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A SURVEY OF WHAT CANADIAN HEALTHCARE CIOS READ

Tell Me What You Read, and I Will Tell You What You Are

Jean-Anthelme Brillat-Saravin's famous aphorism "Tell me what you eat, and I will tell you what you are" epitomized themes connecting the influences of food and cookery on myriad aspects of life.¹ When applied within a learning context in business, this principle has enabled busy executives to enjoy the benefits of reading, with its capacity to provide a common communication experience and to transform entire organizations.² The corollary of this notion for a healthcare Chief Information Officer (CIO) could involve leveraging the seemingly benign activity of reading as an indicator of priorities, perceptions, and practice in the face of unrelenting change.

The CIO role continues to evolve in order to keep pace with the complex and dynamic nature of healthcare. What expertise do Canadian healthcare CIOs bring to their organizations and what are they reading to remain up-to-date? In order to determine job characteristics and the type and volume of print and electronic materials that CIOs are reading, a survey was conducted from January to April 2004.

Survey Methods

As part of the fourth year Health Information Science course "Information Management and Technology" at the University of Victoria, students conducted interviews with 28 Canadian healthcare CIOs using a confidential, two-page survey. All 28 individuals who were invited to participate (13 from Western Canada's Health Authorities and 15 from Ontario's hospitals) agreed to complete the survey. Wide variation existed in the size of the organizations and operating/capital budgets represented.

Numeric data on demographic and job characteristics were compiled and summarized (Exhibit A). Since responses to the item "professional journals/magazines read on a regular basis" (Exhibit B) were open-ended and no follow-up for verification purposes was performed, several titles may be suspect due to the students' lack of familiarity with the actual journal titles. However, ambiguities were mitigated by standardizing these responses prior to compilation in order to eliminate title variants for the same journal and to remove those titles⁴ that could not be clearly identified.

Survey Findings

Demographics and Job Characteristics

Exhibit A presents a profile of the CIOs' demographics and job characteristics. These data describe the typical CIO as a middle-aged male who recently assumed the CIO role (within the last 5 years), having held a prior position within the organization for 5-10 years. The CIO has significant experience (about 16 years) in Information Management & Technology (IM&T) and an even longer tenure in healthcare (about 17 years). Almost 80% of the CIO's time (compared to about 15% for his or her superior) is devoted to the IM&T agenda.

Additional data reveal that the CIOs interviewed are an eclectic lot with a wide variety of educational backgrounds. The highest level of education completed is a PhD (2), followed by a Master's degree (18, including 11 MBAs), an undergraduate degree (7), and a diploma (1). Many with degrees also hold an assortment of diplomas. Designations are distributed across the three most prevalent disciplines as follows (with some individuals represented in more than one category): 36% healthcare; 54% business and/or administration; and 18% computer and/or information systems.

Exhibit A. CIO Demographics and Job Characteristics

	Min	Max	Mean	SD
Gender (M or F): F=6 (21%) M=22 (79%)				
Age	32	59	47.0	6.8
Number of years in current position	0.1	15	4.1	3.4
Number of years with organization	0.1	23	8.1	6.9
Number of years working in health care	0.1	37	17.1	8.2
Number of years working in IS/IM&IT	0.6	42	15.8	10.9
% of time devoted to the IM&T agenda	20.0	100	79.4	26.1
% of time the person reporting to devotes to IM&T	2.0	80	15.3	15.9

NOTE: Summary statistics were calculated to exclude missing values.
IM&T refers to Information Management & Technology.

Publication types were grouped according to an adaptation of Gradowski et al.'s (1998) guide to periodical types.³ The raw data reveal a preference for "professional, trade & industry journals" (PT) at 66% of all titles and 68% of all citations, compared to "scholarly & research journals" (SR) at 17% of all titles and 22% of all citations. However, the reverse is true by a smaller margin once the data are adjusted for readership using a citation per title ratio for each category (SR = 2.82 citations per title compared to 2.21 citations per title for PT). "Popular magazines" comprise 12 % of all titles and 8% of all citations, with "newspapers" trailing at 5% and 2%, respectively.

Position and Responsibilities

Of the 28 CIOs interviewed, 64% carry a title that includes CIO. Eight of these include CIO as part of another title, including Vice President (VP) of the organization in 3 of those cases. In total, 38% of CIOs interviewed carry a designation of VP of the organization or of a particular division. Other titles include Chief Operating Officer - COO (1), Chief Financial Officer - CFO (1), and Director (5). Notably, 36% of the CIOs interviewed serve dual roles.

Department/division names are similarly diverse. Eighteen different names were identified with Information Management being the most common (4 instances) and Information Technology often used in some fashion. It is clear that the CIOs interviewed oversee a significant staff complement and a plethora of departments and services, with areas of responsibility ranging from the usual IM&T to Networks, Telecommunications, Health Records, Decision Support, Library Services, Privacy, and more.

Reading Practices

The use of print material is alive and well with 22 publications mentioned more than once and another 43 titles submitted, with the majority being journals. Web-based sources were also identified through other survey questions but are not reported here. Included in Exhibit B are 7 non-specific sources offering multiple publications, e.g., Longwoods Publishing Corporation; excluded are four titles that could not be specifically identified. Of the 65 retained titles, the three most commonly read publications are: Healthcare Information Management & Communications - COACH (13), Harvard Business Review (9), and the Journal of Healthcare Information Management - HIMSS (9).

The **informatics context** identifies the primary discipline-specific focus of a publication. "Healthcare" leads in popularity with 34% of all titles and 44% of all citations. "Business" comes a close second with 32% of all titles and 35% of all citations. "Technology" ranks third with 19% of all titles and 12% of all citations, leaving the remaining 15% of all titles (9% of all citations) to publications covering multiple disciplines.

Considering **publication type and informatics context together**, the most popular publications are "professional, trade, & industry journals" in healthcare and business (combined total of 55% of all titles and 60% of all citations). In contrast, "scholarly & research journals" in healthcare and business comprise only 11% of all titles and 19 % of all citations.

Interpreting Reading Practices - Are Canadian CIOs Reading the "Right" Things?

Balancing Relevance and Rigour

Although the diversity of literary selections speaks to the CIOs' proclivity to seek relevant material, it is not an indication of the

Exhibit B. Distribution of Publications Read

Standardized Title	# Citations	Standardized Title	# Citations
Healthcare Information Management & Communications Canada	13	Computing Canada	2
Harvard Business Review	9	Fast Company	2
JHIM (Journal of Healthcare Information Management)	9	Forbes	2
CIO	8	Health Management Technology	2
CIO Canada	8	Healthcare Papers	2
Healthcare Quarterly	6	Macleans	2
Electronic Healthcare	5	Network Computing	2
Information Week	5	PC Magazine	2
Canadian Healthcare Technology	4	The Economist	2
Canadian Healthcare Manager	3	Other (43 unique titles)	43
Canadian Medical Association Journal	3	Publications = 65; Citations = 140	
Computer World	3		
Healthcare Management Forum	3		

quality or scope of the publications. Following an informal session to gauge what CIOs read, Thornton May, Corporate Futurist and Vice President of Research and Education at Cambridge Technology Partners, posited that "IT is one of the most powerful forces of change on the planet, yet a set of great IT books apparently doesn't exist...if we are what we read, we're in big trouble."⁴ Taking May's literary 'call to arms' for quality literature a step further, it behooves CIOs to peruse the smorgasbord of publications from a variety of relevant disciplines (not only technology), in order to find the 'choice morsels' - the 'right things' to read in order to manage and lead change.

However, achieving a balance between relevance and rigour is elusive. "The ability to sort through a barrage of information is imperative for any business professional. But CIOs have a particular challenge: They need to stay in tune with the latest and greatest technology developments, but at the same time, they must apply filters to the buzz to identify those advances that will best meet their organizations' business needs"⁵ (relevance), regardless of where those achievements are published. Yet reliable information (rigour) is particularly important in healthcare, where the outcomes of strategic and operational decisions, whether technological or clinical, impact the health and lives of patients.

From our simple survey data, it would be presumptuous to offer an unequivocal 'yes' or 'no' to the question "Are Canadian healthcare CIOs reading the 'right' things? At best, the findings serve as a basis for shaping questions and context for further exploration and study. The interpretations that follow should be qualified by the particularities of a CIO's own organization, experience, knowledge, reading practices, and methods.

Regarding the informatics context as it pertains to relevance, insofar as the CIO literature indicates a need to focus on the business (healthcare) and on business acumen (methods and procedures) more than on technology (processes), the majority of the journals being read undoubtedly cover 'the right' topics. Making a similar determination for publication type, however, is not as straightforward. The paucity of reported "scientific & research journals" could reflect a variety of legitimate factors. For example, information about adopting the 'softer' skill set for strengthening key competencies such as communication and business skills may be available primarily through "professional, trade & industry journals." Similarly, 81% of the cited titles that are published in Canada and the majority of cited healthcare titles (of particular interest to the interviewed CIOs) are also "professional, trade & industry journals."

Do CIOs Know What They Are Missing?

Low readership of scientific publications may also reflect a perception that valid findings can only be found in scientific publications, and relevant findings in professional publications, when in reality, information that is both relevant and valid is obtainable from either source, in various forms. That being said, are CIOs jeopardizing (a) rigour by reading so few "scientific & research journals" (17% of all cited titles) and conversely (b) relevance by applying unproven or intermediate evidence that may be summarized only partially in "professional, trade & industry journals" (66% of all cited titles)? Furthermore, by only reading a small fraction of publications from the universe of potentially relevant and valid sources, are CIOs moving forward at an optimal pace and in a way that best meets organizational and career goals, or are they missing important findings and new directions?

Even though theory-based literature is often perceived as circuitous, it can be made accessible. In medicine, POEMs (Patient-Oriented Evidence that Matters) are brief summaries of proven

research that are easy to obtain through electronic resources and meet the following criteria: they address a clinical question faced by health care professionals, they measure outcomes that are important to clinicians and patients (e.g., symptoms, quality of life, morbidity or mortality), and they have the potential to change practice.⁶

The formula underpinning these summaries is as follows: usefulness of information = (relevance x validity) / work.⁷ This approach minimizes wasted effort and delivers high quality information that is both relevant and valid to busy practitioners at the point of care, i.e., the right information to the right people, at the right time, and in the right place. This sounds remarkably like the mantra of IM&T in healthcare. Conceivably, POEMs applied in a health informatics context would be a boon to busy CIOs seeking the most relevant and reliable reading materials.

The reported reading practices doubtless reflect the day-to-day reality of CIOs facing a multitude of responsibilities. "Being a successful CIO requires a continuing search for knowledge. In one week, CIOs could be absorbing new insight on the technologies and processes of e-commerce and CRM, and also building better skills at leadership and communication. [Although] there is no curriculum tailor-made for the CIO,"⁸ in such an environment it is imperative to adopt a "highly focused [learning] program for CIOs that... assures relevancy and [avoids] overly theoretical approaches."⁹ What CIOs choose to read could be an important part of their personal, life-long, self-learning program.

Using quality information to manage change has two implications: it enables you to respond to change (changing when you have to) and to lead change (changing before you have to¹⁰). Both are necessary, but the latter is preferred. Ultimately, as one component of a purposeful learning strategy, reading can help meet and shape the priorities, perceptions, and practice of today's pressured CIOs. By deliberately sourcing relevant and valid reading materials, a CIO can thereby "choose either to lead change or be dragged along behind it."¹⁰

Endnotes

- 1 Brillat-Savarin, Jean-Anthelme, "The Physiology of Taste," Penguin Books: Toronto, Canada, 1994 (originally 1825).
- 2 Mangelsdorf, Martha E, "What Chief Executives Read," Inc., Vol. 12 (No. 9), September 1990.
- 3 Gradowski, G, "Crime and Punishment," Chapter 3 in: Dempsey, PR, Reit, JW (Eds.), "Basic Library Instruction," Section 1 in: Gradowski G, Snavely, L, Dempsey, P (Eds.), "Designs for Active Learning: A Sourcebook of Classroom Strategies for Information Education, Association of College & Research Libraries: Chicago, 1998.
- 4 May, Thornton, "In Search of Great IT Literature," Computerworld, July 10, 2000.
- 5 Valentine, Lisa, "How CIOs Stay in Tune with the Times," CIO Today, January 5, 2004.
- 6 Adcock, Harriet, "POEMs in the PJ: A New Series About Treatments Relevant to Your Patients," The Pharmaceutical Journal, Vol. 272, February 14, 2004.
- 7 Slawson DC, Shaughnessy, AF, Bennett, JH. "Becoming a Medical Information Master: Feeling Good About not Knowing Everything," Journal of Family Practice, Vol. 38 (No. 5), May 1994.
- 8 CXO Media, "Fundamentals of the CIO Role," CIO Focus Study 2003 - 2004.
- 9 Cowey, H. Dominic, MacNeill, Janice E, "Checklist for Success: Essential Competencies for IS Leadership," Session 148, 2002 Annual HIMSS Conference & Exhibition.
- 10 Slawson, DC, Shaughnessy, AF, "Becoming an Information Master: Using POEMs to Change Practice with Confidence," Journal of Family Practice, Vol. 49 (No. 1), January 2000.

