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Association canadienne de la technologie de l'information

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### PRINTING AND E-BUSINESS: AN INNOVATIVE INDUSTRY AT A CROSSROADS

**Notes for Speech by Gaylen Duncan, President & CEO, ITAC  
To the Canadian Printing Industries Association  
St. John's, Newfoundland  
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Good afternoon. I was delighted to accept your invitation to be part of your meeting here in St. John's. There have been moments over the fifty years of the evolution of the information technology industry when the printing and publishing industry has looked at it with some suspicion.

This probably stems from some rash predictions from long forgotten pundits that somehow the IT industry would destroy publishing - that we'd all be getting our information from electronic tablets or from radio receivers implanted in our heads. You get these kinds of fantasies every time a new disruptive technology comes along.

The movies, you remember, were supposed to be the death of radio. And television was going to be the bogey that destroyed our love of reading before IT came along. It was supposed to destroy our appetite for movies, too. But the reality is that all these technologies are still with us. In fact, they are thriving. And what we've learned from the evolution of these technologies is that humanity's thirst for information in a broad array of forms is virtually limitless. The technologies are complimentary rather than competitive.

I want to explore this idea with you today, first from a broad sociological perspective. And then I want to narrow my focus to take a look at how this complementarity can assist you in your business.

A couple of years ago I picked up a book that was fueled and created by a web site. The book is "The Greatest Inventions of the Past 2000 Years" by John Brockman.

Brockman is an author and literary agent who operates an invitation-only Website called Edge. Edge is designed to give leading scientists and thinkers a place to communicate their ideas in a lively, challenging forum. Brockman likes to get the discussion rolling by posing deliberately ingenuous questions, such as "Where did the human mind come from?" and "Where did the universe originate?"

In 1999, he posed the question "What is the single most important invention in the past 2,000 years?" You'll be pleased to know that the printing press received a strong show of support. Five of the 125 respondents suggested the printing press (and one proposed paper making). The computer and the Internet also did very well with about half a dozen compelling arguments made for them, too.

It's his book, so Brockman gets to place a bet along with everybody else. He proposed that the most important invention of the past 2,000 years is something he calls DNI, or distributed networked intelligence. This is "the externalized mind - the mind we all share, the infinite

oscillation of our collective consciousness interacting with itself, becoming aware of itself, adding a fuller, richer dimension to what it means to be human."

Maybe it shouldn't surprise us that the guy who asks the question comes up with the best answer. I like Brockman's definition for a number of reasons: it's what I would have said.

The struggle to create DNI has taken millennia. Its impact was barely recognized until the late 20th century. Unlike geometry or the alphabet, which have manifested themselves throughout our past, the full implications of DNI await the future. It is a superb bridge between all that went before and all that lies ahead.

It's a very calculated suggestion. The "I" for intelligence, in one fell swoop incorporates every other invention and idea in the book. And the words "distributed" and "networked" internalize all the advances in computing and network-building from the calculus to the Internet. In fact, the sneaky part of Brockman's proposal is that it's a showstopper. DNI represents the full flowering of human achievement so far. Tag, no touchbacks.

In fact, the only objection I can offer is that DNI isn't actually fully invented yet. It is a work still in progress. The network, which unites and distributes our collective intelligence, is only half built.

It currently embraces less than half of humanity, leaving the other half unable to access and unable to contribute to this collective intelligence.

Like Brockman, I fervently believe that what he calls distributed networked intelligence is the greatest monument to our species' experiment with civilization-building so far. It is perfectly reasonable to call it the greatest invention not just of the past 2,000 years, but of all our history. **But I believe that it will take a significant amount of inventiveness to complete the task of extending the benefits and responsibilities of DNI to everyone on earth. A huge task still lies ahead.**

But it is a task we will complete. I believe that, along with hunger, fear and sexuality, networking too is a primal instinct.

When you stop and think about it, the first distributed networked intelligence technology was the campfire. Around the campfire, pre-verbal hunters and gatherers learned to share information about good locations for hunting and new technologies for bringing home food. Before we had formal symbols for communicating we had an instinct for sharing intelligence. And the preponderance of mankind's technological advancement ever since has been focused on finding new ways to facilitate the networking instinct.

If you accept this notion, then you can see that Johan Guttenberg, the father of your industry, is on the same distributed networked intelligence continuum as Marconi, Bell, Bill Gates and Tim Berners-Lee (the inventor of the Internet).

We invented numbers and letters to encode intelligence and make it easier to transmit. We invented universities, printing presses, and moveable type to concentrate this transmission.

Some of our most unlikely advances are instruments of the distribution intelligence. For example, Alan Anderson, editor of "New Scientist", argued in Brockman's book that the 15th century Portuguese caravel was the greatest invention. He wrote a lively essay on its history and sang the praises of its preciously sophisticated design. But in the end, what use is a caravel lying at anchor in a harbour?

It derives its power from its capacity to brave the stormy seas, to link old world intelligence with the new. (And if you are in any doubt about the role ships play as communication tools, just

take a stroll along the harbour here in St. John's. With luck, you'll be able to witness the excitement that still greets the arrival of a new ship in port even today.)

Maybe this tendency to boil everything down to communications technology reflects a Canadian worldview. The British and the Dutch, close-quartered in teeming European cities, may have seen sailing ships and canoes as instruments of commerce. But we, isolated in geographically dispersed outposts, saw them as more than that - they were the medium for news, intelligence, and innovation. They provided the vital links to wider humanity that made life in the wilderness bearable and made settlement possible.

As settlement expanded and we dreamed of nationhood, our technological advances to create community became more sophisticated. We built roads and canals. For Canadians, the networking instinct was an imperative. And we built a railroad, a railroad that became a symbol of our collective desires and aspirations. A simple transportation system could never seize the imagination of a nation. For Canadians, the railroad wasn't about locomotion, it was about a dream of a network of communities from sea to sea.

Canadian history reflects this understanding of the importance of railroads as devices for distributed network intelligence.

With this deep-rooted appreciation for community-building, for its capacity to bridge distance and vanquish loneliness, it's not surprising that Canada today aspires to be the most connected country on earth. The simple truth is that we're good at building networks. And, fortunately, this innate talent positions us well for leadership in a world increasingly focused on connectivity.

We are already one of the most wired nations on earth. More than 98% of Canadians' homes have both a telephone and television. Nearly 90% of Canadians have access to cable TV and 96% are linked to a digital switch. We are avid users of paging and cellular services. One in every six Canadians now has a wireless phone or device.

We are world leaders in our use of the Internet and we are making significant strides in the area of high-speed, broadband access. There are approximately 700,000 users of cable modems in Canada, only four years after their market introduction. We boast a world-class telecommunications infrastructure and the world's longest fibre optic network. We **have** the platform for distributed network intelligence in Canada. We've built it with private capital and public will.

We also have a community of policy makers who understand how important networks are to our national identity. They have, for example, ensured that Canada shall maintain unregulated access to the Internet. They have been quick to grasp the new realities of electronic communications and have implemented timely policies to ensure the protection of personal privacy. They have also ensured a tax regime that encourages, rather than hinders, online commerce. These progressive policies can be found in all levels of government throughout our country.

Another demonstration of enlightened public policy just emerged last month. When the government's intention to create a Strategic Infrastructure Fund was announced and funded with \$2 billion last December, ITAC was anxious to make the point that a program for strategic infrastructure conceived in the 21st century must include connectivity projects along with roads, sewers and fishing docks. Industry Minister Allan Rock, who is now responsible for infrastructure programs, shares this point of view. He recently announced the five categories of projects that the fund would support and explicitly included broadband connectivity within them.

ITAC's members promptly offered a suggestion about what a connectivity infrastructure

program might look like. We proposed that Canada "Light up the Border."

By linking Canada's land based border stations with a high speed fibre optic network, we can create communications backbone that will enable biometric scanning, pre-border custom clearance and a whole new range of security and customs applications appropriate for the most commercially important border in the world. And by bringing broadband to the border stations, the primarily rural communities adjacent to them will have access to benefits of broadband themselves. Whether they adopt this idea or some other strategy to bring broadband to rural Canada, I know this government is keen to enable the networking instinct in all parts of Canada.

But the network instinct isn't restricted to Canadian policymakers. Our culture enshrines connectedness. We are proud that some of the greatest Canadians have made profound contributions towards broadening our understanding of it.

Canadians are not only avid users of tools of connectivity: they are also becoming increasingly aware of the transformational powers that these tools possess.

One of the most profound areas of transformation is in the field of commerce. A new study recently released by SES Research shows that a rapidly expanding number of small and medium-sized Canadian enterprises have embraced electronic-commerce. The data shows that Canadian small business owners bought and sold \$2.75 billion worth of goods and services via the Internet in the past year. That's up 41 per cent over what they bought and sold electronically in 2001. Fully 88 per cent of SMEs are currently using the Internet and 57 per cent report that this use has a **major** impact on their business.

These are encouraging results for those of us who created the E-business Opportunities Roundtable. The roundtable was created in 1999 to develop a strategy for accelerating Canada's participation in the Internet economy. Its work was guided by a strong sense of urgency. In spite of all the connectivity advantages that I mentioned earlier, many of us on the roundtable felt that Canada was not seizing the opportunities offered by e-business as rapidly as it might.

Since 1999 the group has issued three reports including a number of recommendations about what Canada must do to be a leader in the Internet economy. The Roundtable disbanded this year, but a new cross- sectoral organization called the Canadian E-business Initiative has been created to continue to advocate for the adoption of electronic commerce.

Now if you're one of those printers who doesn't believe in the complementarity of printing and IT, you may view this advocacy with some suspicion. If you're printing forms and brochures and newspapers and books, you may see all this Internet based business as a threat. I hope there aren't too many of you in the room. But even if there are, you need to understand that this technology isn't going away.

The catch phrase in e-commerce is "The Internet changes everything." That's as true for the world of printing as it is for direct computer sales, book retailing, health care delivery and education. So being suspicious of e-commerce is a weak strategy for a printer to adopt. You need to understand this phenomenon and design a business strategy that ensures you successfully capitalize on the benefits the e-business can afford.

You also need to understand where e-business leaves your business model vulnerable to failure. I hope I can help you to do this today.

An e-business is any company that leverages the Internet. An e-business may use the Internet to provide or share information. An e-business may also use the Internet to deliver products and services. And an e-business may develop Internet technologies, services and networks.

But, an e-business does not necessarily have to be a dot-com entity. Rather, an e-business is any organization that has built new business models to transform its critical operations.

In other words, an e-business is a company that leverages the Internet to:

- ✍ Enhance its supply chain management
- ✍ Improve existing customer relationships and build new ones
- ✍ Make better decisions about enterprise resource planning
- ✍ Streamline and enhance its product development
- ✍ Better leverage its knowledge management or business intelligence, or
- ✍ To enhance the way it markets and delivers its products and services, now and in the future.

The first and last ones are of particular relevance to your industry.

Clients, manufacturers, distributors. All the players need a way to communicate more efficiently. Many people in your industry are also concerned about accounting, as well as reducing cost.

Let me give you an example of a print-based company that adopted a successful e-business strategy.

There's a multi-billion dollar media giant in the U.S. called Gannett Co., Inc. They own 75 newspapers, including USA Today, and 21 TV stations. About four years ago, they merged two separate computer systems to create a single solution to manage their circulation, advertising and marketing.

Their new system, with 2000 new programs and millions of lines of code, is maintained by no more than seven programmers, half the number they needed to do the job before.

I think this provides a good example of how e-business technology can reduce operational costs.

In a firm the size of Gannett Co., 75 papers, 21 TV stations, millions of subscriptions, there's a lot to keep track of, and a lot that can go wrong. Using smart e-business sense, they've not only managed to save money but, more importantly, they're keeping things running smoothly. Gannett has discovered that e-business tools can significantly reduce human error and enhance operational efficiency. We all know that big business can mean big headaches. E-business can provide much needed relief.

But let's look at the other end of the spectrum, the small businesses that have to worry not about headaches wearing them down, but about getting up off the ground.

Another catch phrase of e-commerce, borrowed from a famous New Yorker cartoon, is "On the Internet nobody knows you're a dog." The anonymity of the Internet means little companies can act like big companies. The Internet levels the playing field and customer satisfaction becomes the primary measure of success.

We're starting to see a prevalence of start-up companies that are using e-business to close the gap between them and larger companies.

There's a small publishing company in Fredericton that fits into this category.

They call themselves Broken Jaw Press. They're little guys in the business, for sure, but they stay in business by using innovative ways to market their products.

Along with the few paperbacks they published last year, they put out an even larger crop of eBooks - in Adobe PDF format.

They've managed to publish books a company their size could never afford to have offset printed. Also, the fact that their books can be delivered instantly to any customer around the globe shows how powerful a tool IT is.

Many other companies have found innovative ways to market their products using the Internet.

iPrint, a provider of print services in Redwood City, California, gets most of its customers from the business community. They're able to offer thousands of products through their Web site. Founded in 1996, iPrint's customers can use the site to design, view, proof, and order a wide range of custom-printed materials using a 7-step process.

Formsplanet.com, an Ottawa-based application service provider of electronic forms, has a Web site where subscribers can customize and fill all types of forms using a simple Web browser - eliminating the need for pre-printed forms or static PDF or word-processing forms.

But, in spite of the growth we're seeing, Canadians are still lagging in their adoption of e-commerce. We've been remarkably slow to embrace e-commerce, both business-to-consumer and business-to-business e-commerce.

Canadians are less inclined than Americans to purchase goods and services online. Fewer Canadian companies offer their products and services online. And recent projections indicate that this gap with the US is widening.

The harsh reality is that with all our infrastructure, with all our technology, with all our net-savvy Canadians, we are at risk of exporting e-commerce opportunities and wealth elsewhere.

Why isn't Canada doing better? For one, Canada does not have the e-clusters that are sprouting up like mushrooms across the United States.

These clusters bring together high-tech companies, Internet savvy investment interests and strong research and educational institutions to fuel e-commerce.

A second reason is money. It's difficult to attract early stage capital to new ventures in Canada. It's also hard to get additional funding as a company progresses from the start-up phase to the initial public offering stage.

The third reason and, perhaps most important, is that there's an epidemic of complacency among existing businesses in Canada.

Many business leaders just don't see the Internet as a strategic priority yet and they don't recognize the importance of getting on board soon.

Why should Canadian companies leap quickly at this opportunity? And why should Canadian printers care about electronic commerce? For all of the reasons I mentioned above plus one more.

Yours is an industry with many proud traditions. Your contribution to literacy and, in turn, the

evolution of distributed networked intelligence, is inestimable. No industry has done more to advance the evolution of human intelligence.

You also have a strong tradition of innovation. Your evolution celebrates milestones like hot-type, mechanical presses and computer-based type-setting. You have demonstrated your capacity to embrace innovation over six centuries. You must understand and embrace these new opportunities in order to both honour your past and to guarantee your future.

#### **Related Resources:**

ITAC website:

- ✍ E-Commerce - [ITAC Initiatives - Related Resources](#)
- ✍ [ITAC Proposes that Canada "Light Up The Border"](#) - August 19, 2002 - News Release
- ✍ [Policy: Innovation](#)
- ✍ [Profile - Gaylen Duncan](#)

[Allan Rock Releases Parameters for New Infrastructure Programs](#) - August 9, 2002 Industry Canada News Release  
[Broken Jaw Press](#)  
[Canadian Printing Industries Association](#)  
[Gannett Co., Inc.](#)  
[iPrint.com](#)

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