**Canajan-e! - a nation of 10,000,000 publishers.
Brief musings on the nature and future of electronic publishing in Canada**

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As I understand it we are here today in a process to craft a mutually productive relationship between those who seek to publish electronically and those who seek to assist them and to assure that such publications can be preserved as part of the fabric of what is Canada.

It was suggested that I might provide a bit of a report card on electronic publishing in Canada to date and report on the outcome of an analysis the University of Calgary has been leading to identify significant electronic resources already existing. That report is not due until today and will go first to the Social Sciences and Humanities Federation which commissioned it. It would probably also be less than helpful as I believe we must seek some high ground about 5 years into the future and look back on today to ascertain how we made the journey from there to here. A mere progress report would be like analyzing a child's first steps when we really should be focusing on helping plan her education.

In any event the timing of today's event is propitious.

It is as if some European supra-agency had called a meeting in the mid fifteenth century to decide what do to about the new form of copying books arising from Herr Gutenberg's invention. What we do know is that the prime supra-agency of the day (the church) was far more interested in control and suppression than in enhancement and distribution. It is certainly doubtful that his contemporaries would ever have imagined this cantankerous silversmith being selected as the most significant individual of the millennium!

Five and a half centuries after Gutenberg we are entering upon another watershed of such magnitude. We are not dealing with adjustments, or process modification or policy amendment. We are dealing with far more than a significant technological advancement. Lofty as it may sound, I believe we are dealing with a fundamental evolution in the human condition - an evolution that challenges the long term viability of both publishing and libraries as enterprises.

Approach to the challenge

Now, as many of you well know, most meetings at the National Library tend to be, of necessity, (and to be candid) crushingly dull. When one must struggle with the imperatives of standards, technical detail and the daunting challenge of preserving the written soul of the nation, one tends to be cautious, occasionally dying in the detail.

This meeting must not be dull. I am not here to be cautious and I urge you to eschew the comforts of lethargy and slow movement. This is not a time for platitudes or lip service. These are tumultuous times in the evolution of recorded memory. It is a time to be bold and to get well out of the box. This hyperbole mirrors the reality of the challenge. Caution is the enemy of survival.

Time to Change

Now I must confess to being an enthusiast for change. I began my academic life seeking to be a historian. I love the past and cherish its wisdom and its lessons. While the past informs us, it cannot sustain us. We inevitably must evolve our endeavors or just become items for the attention of historians.

I suspect that each of you has with you, a ten cent coin - the lowly dime. If it is Canadian (and therefore worth 6.9 cents in real money), you will note that behind the image of Elizabeth Windsor there is a sailing vessel - the Bluenose.

As a young Nova Scotian, and even as an adult Albertan far from the ocean, I have always taken enormous pride in the Bluenose legend, its repeated successes against its American rivals and the courage and talent of its crews led by Captain Angus Walters. He was the epitome of the era of wooden ships and iron men. While we can take pride in such accomplishments, this image on our dime might also be a symbol of dangerous complacency, of pride of ignorance, of denial of change, of choosing looking back over looking forward, of failing to see the danger in apparent success.

At the time of Confederation, Nova Scotia was one of the great trading nations of the world. The names of its many ports graced the sterns of innumerable sailing ships that plied profitable commerce to every part of the globe. Forty years later the great fleet was gone as was the prosperity, swept aside by new technologies, new ways of thinking, new modes of economic interchange. We, in the world of words, images and paper, find ourselves in an analogous situation.

Whether we soar to new heights or become hulks on the beach is entirely dependent on the degree to which we recognize and adapt to the new circumstances for the gathering and communication of human knowledge.

TO PUBLISH

When looking at publishing, as with any topic, it is always useful to remember what the words really mean. My Oxford English Dictionary (on both paper and disk) tells me that to publish means

- ♦ to make publicly or generally known
- ♦ to declare or report openly or publicly
- ♦ to announce
- ♦ to tell or noise abroad

There is no mention of means of format - not books, not periodicals, not CD-ROMs, not data bases.

However the same dictionary has two definitions of a publisher:

- ♦ One whose business is the issuing of books, newspapers, music, engravings, or the like, as the agent of the author or owner;

- ♦ One who undertakes the printing or production of copies of such works, and their distribution to the booksellers and other dealers, or to the public.

Unlike the previous definition this is very situational, very focused on formats, etc. Interestingly I also found a second definition which was flagged as being a rare usage:

- ♦ One who makes something public;

- ♦ One who declares, announces, or proclaims publicly.

One of my messages today is: anticipate the probable inversion of that which is now normal with that which is now rare.

Electronic publishing Mark I

The first wave of electronic publishing came about in the efforts to make the printing industry faster and more efficient. Contents were moved from manuscript to printed products through computer managed typesetting. It did not take long for innovators to realize that they had far more than an improvement in printing technology. Take for example MEDLARS - the successful early 1960s efforts of the National Library of Medicine in the United States to deal with the unacceptable delay of 12 to 16 months in producing the monthly Index Medicus, the cornerstone bibliographic index of medical research and health care. Not only was the time in the pipeline reduced to weeks but also

a parallel electronic version came into being (MEDLARS) which could be accessed remotely by the 1972 in the USA and by early 1973 in Canada.

The next 10 to 15 years saw dozens of bibliographic and abstract products established in parallel to their print versions and delivered at not insignificant cost through commercial communications utilities across North America and then beyond. Some of the organizations represented here were either enthusiastic or reluctant participants in this new line of business. While new modes of access and more effective manipulation had been created through these commercial databases, essentially no new information was created beyond the mirroring of established paper products.

In the early to mid-1980's following the development of the personal computer, then the CD-ROM, these data bases migrated to desk top versions that negated the need for expensive communications and brought the information resources to broader groups of users than the initial high end sci-tech and legal users.

Opportunities for greater and greater varieties of surrogate electronic product accelerated with the increasing penetration of the microcomputer into the market place (which now included the home as well as the office) particularly the rapid increase in speed, storage and memory and as well as the evolution of the CD-ROM.

The onset of the CD-ROM also allowed the electronic mounting of book surrogates exemplified by such as the Canadian Encyclopedia on one hand and talking books on another. In almost all instances the electronic packages were again simply alternate forms of paper products just as microforms had been. Additional data was usually not included in the electronic versions.

These alternative resources were still largely print surrogates and continued to be marketed as packages in the same way books were offered for sale using the established distribution channels that publishers and brokers used for distribution of paper products. Pricing was parallel to that of paper products and often required the customer to take both. At this time the business model for some started to shift from a sale of goods model to a licensing of use model often based on perceived market value rather than cost-based pricing.

The business was still called publishing and it was still undertaken largely by the established book publishers as well as by a growing cadre of software publishers who sold through the same channels in addition to specialized computer stores.

The business as usual approach was also present in libraries most of which seemed to prefer to collect only those electronic resources that sort of looked like electronic monographs and periodicals that came from organizations which sort of looked like traditional publishers.

Electronic Publishing Mark II - Transformation

The established pattern of publishing, largely unbeknownst to most of us, began a journey of significant transformation in 1991 when Gopher and then the World Wide Web entered the lexicon.

Adoption was slow because of the costs of the initial technology required, the lack of general public access and the low number of people overall utilizing the Internet which was still fairly clumsy.

(The Internet itself was already 20 years old but had not yet moved beyond the realm of academic specialists and the aficionados.) In 1993 the first significant graphical browser, Mosaic, was made available (by the National Supercomputing Agency) to just about anyone as a free product. Net traffic exploded by several hundred thousand percent as additional countries joined the Net and the number of information sites available began to grow at unbelievable rates. When I was first introduced to the Web in 1994 there were about 300 web sites throughout the world. An OCLC study last June estimated there were about 4.9 million web sites.

Almost exactly ten years ago I spoke in this room to the Canadian Association of Research Libraries in an address I glibly called "Hitchhiker's Guide to the electronic highway". (Who remembers the electronic highway?) All that is worth reporting from that interesting day (with due modesty of course) is that while my colleague John Black and I have proved to be almost 100% right on predicting what might happen, we were almost 100% wrong as to when things would happen and at what cost. Everything we suggested has happened faster and cheaper.

Conditions for Total Transformation

I would suggest the conditions necessary to assure total transformation of human information retrieval and use are:

♦ ubiquity in technological access,
♦ affordable expansive bandwidth,
♦ diverse content,
♦ effective business models (free, subscription and fee per use) and
♦ effective protection of property rights.

In our context today I would also add the monumental challenge of recording it for those who will come after.

In my mind, three are fully present, one is getting there and the fifth is struggling. As for the sixth, we in libraries often talk of fugitive literature. If we are not comprehensive in

our collective efforts to preserve a record of this electronic era then we could become a generation with little or no memory. Umberto Eco called it an 'epoch of forgetting'. There are already enormous gaps in the memory as one realizes that the average life of many net-based electronic information sources has been months rather than years.

Transformational conditions.

Consumer Computing

Effective computing with network access is moving in well on affordability. More than half of Canadian homes have computers and over a third have network access. This does not account for use through devices under government, corporate or public institution control. Noting the very high penetration of both telephones and cable into Canadian homes it seems likely that near ubiquity of networked computing will be achieved in this decade. Organizations such as Freenets and libraries are struggling to address the needs of those without such personal access.

Bandwidth

Affordable bandwidth is available locally, regionally and nationally. The CANARIE leadership with CA*Net II and CA*Net III has created situations where the capacity is actually running ahead of applications for use (as it should be). There are still challenges in effective home delivery but much progress has been made. In an interesting development, the past year has also seen the onset of free access to the Net in many markets financed either by advertising or as a premium for having purchased other equipment or services.

Diverse Content

Diverse content is certainly the case. While there is neither the breadth nor the controlled access of a well organized library, there are significant types and modes of information available electronically that would never enter into the traditional definition of a library collection. The National Library and its partner institutions cannot ignore these new channels of information. There are currently 5 million web sites seeking to deliver 500 million public files to 4.3 billion IP addresses. These numbers are all increasing.

Effective business models.

There are new and effective business models coming on line ranging from the mechanics of save for free and secure on-line payment to incipient industry destroyers or at least redefiners such as Amazon.com, e-Bay.com and even NetLibrary.com. As the models are developed and satisfied customers are earned, the unease of many consumers will fade and inevitably lead to a significant shift in modes of commerce that will consume those who are not agile.

To this point I note the announcement on January 7 by Microsoft, Barnes & Noble, and Barnesandnoble.com that they had created an alliance called the eBook Initiative that aims to move millions of readers to a digital format through proprietary "Rocket" reading devices.

Effective Property Protection

Effective property protection has been a challenge since the arrival of the plain paper Xerox machine 40 years ago (as it was for many information technologies before). Challenges arise far faster than solutions. It took nearly 35 years to establish reasonable mechanisms in Canada to deal with the photocopier. We are now moving into an environment where 3 months is too long.

In the last 10 days alone we could read of four new legal challenges:

♦   the Recording Industry of America vs. MP3.com and its access to the content of commercial CD's;
♦   injunctions against the sharing of DVD code breaking software;
♦   an injunction by RealAudio against Streambox whose technology allows recording audio and video streams.
♦   The successful massive retaliation by the American movie, television and professional sport industries against Internet rebroadcaster iCraveTV.com.

The individual cases are interesting but the key context is that a year ago none of these problems existed because the technologies were not in general use or didn't even exist. The volatility of these changes should be a word to the wise that to make haste slowly is to be self-destructive.

Adjusting to electronic publishing

We are all trying to adjust and adapt but few are embracing change. I predict that the next 10 years will see stunning transformation of the role of each player in the knowledge chain:

♦   Authors

♦   Publisher

♦   Manufacturers

♦   Distributors

♦   Libraries

♦ Consumers

Who is an author?

Any human being who believes they have something to say that someone else might be interested in hearing or seeing or reading or knowing. The difference is that the number of economic, technological and yes, quality hoops that an author must get through to achieve publication is being radically reduced. Consider Canada a nation of 25,000,000 authors - learner authors, enthusiast authors, independent scholar authors, vanity authors, propaganda authors, visionary authors, helpful authors. The cacophony of this situation is both terrifying and invigorating.

Who is a Publisher?

Any human being or group of humans who have access to a network accessible IP address and a browser to organize and provide access to their materials. Taken together the author with or without benefit of publisher may take on the combined role of information provider.

As you proceed in this consultation, you must imagine Canada as a nation of 10,000,000 publishers lying next door to a nation of 100,000,000 publishers. Why are none of them here today?

As economic concentration moves to create the great empires of the seven sisters of information, the people are seeking and many are finding the tools that will allow them to ignore you. Look at the phenomenal growth in electronic genealogical resources as a model.

Now you may seek to dismiss this as all fluff or noise or ephemera or vanity publishing but a closer look will reveal significant transformation in scholarly communication, the evolution of personal sites of great quality and comprehensiveness (I call them labour of love sites) and even peer reviewed sites.

The great value of paper publishers is their well developed mechanisms of quality control and distribution. While the initial wave of electronic distribution was marked more by cool than quality and certainly included the bizarre and even outright lies, new mechanisms of substance and quality are finding their way into the non-commercial and non-traditional channels being established on the web. More will happen. Look at the state of motion pictures in 1900 and compare it to 1950 and to 2000.

In this new decade every year will be different.

Who is a manufacturer?

Much of the process of publishing on paper is a manufacturing process involving printers, binders, etc. Even publishing electronic packages such as tapes, CD's, CD-ROM's, DVDs has a significant manufacturing component. In the new age of electronic publishing there need not be any manufacturing beyond the computing and communications devices used by the author, the carriers and the consumer.

Who is a distributor?

If materials are given away there need be no distributor, no inventory, no reseller.

If the materials are to be sold the reselling process can be a partnership between the author and/or a value adding publisher on the one hand and a network accessible financial agency on the other. There need be no distributor, no inventory, no reseller.

... and what of libraries ?

It is already becoming clear that the home and the office are beginning to compete with the library and the information centre as the primary 'place of information' for many Canadians who seek information.

While I don't see significant erosion in the number of physical places such as libraries in the next decade I don't see much expansion. Far more importantly, I do believe their 'market share' of actual information volume provided will plunge as more and more information is made available in and delivered through personally mediated electronic channels. Just as there have always those who bought their own book so there will be many who want to be in greater control of the where and when of their information gathering.

We can assume that there will continue to be a portion of the population who will not create one of these personal 'places of information' either because of technical aversion, physical limitation, social preference or economic insufficiency. As always there will be a role of the library or whatever it might be called to provide for those citizens who cannot provide fully for themselves.

Some thoughts for Canada

In 1990, there were only 140 organizations registered with .ca domains and almost none with .com. As of last Friday in this year 2000, there were 73,187. I could not readily ascertain how many additional .com, .net and other domains existed but it is obvious that it is significant.

I believe Canada's growth toward electronic ubiquity mirrors the global estimates prepared by OCLC in their Web Characterization Project Report of June 1999. Growth in

public web sites from 1997 to 1998 - 82%, growth from 1998 to 1999 - 53% but that growth from 1998 to 1999 was NET of an erosion factor of some 44%. That erosion actually mirrors some of the numbers one sees about the survival rates in small business.

But --- Canada's output is but a small drop in the ocean of information. Only Canada will worry about the record of Canada.

As the role of libraries declines vis-à-vis general information provision, their potential role as preserver of the fragile blossoms of knowledge in a volatile environment can become vital to our society. If not, our patrimony will suffer a fate akin to a lobotomy. Even the losses of electronic resources over the last five years alone should demonstrate that there is a challenge here far greater than that of the brittle books and nitrate film disasters.

When the National Library was created in 1953, the finest Canadiana repositories were not in Canada. Even now after a half a century of diligent effort, a significant portion of the preserved record of Canada is not resident in this agency but is distributed throughout many great libraries and institutions in Canada.

In a networked era of highly devolved and decentralized production and distribution of information, it will be necessary to create a parallel decentralized alliance for the distribution, harvesting and preservation of the electronic (as well as the paper) footprints of Canada. For those of us who survive in libraries or those of us who survive in publishing, the National Library of Canada may lead or it may collaborate with us or it will have to get out of the way.

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He was Director of Information Services at the University of Calgary from 1988 to 1999. He had institutional responsibilities for computing, networking, multi-media creation, classroom media, libraries, archives, telecommunications (in-part), distance education facilities, the University Press, freedom of information and privacy.

He served as Director of Libraries at the University of Calgary from 1979 to 1992 and as Director of its University Press from 1985 to 1989. Previously he served in a variety of capacities at Dalhousie University from 1964 to 1978 including Government Publications Librarian, Law Librarian, Health Sciences Librarian and Lecturer in School of Library Service.

He has been President of the Canadian Association for Information Science, the Canadian Library Association, the Atlantic Provinces Library Association, the Council of Prairie University Libraries and the Canadian Institute for Historical Microreproductions. He has also served as Vice-President of the Canadian Association of Research Libraries and the Library Association of Alberta. He has served on the Advisory Board of the National Library of Canada is one of the founders and former Chair of the Calgary Community Network Association.

He was a Council on Library Resources Fellow in 1975, the first Executive Fellow at University Microfilms International, Ann Arbor, Michigan in 1976 and in 1988 was the second recipient of the CACUL Canadian Academic Librarian of the Year award.. In 1997 he was awarded the Canadian Library Association Outstanding Services to Librarianship Award. In 1992 he received the President's Award of the Library Association of Alberta for his contributions to libraries in Alberta. In 1994 he presented the Tenth Bassam Open Lecture at the University of Toronto and in 1996 presented the first Lorne MacRae Memorial Intellectual Freedom Lecture. In 1999 he was awarded the 1999 Alumni Jubilee Award of the Faculty of Information Studies of the University of Toronto for his contributions to libraries and librarianship.

He has been an invited speaker on library, information and technology-related topics in many parts of Canada as well as in Australia, New Zealand, Brazil, the UK and the USA.

In recent years he has provided consulting in information services and technological organization to the Technical University of British Columbia, Saint Mary's University, the Foothills Hospital, Victoria University of the University of Toronto, Carleton University, University of Regina, Canadian Occidental Petroleum and the University of Saskatchewan.

He is the University of Calgary Public Orator and in 1999 was inducted into the Order of the University of Calgary.

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