Abstract: Here discourse about information technology in Canada’s health sector is examined. After an overview of the emergence of the Canadian Health Information Infrastructure, discourse within the Romanow Report is discussed in relation to three key themes: standardization, empowerment, and time/space compression. While an instrumental view of technology in the health care sector is the predominant discourse articulated in the report, we argue that, by emphasizing technology assessment, the Romanow Report makes room for a more nuanced analysis of technology implementations than is common to government reports. We conclude by suggesting how investigations of information and communication technology in the health sector, such as this, may offer opportunities to raise critical questions about technology and health policy from a communications perspective.

Keywords: Information technology/health sector; Canadian health information infrastructure; Romanow Report; Canadian Health Infoway

Résumé : Dans cet article, nous effectuons une analyse de discours sur les technologies de l’information dans le secteur de la santé au Canada. Suivant un survol de l’infrastructure de la technologie de l’information sur la santé du Canada, nous passons en revue le discours du rapport Romanow relatif à trois thèmes clés : la standardisation, l’autonomisation et la compression espace-temps. Bien qu’une perspective instrumentale sur la technologie dans le système de soins soit le discours prédominant articulé dans ce rapport, nous soutenons que le rapport Romanow, en mettant l’accent sur la prospective, effectue une analyse plus nuancée des mises en œuvre technologiques que celles qu’on lit ordinairement dans des rapports gouvernementaux. Nous conclurons cet article en proposant que des études comme celle-ci, qui portent sur la technologie de l’information et de la communication dans le secteur de la santé, ont le potentiel, tout en privilégiant une perspective communicationnelle, de soulever des questions critiques sur les politiques en matière de technologie et de santé.

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Introduction

Since the early 1990s, ample resources have been allocated to the development of Canada’s health information highway, also known as the “Canadian Health Infoway.” Although the health sector is an area of intense computerization in Canada, critical debate about health sector technology, from a communications perspective, has been limited.\(^1\) With this article, we want to put Canada’s health information highway on the Canadian communication agenda. To accomplish this, we focus on the discourses on technology as presented in the Romanow Report (2002), a key policy document that resulted from the Commission on the “Future of Health Care in Canada.”

In 2001, Prime Minister Chrétien appointed Roy J. Romanow, former NDP premier of Saskatchewan, as Commissioner to enquire into and engage in a dialogue with Canadians about the future of Canada’s public health care system. Romanow was directed to “recommend policies and measures to ensure long-term sustainability of a universally accessible, high quality, publicly-administered health care system for all Canadians” (Romanow Report, 2002). The Commission on the Future of Health Care in Canada (the Romanow Commission) was to make recommendations about sustaining a publicly-funded health system that balanced “investments in prevention and health maintenance with those directed to care and treatment” (p. 1). Building on Values: The Future of Health Care in Canada–Final Report was issued in November 2002. The report, some 357 pages long with twelve sections and introductory and supplementary material, included contributions from health policy experts and health researchers, as well as public consultations with tens of thousands of Canadians (Romanow Report, 2002, p. xv) who attended meetings across the country or wrote to the Commission with their comments. The report contains 47 specific recommendations and outlines action to be taken in 10 critical areas. Issues addressed include medicare, federal responsibilities, evidence based medicine, electronic health records, and telehealth among others.

In its discussions of health information technologies, the Report draws heavily on a succession of earlier events and policy documents such as the interim and final reports of the Advisory Council on the Health Infostructure (ACHI), (ACHI, 1998 & 1999), which articulated a vision for information technology in the health sector. We chose the Romanow Report for in-depth analysis for two reasons. First, it presents a broader view of technology in the health sector than its antecedent reports and second, because of its timeliness. The report claims to express current national views about information technology in the health sector at the turn of the century. From the computerization of health care records to telehealth services, the articulation of technology is conceptualized as a neutral instrument that will merely enable a more efficient and effective version of the public health care system of today. As a result, the technological future of the Canadian health care system is envisioned, myopically and utopically through rose coloured glasses.
We begin by situating this analysis of health information technologies within a broader national policy discourse on the Internet and health information technology that has been prevalent in Canada over the last 15 years. Developments in health information technology should be understood both in a broader national context and in relation to improving Canadian health care. We then discuss three themes—standardization, empowerment, and space-time compression—that are predominate in Romanow’s discussion of information technologies in the health-care sector, examining the meta-discourse of technological neutrality. The Report identifies two challenges to meeting these target goals: the provision of adequate infrastructure and the implementation of technology assessments. It is this latter discussion, on technology assessments, that provides an important potential counter-point to the over-riding utopian vision of technological neutrality. We end by indicating how the study of information technology in the health sector can act as a fertile—and largely unexplored—ground for Canadian communication scholarship.

Background: Telecommunications in a Canadian context

With a relatively small population dispersed over a very large geographic area, Canada has long relied upon communication technologies to play an important role in its economic and cultural development (Dickin, Martin, Mitchell, Pannekoek & Bernard, 2002). The challenges of maintaining social cohesion as well as service delivery over such a large area have created a fecund environment for the development of a strong Canadian telecommunications industry, which has, in turn, been fuelled by utopian ideals about how time and space can be overcome by increasingly complex technologies. In addition to being heralded as filling an important role in economic growth, lifelong learning, and community and economic development (Canada’s SchoolNet, 1999), the Internet has been seen increasingly as “a way to access federal, provincial and municipal information services” (Connecting Canadians, 1999, n.p.). Government documents released in the last decade (see for example the Information Highway Advisory Council, 1997), have suggested that access to the Internet will lead to better informed citizens and greater participation in civil society. Within any number of policy documents, the Internet is understood as a major vehicle through which citizens can be served (Canada’s SchoolNet, 1999; Connecting Canadians, 1999; IHAC, 1997). As Jocelyne Bourgon wrote in 1997, “on the verge of the 21st century, technology is allowing us to imagine new ways of connecting citizens, of eliminating the disadvantage of physical distance—and of giving a fuller, richer meaning to democracy and citizenship” (Bourgon, 1997, p. 2). The Internet is viewed as a way to deliver more government services by providing a responsive, client-centered government to citizens. One vision is that of ‘triple A government’—anytime, anywhere, anything. This concept, which is taking root in several parts of the world, implies that service is provided to the public from any location at any time, work is performed form any location at any time, and cross-government solutions emerge naturally without the client being aware of the structures (Policy Research Initiative, 1999, p. 5).
The Canadian government has embarked upon an ambitious program of computerization and Internet connectivity, aimed, among other things, at fostering citizenship, social cohesion, and improved government services. Programs such as Canadian Government Online were developed with the explicit purpose of increasing the connection between citizens and government. Information technology is thus portrayed as a key to the empowerment of Canadian citizens. Canada’s health information infrastructure emerged amidst this broader policy discourse that assumes that computer mediated communication can—and should—be used to support citizens, bridge equity gaps related to geography, and realize efficiencies in service delivery.

The emergence of the Canadian health information infrastructure
The foundations of the Canadian Health Infrastructure were laid in the early 1990s. In 1991, a national task force on health information articulated the need for a national health information structure (ACHI, 1998). In 1995, the Information Highway Advisory Council (IHAC) advocated the creation of a council to facilitate information and communication technology use in the health sector. In 1996, the Canadian Network for Advancement of Research, Industry and Education (CANARIE) echoed this in their Health-Iway Report, and Health Canada held national consultations to assess the health information and communication technology needs of the health sector (Arlington Consulting Group, 1997). Between 1997 and 1998, four important steps were taken:

1. The National Forum on Health called for the establishment of a nationwide population health system to support clinical, policy and health service decisions, as well as to assist patients and the public in health decision making (National Forum on Health, 1997).
3. The Federal government introduced The Health Transition Fund (HTF), which provided $150 million over three years to support provincial, territorial, and national pilot and evaluation projects aimed at improving Canada’s health system (Lee, 1998).
4. The Federal Minister of Health established the ACHI to provide strategic advice about the development of the national health infrastructure (Health Canada, 1997).

Following a period of consultation with provincial and territorial Ministers of Health in 1998 and 1999 and the release of the ACHI final report (1999), the 1999 budget provided $328 million to further develop health information systems in Canada. In the same year, a proposal to develop a Network of Health Surveillance in Canada was endorsed by the Conference of Deputy Ministers of Health, and the Canadian Health Network was launched “to provide Canadians with easy, online access to trustworthy information on health promotion, disease prevention, self-care and the performance of the health system” (Health Canada, n.d.). The 2000 budget provided an additional $366 million over four years for health information and information technologies (Health Canada, n.d.).
A succession of health information technology programs followed, including the Canada Health Infostructure Partnership Program (CHIPP) (2002), which was a 2-year, $80-million funding program that supported national implementation of information and communications technologies in health care delivery, particularly in telehealth for rural and remote residents, and electronic health records (Canada Health Infostructure Partnership Program, 2002). In 2000 the Federal government announced the investment of $500 million in an independent corporation (what is now known as Canada Health Infoway Inc., created in 2002), which is mandated to accelerate the development and adoption of information technology in health care. Canada Health Infoway Inc. received an additional $600 million in 2003, to support development of electronic medical records and telehealth applications, and another $100 million in 2004 to support a pan-Canadian health surveillance system that would support health surveillance—the “ongoing, systematic collection, analysis, and interpretation of health-related data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those responsible for prevention and control” (Centers for Disease Control and Prevention, n.d.; Agius, 2007).

The increased use of information technology in the health sector can be seen as a continuation of strategies designed to support citizenship and social well being amongst a geographically dispersed and culturally diverse Canadian population. Just as it was hoped that increased delivery of government services via the Internet would both improve services and lead to administrative efficiencies, it was also hoped that increased use of information technology in the health sector would improve the health status of individuals as well as the Canadian population as a whole by improving health research data, health surveillance, and supporting further research concerned with population health and the social determinants of health. At the same time that increased efficiencies would be achieved through the compression of time and space, it was hoped that better care would result across geographic and temporal boundaries. This view of technology as instrumental in the collapsing time and space can be seen as characteristic of Canadian government policy literature, in its idealism and political naïveté, a critique often raised by Canadian communications scholars (Babe, 2000, p. 31).

As the British geographer Doreen Massey elaborates, time and space are compressed with the acceleration of movement and communication across space and time, and this does not have the same implications everywhere and for everyone—rather time and space compression may create social differentiations that need to be critically analyzed (Massey, 1994). Such ideas are not foreign to Canadian communication thought, which has theoretically and empirically examined the creation of digital divides along the lines of gender (Shade, 2002), between rural and urban communities (Sciadas, 2002) and in terms of age differences (Middelton & Sorensen, 2005). Indeed, Massey’s insights into how technological acceleration can lead to divisions in social relations are indebted to Harold Innis, who associated modernization with a transfer from time-binding cultures relying upon time-binding media to space-bound cultures relying upon space-binding media (Innis, 1991). Such a transformation has cultural and social conse-
quences: space-bound cultures are expansionist in character, they seek to surpass pre-existing territories and borders, and space is transformed rather than maintained. While time in time-bound cultures is perceived as a continuous flow, time in space-bound cultures is made into measurable elements and is thus quantified and potentially commodified. The introduction of new media and technology is therefore never neutral. Rather, it is an active participant in the transformation of the social and material world, and, as emphasized by Massey (1994), it differentiates and broadens social divisions.

While corporate and government discourses tend to portray information technologies as neutral and universally beneficial, these new technologies in practice take part in a “digital restructuring” of a society’s political economy, with severe consequences for segments of the population (Crow & Longford, 2000). For instance, online services will not reach out to everyone to the same degree. As recent Canadian theoretical and empirical works on the digital divides show, Internet use and access are not equal along gender lines (Shade, 2002), or in relation to age, income and education (Middleton & Sorenson, 2005). This is particularly important in a context where more government services are online: Middelton and Sorensen (2005) puncture the myth that all Canadians are connected, and they identify the implications of this for the provision of health care online, particularly for the elderly. This analysis opens a scope for a critical reading of the Romanow Report (2002). Here we set out to trace the treatment of technology in the Romanow Report, and we consider the degree to which it views technology within broader contexts of use.

**Technology in the Romanow Report: A general overview**

The Romanow Report (2002) situates information technology within various public health agencies and at several different administrative levels, from the federal level down to individual hospitals or health programs. The report’s treatment of technologies ranges from the general to the specific. The technologies mentioned in the Romanow Report include

- broad categories of technologies such as the Internet, broadband technologies, and information technologies (IT) that might be used in a range of applications, including to support administrative needs;
- medical information and communication technologies such as electronic health records, and telehealth;
- technologies applied in the medical services such as technologies for treatment, technologies for genetic testing, diagnostic (imaging) technology, MRI (Magnetic Resonance Imaging), PET (Positron Emission Tomography) scanners, and CT (Computed Tomography) scanners; and
- advanced scientific technologies such as bio-technology, genetics technologies, reproductive technologies, and cloning technologies.

The Report offers a number of rationales for using and implementing these new technologies in the health sector. Among the most prevalent are effectiveness and efficiency, although improved quality of services and increased access to services by people living in remote areas are also frequently mentioned. Overall,
the Romanow Report (2002) casts technological advances as a means to “improve health outcomes and enable a more effective deployment of scarce financial and human resources” (pp. xvi-xvii)—a view of technology which reflects common cultural beliefs that technology represents inevitable progress (Bush, 1983; Balka, 1987). In addition to the benefits directly related to health services, the report also stresses potential benefits for health research and health surveillance, especially in relation to increased use of electronic health records.

In general, the increased use of information technologies is portrayed as beneficial to both the health care system and to patients, and the Report suggests that “promising advances in medical technology are occurring almost daily” (2002, p. xxvi). Coverage of communication and administrative technologies throughout the report asserts several potential benefits of these technologies, including claims about how these technologies can improve access to information, distribute information throughout the health care system, share information, and ensure systematization. The Romanow Report also assumes that these technologies will be beneficial in relation to health surveillance and monitoring as well as health research. The concerns raised revolve mainly around issues related to privacy and security (see for example, p. 76). The Report mentions the need for the health care system to change and adapt as new technologies come into use (p. 60), and states the need for health technology assessments, which take a broader perspective about technology that include social, legal, and ethical aspects as well as issues more directly related to medical practice (pp. 56; 83).

Although the Romanow Report (2002) does warn against an overemphasis on technology and the improvements new technologies can support, the problems with technology are mainly presented in terms of ensuring adequate resources and access to the technologies. Technology is almost exclusively portrayed as having overwhelmingly positive benefits; and the challenges technology presents are almost always related to distribution, availability, and equity (related to availability of technology). Far less emphasis is placed on how the technology may contribute to qualitative changes in the health care sector or to long-term changes in society in general. New technologies in the health care sector are mainly seen as working toward the same goals as previous technologies, only more effectively: more patients can be reached and treated over a shorter period of time for less cost (at least in theory).

**Standardization, empowerment, and time-space compression**

Three key themes about the positive effects of health and information technologies, what might be called “meta-benefits,” run through the discussions of health and information technologies in the Romanow Report (2002): standardization, patient empowerment, and time-space compression. Each is portrayed as beneficial for both individual patients and the health care system at large.

**Standardization**

Standardization is a recurrent motif in the report referring both to the creation of standards, as well as the creation of a more uniform and unified system. Recommendation 9, for example, states that the Canada Health Infoway should “be responsible for developing a pan-Canadian electronic health record frame-
work built upon provincial systems, including ensuring the interoperability of current electronic health information systems and addressing issues such as security standards and harmonizing privacy policies” (Romanow Report, p. 249).

The need for the development and deployment of health information standards and health information technology standards articulated in the Romanow Report (2002) suggests that the development and implementation of standards of inter-operability, security, and privacy are merely technical tasks to be undertaken and are largely apolitical and non-problematic activities. This sentiment glosses over the reality that the development of such standards will favour some stakeholders over others. For example, in British Columbia, the Ministry of Health is encouraging all hospitals to use 1 of just 2 or 3 electronic record systems, which will favour those hospitals and vendors whose systems have been chosen, and will result in extensive expenses for those hospitals required to abandon existing systems, which may in some senses be superior. Within the context of the Romanow Report, information technology standards are seen as a pre-cursor to a more efficient and effective health system that can accommodate the growth of an ever expanding evidentiary base to be mined in making health decisions, rather than a political process in which some stakeholders will gain while others will lose, and where the ability to ask (and answer) some questions will be favoured over others, as variable data definitions are developed and reified in the standards (Balka, 2003a). This is particularly evident in discussions about the standardization of data collection undertaken as a source of evidence for health care and health service delivery decision-making.

The Romanow Report states that “electronic health records provide aggregate data that can be used in health research and in health surveillance, tracking disease trends and monitoring the health status of Canadians” (2002, p. 78). Citing documents authored by the Calgary Health Region, the Report suggests that potential efficiencies can be achieved in managing chronic diseases, “by targeting efforts to expand electronic health records at the primary health care level” (Calgary Health Region 2002a & 2002b, cited in Romanow, 2002, p. 78). Although the discussion about population level data such as disease registries (databases designed to support research about a particular disease or health condition), is addressed largely in relation to health system research and accountability, the need to collect and analyze data that is imagined as useful for evaluation of the performance of the health care system, and to “provide strategic advice and analysis to federal, provincial and territorial health ministers and deputy ministers on important and emerging policy issues” (p. 54) is also outlined in the report. Although a significant academic literature exists that addresses challenges associated with the development, deployment, and politics of standardization within the information technology arena (see for example: Bowker & Star, 1999; Hanseth, Monteiro & Hatling, 1996) and includes work undertaken from a communications perspective (Salter, 1993 & 1999), reference to this literature or these questions is largely absent from the report.

Empowerment
Standardization in the use of electronic record data, and particularly the use of those data by patients, and the use of other forms of on-line health data by patients,
are tied to the second theme: that of the “empowered patient.” In the context of a
discussion about intergovernmental coordination, Romanow (2002) describes the
Canadian Health Network (a bilingual, nation wide health information resource) as “providing relevant, credible and timely health information to the public to
tie individuals to manage their own health through a Canadian Health
Network and self-care and telecare services” (p. 79). Under the heading
“Empowering Canadians and Protecting Their Privacy” the Report suggests that
“moving to an electronic health records system provides important benefits to
Canadians, particularly in terms of giving them ready access not only to their own
personal health care information but also to a wealth of trusted, credible informa-
tion on a variety of health topics” (p. 80). The Report thus recommends:

a personal electronic health record for each Canadian. . . the develop-
ment of a pan-Canadian electronic health record framework built upon
provincial systems. . . the individual ownership of each Canadian over
their personal health information, with ready access to their personal
health records. . . and the protection of privacy and prevention of abuse
or misuse of personal health information (p. 76).

Information technologies are depicted as providing patients with better
access to health information and knowledge and are positioned as allowing
patients “to play a more active role in maintaining their health and making deci-
sions about their medical care” (p. 77). Care of the self becomes the purview of
the individual.

Another aspect of the empowered patient reflected in the Romanow Report
(2002) revolves around the idea of self-monitoring. Information technology is seen
as benefiting patients by providing them with access to health information and
increased capabilities to monitor their own health. The clearest expression of this
phenomenon in the Report is captured in the following vignette that, interestingly,
appears under the section heading “Health Literacy” in the Romanow Report:

A 12-year-old boy has been diagnosed with juvenile diabetes. He needs
to track his insulin levels and other information about how he is feeling
through the day and provide that information to the health management
team that is monitoring his care. With that information, they can regulate
his dosage of insulin, his diet, his activity levels, and help manage his
care. The boy uses a mobile device like a Palm pilot. He feeds informa-
tion into the Palm pilot during the day, and at night, he hooks it up to his
home computer, types in his personal identification number, and sends it
to the health management team. During regular meetings, he and his par-
ents go over the information with the health management team. He and
his parents can also use his personal identification number to access
information about juvenile diabetes, especially research that is underway
to find a cure (p. 82).

This boy and his parents are here made into caretakers and supervisors of his
disease, and the monitoring technology becomes an intermediary between the
boy and his health management team. On the one hand, this puts the boy and his
parents in a powerful position, as it gives them direct access to information
regarding his diabetes and health status. This information may strengthen his control over his medical condition and his relation to the medical service providers. On the other hand, the technology may put the boy in a subservient position because it increases his dependence on external factors. The information technology, a palm pilot, can be used to regulate his behaviour and to provide the health management team with the means to assert further control over his behaviour and his life. It can thus be questioned whether the boy is in control of the technology or the technology is in control of him. As Henwood, Wyatt, Hart and Smith (2003) suggest, there are constraints in the emergence of the often heralded informed patient identity which exist on the part of both patients and health care providers.

In conceptualizing the empowerment of patients through technology, information technology is depicted as a means through which patients and care providers can be better linked, which, in turn, can help overcome obstacles of time and space. The technology is seen to accomplish what Mosco (1996) identifies as spatialization, (the compression of time and space) at the same time that it supports the development of new services, (such as the two way electronic flow of health data between patients and providers). This brings us to our third theme.

**Time-space compression**

A major potential benefit of the information and communication technologies, such as electronic medical records and telehealth delivery, identified in the Romanow Report (2002) is a lessening of the significance of location and distance. Telehealth is seen to reduce the isolation of distance by providing benefits and services to a broader segment of the Canadian population, regardless of geographical location: “people in rural and remote locations can be linked to family physicians, specialists and other health services in other centres where health care providers can diagnose, treat and provide consultations at a distance” (p. xxx). Providing care in home environments is one strategy that will make it possible to reach more remote segments of the population (p. 167) as telehealth technologies “link patients and health care providers to a wide variety of services outside their community” (p. xxx). In other words, advocates of distance and tele-mediated delivery of care suggest that the benefits and services provided by the public health care system can be made available to a broader segment of the Canadian population.

In these discussions of telehealth, time and space are mainly treated as practical obstacles to be overcome. As Wathen and Harris (2006) point out, all too often such services are seen as a substitution for human contact, yet often health information seekers lack the requisite skills to benefit from online health information. As new technologies are implemented and services and communication with providers are provided across time and space, this will affect lives and practices in homes, institutions, and communities; a concern that is hardly raised in the Romanow Report.

As these themes indicate, the discourse that informs this understanding of technology is one of technological neutrality. Information technology is seen in the report as closely interrelated with the workings of the health care system as a whole. One of the key tasks identified in the report is to make the technology
work according to the same standards and toward the same goals as the health care system in general. The role of information technology is thus to make the health care system run more efficiently, without diverting it from its main objective of improving the health of Canadians. In the Romanow Report (2002) technology is touted as promoting improved health outcomes by making the system run more smoothly. Specifically technology is identified as a neutral instrument, or a means to create a more effective and efficient health care system by contributing to better decision-making and because it will allow for the tracking of potential errors, both of which ought to lead to improvements in patient safety.

**Infrastructure and assessment: The challenges**

Although praise of the advantages of technology is prevalent in the Romanow Report (2002), the report does not unconditionally support new technologies in the health care sector. Potential negative effects and risks are also outlined. The problems associated with the use of information technology in the health sector are identified as a lack of physical, human, and financial resources; uneven access to the technologies, and lack of sufficient technology assessments.

To take full advantage of the potential of information, evidence and ideas in the health care system, the necessary information infrastructure must be in place. This requires action on three important fronts: putting essential information management and technology systems in place, improving our ability to assess and manage the potential benefits of health care technologies, and expanding our applied research capacity across the country (Romanow Report, p. 76).

These three essential ingredients are viewed as inter-locking “pieces of the puzzle” to “create a 21st century information and evidence infrastructure that will guide and inform the future of Canada’s health care system, improve its efficiency, and most importantly, improve the health of Canadians” (Romanow Report, 2002, p. 76). The infrastructure itself is seen as a key for realizing the potential of information technologies in the health sector: “Putting the information management and technology infrastructure in place means that essential information can be collected, compiled and used to make better decisions and improve quality and care within the system” (p. 90). Such quotes suggest that infrastructure is seen instrumentally, rather than as technologies imbued with politics, as Bowker and Star (1999) and others (Balka, 2003a; Crow & Longford, 2000) have suggested. However, part of what makes the Romanow Report interesting is that while on the one hand technology is presented instrumentally as the quote above suggests, on the other hand the report raises a gamut of political issues in relation to technology that are reflected in its discussions about infrastructure. The discussion of infrastructure also takes into account, albeit briefly, concerns about potentially increasing disparities between developed and developing countries in relation to increased use of advanced medical technologies in Canada:

It is naïve to believe that our own technological advances will simply “trickle down” to developing nations over time. Unless strategies are developed to ensure that developing nations can gain better access to
information and health technology, there is a risk that this technology could exacerbate the divide between the developed and the developing world. (Romanow, 2002, p. 245)

Romanow is aware that the pace of technological development demands resources and that the disadvantaged may lag behind and not take part in the benefits provided by technological developments. He thus recommends that “strategies to expand technology and health information need to be backed up with the same degree of global support that developed nations currently give to the range of international trade agreements that govern international trade relations” (p. 245). The report thus emphasizes the need to invest in infrastructure in order to reap the potentials of new technologies and put Canada on the forefront internationally (p. 90).

The question of the political and economic consequences of a mixed health-care system, which combines public and private health care delivery, is broached in the report’s discussion of technology. Romanow recognizes the self-generating demand cycles of technological change; as new technologies become available and are implemented in one place they generate increased demand for those technologies in other places. One of the imperatives for health institutions considering adapting new technologies is to meet competition from other health service providers where these technologies are already in use. Competition from private health care providers thereby plays a role in driving advancement of implementation of the latest state of the art technologies in the public health care sector (pp. 7-8).

The emergence of such infrastructure services, although created within a non-profit health system, nonetheless become implicated within a political economy of commodity exchange: device vendors profit from the sale of monitoring technologies, Internet service providers profit from transmission of health data, and doctors profit form new types of services for which they can bill. For example, in British Columbia physicians who use the province’s computer based chronic disease management (CDM) toolkit (Wong, 2007) can now bill the province for chronic disease management (Fayerman, 2007). Although the benefits associated with use of some new technologies and forms of service delivery are easy to demonstrate, in other cases there are “inflationary pressures associated with health care technologies [which] could be better controlled through policies that influence decisions made by health care providers in their clinical encounters with patients” (Romanow, 2002, p. 83). To counter such inflationary pressures, Romanow points to the need for health technology assessments. As provinces, territories, and the federal government make decisions regarding the implementation and use of new technologies in the health care system, it is vital that these new technologies are carefully accessed prior to their introduction; the Romanow Report here points to an existing gap between work of technology assessment agencies and decision-makers’ and planners’ informational needs related to investments in new and existing technologies.

Often existing health technology assessments are not sufficiently comprehensive, and, so far, they have had only a limited impact on resource allocation decisions. Although new technologies are expected to result in improvements in
efficiency and health outcomes, the Romanow Report (2002) notes that there is a lack of relevant assessments and research to confirm these expectations. Thus, the report states that “in making decisions about whether to purchase and use these new technologies, health care managers and decision makers must rely on the best available assessment of the impact, benefits and effectiveness of new technologies on health care and health outcomes” (p. 82).

As such, increased and improved health technology assessments could be a driving force to identify the technologies most appropriate for meeting the needs of the public health sector and its patients. The Romanow Report recommended establishing an institution that would coordinate health technology assessments and conduct independent technology evaluations. Although responsibility for this function was not given to the institution identified in the Romanow Report, health technology assessment efforts have been bolstered since release of the report, and the institutional infrastructure that supports health technology assessment activities is expanding. The Report further stresses that “technology assessments should not be done in isolation of their impact on all aspects of health and the health care system” (p. 56). It recommends expanding “the scope, effectiveness and co-ordination of health technology assessment across Canada” (p. 75).

Two years after the Romanow Report was released, this call for an expanded scope for health technology assessments was echoed by Canada’s Federal/Provincial/Territorial Advisory Committee on Information and Emerging Technologies (Health Technology Assessment Task Group, 2004).

A coordinated and comprehensive health technology assessment is seen to have several concrete benefits, as it “provides relevant information to managers, decision makers, and health care providers on the safety, economic efficiency, clinical effectiveness, as well as the social, legal and ethical implications of using new and existing technologies” (Romanow Report, 2002, p. 83). The report stresses that “health technology assessment should be about what is best for the patient—medically and economically—and not about technology for technology’s sake” (p. 83) and emphasises that specific needs of the population and the role of specialized technologies must be taken into account. However, the call for health technology assessments is predominantly a call for an assessment of the efficiency and adequacy of technology to solve specific pre-existing and predefined situations and problems. Far less attention is paid to the need to assess the wider social consequences of implementing new technologies.

The Romanow Report tries to balance its emphasis on potential benefits of new technologies in the health care sector with potential negative side effects. However, it is rather narrow in its conception of the effects of technology. It does not go to any length to explore how new information technologies may affect the wider context of use in the lives of patients, in health care institutions, or for health care practitioners. The Report is silent about the potential effects of information technologies on local and regional communities, on the organization of work, or on the values and customs of society in general. When the potential consequences of technology are discussed in the Romanow Report, they are most often limited to claims about direct effects which improve efficiency in ways that
can be quantitatively measured; far less emphasis is put on indirect and more far-reaching social and cultural effects, which are often of a qualitative nature and harder to measure and assess.

The Report addresses what it sees as “a direct and dynamic relationship between the services that are provided and Canadians’ changing health care needs” (p. 9). However, it does not delve into the specifics of how new technologies may create or influence health care needs; nor does it discuss the politics and the commercial interests involved in adopting new technologies and how these factors may influence the needs and demands for health care services. From a perspective of political economy, the role of manufacturers, developers, and producers are a key driver in the implementation of new technology in the health care sector. However, these actors are absent from the report, as it does not discuss the commercial interests influencing technological development and implementation in the health care sector. Again, technology is seen simply as a neutral tool for accomplishing goals in the health care sector, not as a commodity or as a means to an end.

Finally, as we have seen, the discourse of the Romanow Report (2002) suggests that the task of introducing new technology into the health sector is merely a matter of finding the “right fit,” the one technology best suited to a specific situation. The Report can thus be said to take an instrumental perspective on technology in which technology is used to solve predefined goals more effectively and efficiently, at minimal cost. Although the Report acknowledges challenges and problems raised by the new technologies, these are portrayed as minor “technical” problems—what Bush (1983) characterized as the “tech-fix,” not the profound challenges to the “ways of knowing” and “ways of doing.”

**Future directions: Canadian communication scholarship and health care technology**

It has been argued that Canadian communication thought is characterized by its greater emphasis on technology than communications literature in the United States (Babe, 2000, p. 25; Kroker, 1984, p. 12). Communication thought in Canada can be characterized as “critical,” with a heavy emphasis on the social, political, and financial aspects of media and communication. Rather than portraying communication as a matter of getting across messages in an efficient and well-functioning manner, Canadian communication theorists have tended to focus on wider social and cultural effects and aspects associated with forms and mediations of communication. From Marshall McLuhan to Harold Innis, Canadian communication thought sees technology not just as a neutral tool for the transfer and dispersal of messages, but rather as possessing qualities affecting not only the messages being transferred but also society as a whole.

As Canada’s health technology assessment agency changes in response to recommendations in the Romanow Report, ample opportunities exist to explore an emergent area of technology policy as it unfolds. Communications researchers have an opportunity to engage in varied forms of policy analysis with an end goal of exploring whether or not stated policy goals are being met. Issues related to governance of technology in the health sector, and particularly how technology governance is related to patient safety, remain largely unaddressed (Balka, Doyle-
Waters, Lecznarowicz, & FitzGerald, 2007). Critical appraisals, along the lines of those undertaken by Salter (1993 & 1999), can be applied to the study of health information and health information technology standard setting, while the related areas of information technology standards, information system architecture, and the availability of health information also warrant additional attention (Balka, 2003a & in press a & b; Hirji, 2004; Wathen & Harris, 2006; Wathen & Harris, 2007).

The relationship between patterns of ownership of technologies and challenges associated with technology implementations can also be further explored. For example, the data intensive nature of electronic health records and disease registries are fertile ground for communication scholars interested in privacy and ownership of personal information. A failure to address issues of data ownership and appropriate use of data can lead to questions of interest to political economists, as debates about who owns data and who has the right to sell health data under what circumstances often find their way into the press, and subsequently the auditor general’s office, and regulatory gaps related to new areas of commodification of health information can be exposed (Balka, 2004). Information technology in the health sector is raising questions not only about the commodification of health information, but also about spatialization (changing relations of time and space related to new technology use), and structuration (the emergence and change of institutions vested with agency) (Mosco, 1996), and as such warrant consideration by scholars interested in the political economy of communication technologies.

With the deployment of varied information technologies throughout health sector work, communication scholars have opportunities to explore computer supported cooperative work from a communications perspective (Taylor, Groleau, Heaton & Van Every, 2001), and to highlight how work practices are changing as new technologies are introduced—often with disastrous consequences for staff. Issues of power and how jobs change with the introduction of new technology can also be explored in relation to health sector work. Communication scholarship has much to contribute to debates about the emerging Canadian Health Information Highway, and communication perspectives can become powerful tools in identifying strategies for intervention into key policy debates.

Conclusion
For its part, the Romanow Report is simultaneously heir to the legacy of a longer set of debates on information technology in Canada, yet it also stands somewhat outside the tradition of Canadian government reports in the health-care sector in its relatively nuanced evaluation of technology and its unprecedented call for health technology assessments. The Report must be recognized for its frequent mentions of various information technologies and praised for its recognition of the importance of technology assessment. Despite these achievements, a critical view on the wider consequences of the use and implementation of technologies is largely absent from the report, as, in line with its mandate, it focuses on the public health care sector and the role and effects of technology within this sector. In these respects, it does not go far enough to escape the criticism often levied by
Canadian communication theorists that Canadian government policy literature is “idealistic and politically naïve” (Babe, 2000, p. 31). The call to think “outside of the box” is heard but not answered in the Romanow Report.

The Report’s approach to questions about the implementation of information technology in the Canadian health sector is only modestly critical. It operates predominantly within the already established parameters and general goals of the health care system, uncritically accepting the belief that new technologies will help achieve these goals more effectively and efficiently. Thus, the Romanow Report can be accused of the short-sightedness advised against by scholars such as Ursula Franklin (1990) and William Leiss (1990), who both warned against a naïve belief in the technology as a neutral tool in the service of humankind. As Leiss stresses, technology implies modes of thinking and acting that take part in transforming our lives and societies. These transformative potentials of technology are not discussed in depth in the Report, which reinforces the instrumental illusion of technology as a mere means to a pre-determined end.

Our agenda here is not to paint information technology as the menacing storm on the horizon of a rosy picture of the future Canadian public health care, but to approach the Romanow Report specifically, and health information technology in general, in a manner that acknowledges the potential effects of technology. And we want to be timely. Though five years old as of this writing, the Romanow Report is still referred to and discussed, and many of its recommendations, such as the formation of the Health Council of Canada and the call to increase resources for technology assessment, have been set into motion.

The implementation and use of new technologies, which are costly undertakings in terms of both human and financial resources, grow ever more costly because they are so very hard to reverse once they have been started. The time is now to expand the Romanow Report’s call for health technology assessments into a national conversation about the long term effects of information technologies on not just the health but the work, lives, and values of Canadians.

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Notes
1. Exceptions include work undertaken at Simon Fraser University’s Assessment of Technology in Context Design Lab, as well as some work undertaken at University of Montréal (Milton Campos) and University of Western Ontario (see for example: Roma Harris, Nadine Wathen).
2. The Romanow Report suggested forming a “Health Council of Canada” and giving that Council responsibility for Health Technology Assessment. A Health Council of Canada has been formed, however, responsibility for health technology assessment has been given to the Canadian Agency for Drugs and Technologies in Health, which was, until April, 2006 called the Canadian Coordinating Office for Health Technology Assessment.
References


