and citizens can be forgiven if they believe better information is a focus of contemporary management theory and practice. But behind the "infomania" most likely lies an appetite for technology and any plausible excuse to buy it, play with it and discard it in favour of the next software upgrades. In today's culture, the technology tail wags the strategy and governance dog.

## The Management Myth

The idea that government's information is managed is largely a myth. Information management is the application of management processes (such as leading, planning and evaluating) to processes that inform. An irony of the "information age" we have been in for the past 20 years is the *laissez-faire* attitude to the management of information. For more than a hundred years, government bureaucracies have essentially been information producing, distributing and consuming organisms —

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Peter Drucker and others have pointed out that information and knowledge are now the coin of the realm. Nevertheless, government's attention to matters informational is fixed on the technology, while the information, ostensibly the rationale for all the effort, remains untended, unmanaged and a non-issue for most bureaucrats.

Albert Einstein once said: "A fish will be the last to discover water." Bureaucrats and legislators may likewise be the last to discover information. Lack of attention to the value of information in governance may be a cultural or perceptual bias, but in any case information is not yet recognized as a resource by government bureaucracies, and it is not managed. Nor is organizational knowing and informing recognized as an objective.

In this "information age," even the technology is badly managed. Echoing findings of the US General Accounting Office, Charles Wang describes in his book, *Techno Vision*,<sup>1</sup> the misuse and abuse of technology in corporate America as "a screw-up of tragic proportions." About one-third of the total investment in hardware, software and training over the past decade has been wasted. Total cost: \$1 trillion. Are governments apt to be smarter than corporations?

## The real world of information management

Ursula Franklin's insightful 1989 Massey Lectures, *The Real World of Technology*,<sup>2</sup> aptly frame the real world of information management. At the levels of theory and popular perception, all appears well. But it is not. Never mind technocrats extolling the new promise of informa-

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tion technology, this is the reality of information management in the Canadian federal government:

- "Information management", in common conversation and trade magazines, means installing and "doing" technology, not managing either technology or information.
- Information is formally recognized as a resource by Canadian federal government administrative policy, yet resource management principles for information are not set out or understood, much less applied.
- The federal government does not have a business process model to guide its managers on how to manage informing processes and information resources (or even to help them define what information resources are in operational, pragmatic terms).
- Total government costs for acquiring, creating, packaging, formatting, storing, managing, disseminating, accessing and using information are not reported to Parliament. The *Public Accounts of Canada*, the basic information source for Parliament's financial oversight function, identifies as the universe of "information costs" only costs of publishing, printing, advertising and exposition services. Missing, for example, are the costs of: information required for financial control and public reporting; personnel and material services; scientific, economic and demographic information services; translation services; collection of tax data; and public relations information among others.
- Departmental managers are not accountable for expenditures on information-related effort funded by taxpayers, because no one knows what and where the information costs are or who is accountable. Yet US studies<sup>3</sup> have indicated that at least 40 percent of the operational costs of government are for information (suggesting about \$10 billion annually for the Canadian federal government).
- Treasury Board Secretariat's highly touted *Blueprint for Renewing Government Services Using Information Technology*<sup>4</sup> takes a technocentric approach and is silent on 1) the views of the customers to be served, 2) the management of services, and 3) the social dimensions of service renewal. The value of information is blurred or overlooked, yet service operations are expected to provide citizens with useful information about how the service works, not just technology.
- The Office of the Auditor General of Canada has not yet undertaken rigorous value for money audits of information management. Parliament is thus not encouraged to exact what it has a right to receive: government's performance reporting on its information management responsibilities.

Fortunately, while the overall landscape of information management in government is dismal, there are encouraging signs. In the mid-nineties, finally, we are witnessing new and growing appreciation and acknowledgment of information's strategic value in both government and private sector North America. Innovative approaches, new concepts and fresh strategies for com-

ing to grips with the management and use of information and its role in organizational learning are being developed. Legislators can support these initiatives.

From the mid-19th century to about 1960, what we now call information management amounted to physical paperwork and records management. Through the sixties and seventies, management's attention turned to emerging and rapidly changing information technologies and technical attributes, mostly dealt with by middle managers. Technical efficiency was the main objective. From the mid-seventies to the early nineties, the management of corporate information resources commanded attention in the most progressive firms and government agencies as support for top management, and had primarily an internal value-for-money focus.

Most government agencies today, however, are still struggling with the technical issues and problems of the sixties and seventies, albeit with faster, more powerful and sophisticated (and riskier) technologies. Few have discovered their information resources. Still fewer manage them.

Now, at last, management of *information itself* is emerging as the new strategy. In their watershed 1993 book, *Managing Information Strategically*,<sup>5</sup> James McGee and Laurence Prusak of Ernst & Young have freed information from its paper, technology and other straightjackets. The management of information, clearly distinguished from the management of technology, is now seen as the management of *processes that inform*, not management of the media, the technology, or resources as "things." Ernst & Young's research centre in Boston stresses the idea of "information ecology," with key concepts that include:

- a broad view of information, including computer-based and other structured but non computerized information such as documents, audio and video;
- a holistic view of the relationships between information and other key organizational influences including strategy, business processes, organizational structure and culture;
- a strong focus on actual behaviour of individuals in relation to information; and
- an orientation to describing the existing information environment, as opposed to modelling the future.<sup>6</sup>

In the Canadian federal government, there are signs that departments are beginning to develop a broader, holistic view of information management. For example, the Privy Council Office, the Public Service Commission of Canada and Revenue Canada appear to be standing back from the technophilia and asking fundamental questions: What is information management? What are its guiding principles? What is the business case for a corporate information management function? What management framework for informing processes should guide our activities, including the development, intro-

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duction and evaluation of information technology? With a similar purpose, Agriculture and Agri-Food Canada is conducting a department-wide information management audit.

Sound information management is critical to achievement of program fairness and efficiency. We have sufficient understanding of governments as information-producing, distributing and consuming organisms to allow us to install a basic set of standards for accountability for the management of information. What accountability reporting can legislators reasonably expect from government agencies? The reporting should include the following types of assertions.

- We know what our information needs are at corporate, branch, unit and individual levels in the organization and we have identified the information processes and resources required to meet these needs.
- To meet our information needs, we have an agreed concept of information management and accountability and a set of guiding principles for our managers.
- We assign the management responsibilities implicit in our concept of information management.
- We ensure the availability of information; we minimize its cost; we maximize its value to the organization; and we fix accountability for informing processes and productive use of our information resources.

### Looking Ahead

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The pursuit of technology as such simply produces more technology and makes us think of adapting everything else to it. In organizations, we must shift our attention to the quality of the processes of informing and the value of the information. Modern thinking exemplified by Davenport *et al.* points out the need to understand the behavioural forces in organizations that determine how people and organizations become informed, learn, and share that learning with others. We also need accountability for the learning to be gained from using information.

The effective acquisition, use and sharing of information in organizations converges with the wider world of public computer networks. The Internet is already pointing to fundamental changes in the way we will communicate with each other, which will bring fundamental changes in management structures and processes. The coming Information Society will have the same concerns that we have in organizations: the quality of the informing processes and the value of the information. Interactive connection in networks is the process that informs. Dealing with these issues will lead to better learning and to a new order of public accountability that will help society work better.

To be sure, transition to the Information Society will mean "noise" in the networks and the prospect of propaganda being sent to tens of millions of people on the Net. But the network community's vengeance on the demagogues, the pompous and the euphemism producers can be swift. In their own roles, legislators must guard against profit-seekers attempting to make people pay more than they need to for communicating with one another.

### Understanding Networks as Electronic Commons

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There is a maxim: "Give a man a fish, and he will eat for a day. Teach him how to fish and he will eat forever".

*Restated in the context of today's learning systems: Give a man a fish, and he will eat for a day. Teach him how to fish and he will eat until the fish stocks collapse. Teach him to understand the system in which he, his neighbours, and fish interact, and the eating of all three will be sustained forever.*

The learning systems version suggests that technology can be made to support social change rather than cause it. An Information Society will favour self-determining individuals, not compliant consumers in mass markets created by technology. It will support the actions of people who accept fully that they structure their social interactions through personal choice.

It is a fallacy to think that management as a rational process will survive unaltered the transformations we face. "Principles of management" are central to our existing institutions. But those principles are less salient in the new "political economy" of knowledge. Knowledge is the product of thought. Managers manage "things," not thinking. Their training and experience tend to cause managers to treat knowledge as a "thing." In much the same way, managers redefine people as "human resources" so that principles of management can be used to control social systems.

Managers do help our understanding of systems by making them more "rational." But rationality on its own is not sufficient to get the job done. The very structures that have been built (and now "re-engineered") to make people in organizations manageable, and, therefore, controllable are antithetical to the needs of organizations that truly learn. Learning occurs through interaction with others. We need to learn to integrate people into human systems that sustain knowing, creative thinking, and proliferation of new ideas. In a political economy of

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knowledge, where we learn, think and know, we must consider abandoning the concept of management as we now know it.

The telephone connects people one to one. Radio and TV, as broadcast media, connect one to many. The Internet connects people in both these modes. It also connects any to any. We can invite people almost everywhere to share in the articulation of a new idea. Electronic networks also put our own thoughts into a shareable 'mental space' popularly called cyberspace.

Networks have significant consequences for the way people relate to each other. Currently, 30 million people converse on the Internet, and the number more than doubles each year. Their connections are matters of personal choice. In the Information Society, anyone can talk with (not "at") anyone. These new networked structures are lived and understood as communities, not managed as organizations. To truly understand the public interest in the "connectivity" of cyberspace, it is essential to see it as an electronic common.

In our existing organizations, the individual is not expected to see the overall pattern of organization. In networks, everyone can see everything, so actions are not regimented or automated; they are *informed* actions. Networks evoke awareness and insight, not control. Through feedback, each transaction has a potential effect on the entire system. We need to understand how a network of individuals transforms its emerging collective thinking into working systems that get things done.

Elected representatives must strive to understand collective learning. For the governments they are responsible for, our legislators must understand that "conditioning the environment of decision" to prevent dissent cannot be maintained in an era of networking. As Peter Drucker pointed out decades ago, without dissent we do not know what the problems are.

Legislators can ask government agencies the following questions:

- Do you have a significant part of your effort dedicated to getting the organization to think better, bring about a learning environment, expand knowledge bases, and increase the rate of adaptation to external change? And if you do, what organizational status and influence does it have?
- Do you have an organizational function that specifically fosters relationships, connections, and associations while clarifying how individual and sub-group rights interact and how people are to answer for the results of individual action?
- Do you have and use performance indicators of the health of your organization as a set of nested systems and processes that aligns what managers think is being done with what must be done?
- Do you have a function that constantly redefines organizational purpose as the organization learns,

through feedback? Who does what with this information? Do managers understand the limits to the concept of "leadership"?

All these concerns will be highlighted by networking. So will the quality of gaining and using information. In both networking and organizational information management, value lies in meaning and context, not in the particular media and technology.

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### Elected representatives as fairness facilitators

Elected representatives should understand what is happening as networking evolves, and the best way to understand is to use the network. Electronic networks are causing a cultural shift toward the social use of technology to achieve common goals. Citizens can now see that dialogue is central to their involvement, and their involvement is necessary to ensure the quality of discourse that provides space for dissent, consensus and change in attitudes. Learning in the networks, citizens and their elected representatives are free to move to the people with the best ideas, and need not rely on those immediately around them or above them.

As individuals' beliefs and attitudes coalesce into collective beliefs and attitudes, we must think about collective responsibility as well as individual responsibility. Social systems as complex adaptive systems are not technology systems. Beliefs and attitudes produce intentions, actions and accountability. When we connect in cyberspace, we all share in the growth of these systems.

Elected representatives formally enter the picture at the stage where the collective consciousness has to be transformed into some form of government intervention or legal action. The job of elected representatives is to help sense, focus and bring about fair public intention from perceived beliefs and attitudes. The intention has to be converted into government program objectives that are subject to standards of public accountability for fairness and efficiency. It is not the job of elected representatives to create the collective beliefs. In producing fair intentions, there will be increasing public expectation that legislatures will interact with each other, in the networks, on common issues.

Within government, responsible ministers of the Crown (councillors at the municipal level) will increasingly require their organizations to become more open, through the networks. The quality of ministries' and municipalities' own management of information will thus be made plain to citizens.

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### Networks and power sharing

Traditionally, in the European model, the Crown delegates to the state, the state to the province, and the province to the community. Municipalities do not have

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powers to act unless those powers have been specifically granted to them. This is a hierarchical concept of authority based on the concept of power as a limited good.

Under this concept, power—the ability to influence—is owned by someone, like property. The right to use power to achieve specified ends may be delegated, but the power itself is kept. (That is why those who know public consultation point out that if consulting the public does not share power, it will erode trust, not build it). A clear example of the problems our cultural concept of power creates is the issue of Aboriginal rights. The use of power has been a stumbling block in negotiation of these rights because the idea of power-as-property is not inherent in most North American Aboriginal societies.

Traditional power concepts do not work in the society of network users. They are antithetical to the network-based social structures. The Information Society will never grant anyone the authority to decide what someone else needs to know. The individual who clicks the switch on the software as “groupware” does not control the thinking and knowing of the community, but only one aspect of more complex relationships.

***In electronic networks, nobody “represents” anyone else. That has important consequences for existing political institutions, since the networks will increasingly affect how they function.***

Power depends on the consent of the governed. Today, few of us trust others to represent our interests fairly and competently. In the emerging Information Society, our sense of our own authority and autonomy will increase. All members will be engaged in dialogue; all members will have the chance to generate ideas and to move, in cyberspace, to where others are generating ideas. Attention will become the only scarce resource.

As more and more people participate in the network, society itself can be expected to become more participatory, and therefore more democratic. In the network, the exchange process can be mediated but it cannot be controlled and the ideas themselves cannot be managed as if they were physical resources. The new power will reside in connecting those who want to know with those who are generating the ideas.

Legislators must deal with the problem of vested interests. Behind the current hype of the “information highway” are business profit agendas but, as yet, no related social policy formulated by government. The federal government actively supports private sector projects that accelerate our national transformation into an Informa-

tion Society. But do present approaches to public policy debate fairly address the question of the public interest in these projects? To put it another way, do we know what we are doing?

For example, the partnership between government and business, represented by Industry Canada’s Information Highway Advisory Council, is to scrutinize the “building” of something. Even when the information highway is viewed as a construction project, everyone agrees it has massive socio-economic implications. But where is the socio-economic impact statement? In the discovery of who would benefit, how, and who would pay what costs, much smaller public projects in Canada have received far greater attention.

Asking open-ended questions about social and economic impact usually turns up unexpected answers. The economic advantages for telecommunications, TV, and computer industries and their strategies can be made clear through the Information Highway Advisory Council. But serious discussion of the social implications of those advantages is almost non-existent.

#### **Four critical public-interest issues**

The first issue is the huge existing investment in the physical infrastructure of current communications systems. The gigantic structures of telephone and TV are governed by the idea that bandwidth (the capacity to carry communications traffic) is a scarce resource. Not true, says George Gilder<sup>7</sup>: telephone and broadcast systems are dying. Telephone networks are designed for the slowness of voice. TV networks are designed for the transmission of expensive centralized programming to millions of TV screens (“dumb terminals”) and for the delivery of audiences for advertisers. As these networks give way to computer networks designed for high-speed digital data flow, our assumptions about telecommunications must change.

The keys to revising our assumptions are Gilder’s first and second laws. In the “Law of the Microcosm,” the number of transistors on a chip doubles every 18 months, yielding significant savings in computer costs and great potential gains in peer-to-peer interconnection. Gilder asserts that the value of computers in networks rises as the square of the rise in the number of networked machines. The larger an open network grows, the more efficient and powerful its parts become.

As the computer industry replaces the telephone and TV industries by feeding on advances in semiconductor and networking electronics, technological advances in connections cause an explosive growth in bandwidth. Just as computer costs are dropping, so too are the costs to connect. But will users get the benefit?

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The impact of this computer-networking revolution is to collapse the costs of distribution and remove the middle function. The cost of time and distance in gaining access to people, services and products shrinks toward zero. When we think about it, much of our current economic geography is determined by the need for high-cost transportation and communication. Networks will change our understanding and use of geography in ways we cannot foresee. In network communication, authority moves from status-holders and establishments to the mediators of "creative conversations" that are controlled by their participants. Organization form ceases to be monolithic and becomes shaped by reciprocity, participatory democracy, individuality, and community. This means drastic change in the balance of power in our institutions.

Legislators must, therefore, understand the future of telecommunications, TV and computer industries sufficiently to know who would benefit, how and who would bear what costs from what corporations seek to do. We can expect that the private sector investment needed to shift from obsolete infrastructure will be supplied by market-place investors willing to take that corporate investment risk, not by the public purse. When the future offers a lesser cost, legislators must ensure that we are not charged amounts equivalent to returns on investment in infrastructure that is clearly being superseded.

The second issue is whether corporations, with government support, aim to ignore the reality of cyberspace as public thinking space — an electronic common — and to seek to enclose this common as property for commercial gain and for their retention of control. If the language of "consumer" and "supplier" is the only vocabulary for speaking about an electronic common, it allows the common to be turned into something commercially rented. The language obscures the issue of the public interest and whose needs are to be honoured.

Cyberspace as public space does require hardware, software and network to take people in and out of it. These costs can be identified. "Being there" (in the networks) has enormous social ramifications, but the risk in business control of the information highway is public access to the electronic common by a tariff that is blurred with the true cost of hardware, software and network. Since much of social interaction in an Information Society requires interactive computer-mediated communications, "life as lived" would become a toll road. Legislators must engage the independent help they need to determine that costs charged to citizens are fair.

The third issue is the underlying aims of government-wide "blueprints" for technology. For example, legislators must satisfy themselves whether massive "outsourcing" contracts for private business to convey

the data and information of government would wind up as unchallenged "cost-plus" technology proliferation. Are we simply "re-inventing" internal administrative processes through technology, still within an overall "command control" environment? Or do such "blueprints" bring about greater decision autonomy at the points of service across all levels of government, and open up networks to allow public access to what departments are doing? Without adequate accountings on these matters, independently, audited, how will we know?

The fourth, and most important issue is universal participation in the Information Society. Once we no longer see ourselves simply as passive "consumers" on an information highway, but as citizens actively participating in the development of the Information Society, we will change the design specifications of systems to allow greater participation.

The universal participation issue is not about access to new technologies, although that access must be held "at cost" for all. It is about using technology to counter passivity and compliance and to achieve the thinking potential of citizens talking with each other. Information highways must be built to serve the functional integrity of communities, small and large. We can then begin to see clearly the connections among government, learning systems and the challenge of fair global economic competition. Networks enhance our human potential — our thinking and learning potential. They allow us to think collectively, to an extent not previously possible. Legislators must ensure that the new technology is applied, at lowest public cost, to helping people create and exchange their ideas. ♦

## Notes

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4. Treasury Board of Canada, *Blueprint for Renewing Government Services Using Information Technology*, (Discussion draft), 1994.
5. James McGee and Laurence Prusak, *Managing Information Strategically*, New York: John Wiley & Sons, Inc. 1993.
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