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Improving Canada's Digital Advantage: Achieving Prosperity Through Leadership

IOG Response to the Government of Canada's Consultation Paper on a Digital Economy Strategy for Canada

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Improving Canada's Digital Advantage: Strategies for Sustainable Prosperity

Introduction

The Institute On Governance (IOG) is pleased to provide a submission in response to the Government of Canada's consultation process on a Digital Economy Strategy for Canada. The IOG possesses significant expertise in governance issues as an independent, Canada-based, not-for-profit public interest institution with its head office in Ottawa and an office in Toronto.

Our mission is *'advancing better governance in the public interest',* which we accomplish by exploring, developing and promoting the principles, standards and practices which underlie good governance in the public sphere, both in Canada and abroad. As an institution that promotes good governance and collaboration in the public space, the IOG is an example of a living laboratory for continuous governance improvements and innovation. Our experts frequently provide valuable perspectives on emerging issues that require critical policy interventions involving governments, citizens, the private sector and others integral to the performance of our economy and society (refer to www.iog.ca).

The IOG 's Business Plans focus on: new business and governance models as organizations and networks transform themselves and respond to high-velocity knowledge transfer and continuous change in domestic and international arenas; cultivating dialogue in the public space to foster the adoption of governance innovations and heightened productivity gains; and, 'governance as leadership'. These priority areas of focus are reflected in our submission.

Achieving Prosperity Through Leadership in the Digital Economy

The digital economy holds enormous promise for increasing Canada's productivity, competitiveness, and participation in the global economy and digital society. We have already seen the creation of new e-commerce, e-medicine, and e-learning sectors, by way of example, accompanied by a marked increase in new forms of employment, far-reaching telecommunications, social media and global financial systems, and, networks of collaboration and governance in the public space, resulting from the wireless broadband revolution sweeping the globe.

In examining the global desire to seize opportunities inherent in the digital sphere, for the benefit of all nations, the traditional pre-occupation with order and control, with equilibrium, geographical boundaries, tangible assets and closed markets is giving way to adaptiveness, the rapid adoption of innovative technologies, knowledge and content, non-linearity, self-organization, intangible assets, fluid networks, open markets and the supranational space.

Canada has always been a nation of creative entrepreneurs possessed of high-value ideas, resources, products and services and the ability to maximize them to the advantage of our economy and society and to secure our unique place in the world.

During the World War era, Canadians invented many of the industries, technologies and government programs and services that currently form the basis of our high quality of life and that are the hallmark of Canada's economic and social contract with its citizens. In the last few decades, major federal investments have occurred, building on the accrued knowledge, human and financial capital of the post-World War period. There is, however, no room for being complacent about our economic sustainability. We have lost ground in a number of areas that have been documented by the Bank of Canada, in international studies conducted by the OECD and by other bodies.

In an era of ubiquitous computing, and, as a small open economy subject to immense global forces, Canada must take bold measures to secure its economic, social and digital advantage and its very future as a nation.

We are at a crossroads as a country - no less than a strategic inflection point in our history, much as the World War period was for Canada – and, we must seize the opportunity to mobilize our strengths once again to Canada's advantage. The question of how to create new value brings with it the even more important question of "How to capture as much as possible of the value being created?"

As the Governor of the Bank of Canada recently remarked, following the conclusion of the G-20 Summit meetings in Canada, "… now is not the time to rest on our laurels. Public and private boldness, both at home and abroad, will be required to secure the recovery. This means G-20 action to reform the global financial system and to secure a sustainable recovery. This means investments by our businesses to improve productivity and to gain new markets. This means Canadians should fully engage in the new multi-polar global economy. "

To capture the full opportunities of the connected economy requires that we fundamentally shift key structures and ways of doing business in the Canadian landscape.

As Winston Churchill once said, " First we shape our institutions, then they shape us." The same is true of the way in which we frame the policy debate surrounding the Digital Economy. We need to understand the global relationships and networks that can be deployed to spur economic growth, to foster innovation on a global scale by Canadians and their partners, and, the ability to participate in a networked world where borders are not acknowledged and that re-shapes the very notions of citizenship and identity, at the individual and community level.

The Five Themes in the Government of Canada Consultation Paper

Theme I - The Capacity to Innovate Using Digital Technologies

(i) Disturbing Canada's Present In the Service of the Future

Advanced economies and societies can create innovation force fields that favour emergent properties and knowledge, including nanotechnology, space technologies, geospatial systems, life science discoveries, robotics, green energy, cloud computing, new financial offerings, and that foster healthy societies, communities and high-performing public, private sector and civil society partnerships.

In effect, these societies lower barriers of all kinds to permit a higher rate of disruptive innovation, to seize opportunities that exist in the global space, thereby actively disturbing the present in the service of the future. There can be no resting state of equilibrium for any nation.

Just as a chemical solvent such as alcohol or water enables molecules to break apart and to recombine in new ways, so too are there some universal solvents that can be applied to create increased value in the Digital Economy as Canada seeks to turn ideas into action and to unite our leaders, innovators, entrepreneurs and explorers with those who are buyers, users, developers, ambassadors and connoisseurs of our products, services, knowledge and networks at home and abroad.

The first section of the federal consultation paper (page 15) asks, "Should Canada focus on increasing innovation in some key sectors or focus on providing the foundation for innovation across the economy?" It likewise asks, " Which conditions best incent and promote adoption of ICT by Canadian businesses and public sectors?"

Responding to the first question, Canada does not yet have in place all of the conditions required to create a successful foundation for innovation across the economy. The IOG believes that the equalization of access to digital tools, networks and technologies *is a condition of civic participation in well-performing democratic nations*. Canada cannot meet the terms and conditions of democratic participation by its citizens in the life of the country – much less the promise of the *Advantage Canada* agenda – without making investments to ensure that the many Canadians who are still unable to access the digital world can be given the opportunity to do so, rather than being left to their own devices to find their way through other channels that may be less accessible, particularly outside of regular business hours. For the many Canadians who work part-time or in minimum wage jobs or in remote, northern and rural settings or who are disabled, the ability to access information about government programs on the same footing as other citizens or to participate in digitally enabled social networks is not yet within reach. As the poet Robert Frost

once said, there are "miles to go until I sleep." This is an important governance issue from where the IOG resides.

(ii) Digital Literacy and Access as a Foundation for the Digital Economy

To begin with, while large numbers of Canadians enjoy access to a digital universe, many others do not enjoy a level of digital literacy that would enable them to access or capitalize on the benefits of digital technologies for on-line banking, e-commerce, or to secure access to private sector, non-profit or government services.

If Canadians are to secure access to public discussion groups, to get involved in shaping policy interventions that fundamentally alter their ability to exercise their rights and responsibilities as active citizens, they must enjoy not only access to digital networks but the 'know-how' to employ them to advantage – in schools, the workplace, homes, communities and in the shared public commons that defines their well-being and success in economic, social and other terms.

Recommendations:

- The IOG fully supports the inclusion of a **digital literacy strategy** in Canada's Digital Economy Strategy as a foundation piece of good governance.

- The issue of digital literacy is closely intertwined with several other adjacent challenges, that of financial literacy, for example, an area in which Finance Canada, the Financial Consumer Agency of Canada, Human Resources and Development Canada, the Canadian Banker's Association, and other partners have joined forces to assist citizens in acquiring the knowledge needed to exercise informed decision-making and to access reliable financial information in the digital universe.

- In the same way, the Government of Canada can also establish a strategy to increase digital literacy, building on the kinds of partnerships already established to address financial literacy.

- Related recommendations have been made by the Media Awareness Network of Canada (MNet) and entail the creation of a digital literacy task force to develop a blueprint for a digital literacy strategy and to determine the digital skills needed by children and youth. Such a strategy should also encompass other groups in our society, including seniors, those living in rural, remote and northern communities, those with disabilities, new immigrants and highly mobile populations. The ability of these groups to participate in a democratic society is conditioned by access to digital technology and 'know-how', supported by community-based networks.

- The Digital Agenda adopted by the countries represented by the European Commission very specifically provides for the development of measures to enhance digital literacy, skills and inclusion. Not having a similar strategy in Canada leaves our citizens at a distinct disadvantage (potentially undermining our knowledge advantage as set out in the *Advantage Canada* agenda).

- At a professional level, many employers are also witnessing what they would term a *digital literacy deficit* that prevents their employees and organizations, particularly the *small-to-medium enterprises* that make up the largest part of Canada's economy, from taking advantage of new or emerging business opportunities. Thus, any digital literacy strategy should also ensure that SMEs are able to improve their access to ICT and to participate in innovations that enhance their productivity. Investments and tax incentives for SMEs must be a feature of any Digital Advantage Strategy.

- Many of the features of a digital economy require *enhanced access to public sector content on-line that assists citizens in acquiring digital literacy skills.* As a model user of digital technologies and of digital content, the Government of Canada can and should support *enhanced public access to digital content*, some of which can be funded through Smart communities initiatives of Industry Canada and through the federal regional economic development agencies to better align federal spending with top federal priorities.

In the desire to achieve a sustainable, equitable and resilient economy, strengthening Canada's ability to participate in the Digital Economy will also require building not only foundational supports, such as enhancing digital literacy and participation in the connected economy and society, but that we also provide targeted supports to areas where we already have some bench strength. These two objectives, further to the first question asked in the consultation paper, are not mutually exclusive - rather, they are *complementary approaches.*

(iii) Size Does Matter – Going Global

Canadians often excel at creating small to medium enterprises, employing sophisticated technologies that have contributed to significant economic growth in this country. At the same time, Canadian firms often find that they are unable to grow businesses to the next level of success or to seize opportunities to work across global value chains. Canada has seen the demise and fragmentation of organizations such as Nortel in recent years and continues to see the buyout of high-tech organizations. The large multi-faceted high-technology companies that were originally created by innovators like Terence Matthews and partners have diminished in number in Canada.

By contrast, Google, it should be noted, and Google Earth more recently, received very significant investment from the US government at their inception, including government investment from the security, defence and intelligence communities. This has served to sustain innovation and growth that has created spillover effects across all sectors of the economy and society in the United States and in other countries.

Canada has made a number of investments and moved proactively to ensure that the Radarsat II technologies developed in Canada, with taxpayer's monies, in partnership with McDonald Dettwiler and Associates (MDA) continue to be held in Canada. Commitments and investments have been made to ensure their viability through federal use of these technologies in defence, security, intelligence, telecommunications, cultural, entertainment and other domains. In addition, for companies such as Research in Motion and others that have been incubated and grown in Canada, there is the need to provide strategic investment and support to *maintain our ongoing innovation capability.*

It is vitally important as we define Canada's public interest in ensuring the advancement of leading technologies, much as other countries have done, from Sweden to China and India, that we understand that the content and abilities inherent in a number of these technologies are integral to our digital technology leadership. In the alternative, we are likely to be reduced to asking for permission to deploy our own technological advances in new ways if they are held or owned elsewhere around the globe. Instead, we should be seeking to reinforce and to help Canadian advanced science and technology companies to grow to the next level of success and to provide innovative tax, policy, program and other supports to accomplish their migration to global-scale value chains and larger scale business enterprises.

For reasons of Canada's sovereignty, much *like the financial sovereignty* that Canada *has exerted by playing a leadership role in G-20 financial system arena,* there is room for Canada to strengthen areas of digital activity that are vitally important to our ability to take decisions affecting our citizens, for their safety, well-being, and, to assure the ability to be more than a niche market in a global economy.

Recommendations:

- Canada needs to examine a number of strategic areas, (i.e. small to medium size corporations in Canada pioneering geo-spatial technologies, satellite capacity, robotics, defence applications, the use of spectrum in different ways, and marine or green energy technologies) for *enhanced investment* so that we *do not lose our ability to lead these developments and to exert the ability to govern in our own country*. Space-based exploration and applications, using satellites and imaging technologies, allow us to macro-engineer our planetary environment in a way that some terrestrial technologies do not permit us to do. To monitor the ozone layer, to reforest

old growth forests, monitor Arctic ice conditions, map our country, create global navigation systems for marine navigation, aircraft, land vehicles, and to manage our planet and its environmental health, the importance of geospatial and space-based sensors, communications satellites and intelligent networks will continue to increase.

- Programs like IRAP, those offered by DRDC and by NSERC could be examined with a view to facilitating the growth of many small capital technology companies in Canada that are crucial to our territorial integrity and to our knowledge and innovation agenda for the next decades.

- This also means ensuring that the bandwidth and infrastructure that supports myriad media and entertainment applications in Canada can be sustained as digital distribution channels and acquisitions of new interactive content and applications continue to drive economic growth.

- Instead of being content to play in Canada's backyard as a primary market, or even in a North American market, growth for many of our advanced science, technology, e-commerce, cultural and media, aerospace, defence, bio-medical and other industries is *reliant on enhanced access to global markets*. To the extent that Export Development Canada, Foreign Affairs and International Trade, and other federal entities can help Canadian firms to penetrate global supply chains more rapidly, we also need to *formalize the use of networks of private sector leaders, governance bodies and other ambassadors* whose role is to actively engage in promoting the technological, scientific, knowledge-based and cultural content of our innovative offerings around the world.

- If, as the consultation paper proposes, Canada is to "become a country of technology" leaders, we will also need to *devise new business models*. In Canada, for example, the media industry has sought stronger copyright laws with wider coverage to address digital content and to combat the infringement of copyright often found in unauthorized file sharing over P2P networks. This approach, taken together with monetizing access to musical and video works, has created a complex array of regulations, with each player demanding royalties. In addition to this model, we should be investing in developing portals that allow for free sampling of some products, on-line distribution and the introduction of new products as part of this process to create new experiences with access to 3-D technologies, advanced sound elements, and the ability to alter content, for a fee, such as remixing music. Creating *new revenue streams requires further experimentation, a feature that must be incorporated in any Digital Economy Strategy,* particularly one that creates a structure for Canada's global digital capacity.

- Canada's Digital Advantage must be one that is defined in a global context, not just in a domestic context. Giving citizens access to the public commons, to governance and commerce networks means doing so beyond our borders.

- We must also look at an online dispute resolution system for e-commerce transactions with the ability to resolve problems expeditiously, real-time, in the interests of the consumer as high-trust on the part of agents in the e-commerce market yields high-use, and low trust in these networks guarantees low use of digital highways.

Theme 2- Building a World-Class Digital Infrastructure

The second section of the consultation paper focuses on building a world-class digital infrastructure, and poses the question of whether domestic progress in setting targets for next generation network speeds and coverage is sufficient. The concise answer to this question is that Canada has persistent gaps in our current infrastructure that will impede our ability to be in the forefront of developments in the digital global economy, in the absence of further investment and the deployment of more competitive approaches to the use of spectrum.

(i) Partnering to shape new frontiers

Very significant progress has been made with strategic investments by the private sector, with federal investments such the *Broadband Canada: Connecting Rural Canadians* program, to ensure that Canadians have access to high-speed networks and are connected to key networks.

However, there is still ample room for expansion and optimization of technologies and of the financing needed to support advanced infrastructure development. While the same coverage will not always be possible in remote and northern locations of Canada, in a country that is sizeable in geographic terms, we will need to examine what standards we wish to set to guarantee certain speeds and coverage and the adoption of next generation access networks.

Recommendations:

- Canada should examine how to attract capital for investment in infrastructure (combining fixed and wireless elements), including the guarantee by the federal government of loans and credit regimes to permit enhancement of next generation access networks.

- Consideration should be given to establishing policy frameworks setting out targets for higher Internet speeds exceeding 30 Mbps, and to look at ultra fast connections exceeding 100 Mbps.

- Investment in enhanced Research and Development (R&D) should be expanded to foster the development of competitive next generation networks.

- Philanthropic bodies with a public purpose interest in advancing digital infrastructure should be provided with incentives to encourage their involvement in community-based partnerships. Groups like the Bill and Melinda Gates Foundation, the Donner Foundation, the McCain Foundation and others might conceivably be engaged in these partnerships, as they seek to foster civic participation, dialogue in the public space on matters of social and economic importance.

- The mega-revitalization project called "Toronto Waterfront", for example, bringing ultra-broadband at Google's residential test speeds of one billion bits a second to Toronto and providing affordable access to collaboration levels seen in other major global cities, promises enhanced access to health care, world class education and workplace collaboration and innovation. This initiative, which also creates a new standard for connectivity in buildings, where access to high-speed Internet protocol networks form the basis of the Intelligent building, is part of a larger vision called i-Canada, intended to promote intelligent communities to ensure economic growth, satisfying employment and social prosperity. New and emerging community-based approaches to digital infrastructure such as this one need to be examined to see how they can be replicated in other settings. This may entail the creation of community-based Innovation Centres of Excellence.

- Additionally*, capital infrastructure*, including new projects being developed by the Government of Canada as part of the billions spent annually should ensure that smart technologies and smart power grids are built-in at the outset of any new capital projects as well as in any upgrading of federal facilities and in renovations. For multi-billion dollar investments that include bridges, roads, power grids, marine waterways and information highways associated with the *development of the Detroit-Windsor corridor, the Atlantic, Pacific and other gateways, as well as community-based programs focusing on recreational and other facilities like RINC, must integrate the capacity for digital upgrades and innovations at the outset.*

- Each city in Canada has the equivalent of a World Trade Centre that can be employed as a 'hub' to bring together leaders to examine technology transfer and infrastructure investments germane to that city and broader region. The *World Trade Centre Network in Canada can be asked to play a role.*

- Organizations and networks *like the CATA Alliance, who are promoting advanced technology adoption and transfer across the country and around the globe, are an invaluable resource* that we should be tapping into in the development of Canada's Digital Economy Strategy.

Theme 3- Growing the Information and Communications Technology Industry

In examining what is required to grow the information and communications technology industry, including the development of "communities of innovation" in Canada, the consultation paper asks a number of questions pertaining to innovation, venture capital financing and various partnerships that could be constructed to foster talent development and augment R&D investments. Unlike many of its competitor nations, including those in the G-20 countries, Canadian firms and SMEs in particular enjoy the unenviable distinction of investing less than half of what most firms invest in R&D, in digital and other technologies linked to sustained economic growth and productivity. This must be remedied before the gap is so large that it cannot be closed in relation to other countries. Such investments by private sector firms, with government incentives, are a key factor in good governance and in maintaining a high quality of life in Canada.

(i) Scientific and Technological Literacy and the Architects of our Future

Recommendations:

- As we look at enhancing digital infrastructure, the use of spectrum and the financing of new capital infrastructure needed, we need to look at the human knowledge and skills needed to bring this to fruition.

- As CATA, CATA-WIT and other commentators in Canada have noted, Canada is still not producing enough technologically and scientifically-literate practitioners, including financiers and venture capitalists who are scientifically and technologically literate. Key decision-makers in the public and private sectors are routinely called upon to make major investment decisions or policy and regulatory decisions *without being necessarily scientifically and technologically proficient themselves or having access to those who are literate in these domains.*

- We will need to work with employers and with universities, colleges, professional networks and governments to find ways to enhance the talent pool available to us of the *digital cognescenti* and of those who know where to find the digitally literate people who can serve as a brain trust/advisors in a rapidly evolving world. We do not, for example, foster the kind of *apprenticeship and mentoring programs for our scientists and engineers* and others that are seen in countries from Ireland and Germany to Singapore. Not coincidentally, if we look at the ministers and prime ministers in global governments such as Singapore, Germany or Sweden or India who are technologically literate or at Deputy Minister level decision-makers in various countries, we find a higher concentration of technologically and

scientifically literate individuals than we have traditionally seen in Canada. It may be that each department federally needs to *access a network of scientific and technological advisors—no less an important requirement than having access to external audit committees, for example, as a feature of modern governance.*

- By fostering a level of scientific and technological literacy in the highest levels of decision-making networks in the public and private sectors, in academic, civil society and other sectors, we increase the odds of making better investments to improve our economic and social well-being.

- In the same way that, *decades ago*, members of the judiciary had to become scientifically and medically literate to issue vitally important decisions in court cases dealing with new human reproductive technologies, new oncology treatments, vaccines, issues pertaining to euthanasia and bio-medical advances, so must we promote other forms of literacy in key institutions and networks.

- As with the World War period, it is perhaps time, once again, to create a network of **"$1 a year men and women**" who are leaders from all sectors of society and the economy, who possess expertise in science and advanced technology areas, in communications and culture, in security and defence, to help Canada to craft the knowledge, financial and human capital needed for the next fifty years to drive our Digital Economy. In today's world, this would need to include representatives from around the globe, youth representatives and one or two futurists. *For the IOG, this kind of dialogue in the public space to foster modern governance is one that we would be prepared to host across the country or as part of an advisory network for innovation.*

- While expanded R&D will need to be harnessed for Canada to continue to be a leader in exploiting and exploring and adopting new and advanced technologies and to employ knowledge in different ways, we need to ensure that *citizen leaders* are given a role in *becoming the architects of their own desired future.* The IOG can assist in this change process.

As noted above, in a number of recommendations, organizations like the *Institute On Governance* can play a role in fostering this dialogue in Canada's public spaces and in incorporating the ideas that are part of 'global brainpower' driving a techno-spheric revolution. The Governance Laboratory of the IOG is well-equipped to host impartial, independent, protected zones for critical policy and public discussions of the steps needed to succeed in the next wave of technological innovation spanning the globe.

The IOG applauds the work being advanced by Industry Canada and by Human Resources and Development Canada to create a Digital Economy Advantage and would be pleased to partner with the Government of Canada in this change agenda.

Theme 4 - Digital Media: Creating Canada's Digital Content Advantage

As Canada seeks to promote industry sectors associated with the creation of content for digital media, to enable content creation and distribution and the aggregation of content, we are invited to explore key factors to position Canada as a destination of choice for creativity and innovation.

(i) The Modern Tribal Campfire and Digital Content – Dialogue in the Public Space

Recommendations:

- Canada's marketplace framework for digital media and content must provide a place for the vibrant relationships that are at the heart of any innovation, including the promotion of 'info-mediaries' who replace intermediaries as citizens create their own social media networks, blogs and ways of reaching out to one another as citizens and consumers and as they create coalitions of 'trust agents'.

- To succeed in this complex, interconnected biosphere, citizens self-assemble in virtual networks that are still not being recognized in our national policies, cultural and media institutions. Digital platforms, peer-to-peer media networks stretching around the globe have citizens editing Wikipedia, posting to Ushahidi in Kenya, and taking advantage of the innate, human desire to improve the world on behalf of all its human residents. These 'offshore' networks are frequently used to achieve public outcomes and interests that governments often see as being intractable or challenging to resolve. *The IOG possesses significant expertise in hosting networked discussions in a protected space* and would *be pleased to play a role* working with Industry Canada and other federal partners and Ministers *to ensure that ideas for digital content to give Canada an advantage do not come from the same "water and ideas well" but arise from diverse perspectives.*

- The re-invention on a global scale of the modern *tribal campfire* in very human terms, aided by technological advances that eliminate time, distance, nationality and other industrial era notions, is leading to a feeling on the part of many that they can alter their world, without the help of governments and other formal institutions. This is a global laboratory for the exploration of new governance and citizen-centred models of innovation. *The IOG is prepared to host the equivalent of 'modern campfires' in partnership with citizens and the Government of Canada to ensure that citizens are empowered to direct content that is vital to their democratic participation.*

- If our museums, radio, television, cultural, publishing and other content leaders in society are to continue to play a role, they will need to cast the shadow of the future forward by inventing not just portals for digital content and digital repositories for digital media, but they will need to embrace the digital mavericks in our midst who are shaping new, open markets for ideas.

- The death of previous monopolies that we have seen over many centuries being eclipsed, to be replaced by new distributed networks of human storytelling, are today's modern equivalent of the introduction of the printing press that caused the religious orders of centuries-old, as exclusive bookmakers to the wealthy elites, to lose their monopoly. Television eclipsed the radio. Wireless phones have eclipsed hard-wire phones and telephony systems. The supply and demand that is a feature of a democratic and educated society will shape the content that flows through digital media, much as water and electricity flow through pipelines and grids.

- Giving a sense of higher human purpose to the public discourse represented by our various industries will help, but our public policies will also need to acknowledge this *open market for ideas, alien perspectives* and to create an ability to metabolize them as part of our mainstream public DNA.

- We have not engaged the '*hotbeds' of creativity in this debate* that we might usefully involve, including creative epicenters like Sheridan College, Le Cirque du Soleil, Aboriginal communities, the creators of Imax, the gamesters who created new virtual reality programs and games such as 'Guitar Hero' in the discussion of the next future to unfold. The IOG could help to create a discussion via networks of this kind as a form of an *innovation meritocracy.*

Externalities that were previously ignored such as the cultural identities, metaphors and stories that are the expression of universally held human values, at the source of human diversity and ingenuity, are suddenly coming into clearer focus. These alternative perspectives are finding receptive niches in governance as boundaries and institutions become more permeable.

As noted above*, the IOG is in a unique position to assist the Government of Canada in facilitating the relationship-based networks through which much of our digital content and media are being fashioned, as new cultural norms are also emerging as a shared discussion of our values in this country.*

Theme 5 - Building Digital Skills for Tomorrow

This section of the consultation paper addresses critical challenges in developing a digital economy and ways in which to prepare the workforce and workplace to adapt to this new learning ecology.

The *small world networks* that have emerged in the last decade, aided by the creative disruptions of new technologies, have served to create dynamic innovation systems that are not reflected in current government policies and approaches in many cases.

Public policy-making and innovation in a digital economy are, by definition, the result of network interactions between complex webs of intelligent agents who seek to discover what lies between the formal structures of hierarchies, markets and societies and more porous, informal and diverse human networks.

Thus, the social construction of the digital economy is one that we need to better understand as most governments still operate on a machine-based model, reflected in terms such as the 'machinery of government', conditioned by departments and agencies whose role is often defined by industrial era demarcations that resemble nothing more than the factory assembly line.

This very stability and rigidity in structure leads government to define issues by program votes, leading to the treatment of seniors and their multiple needs in respect of health care, disability, transportation, income security or other matters in a reductionist fashion, rather than dealing with *the matter of ageing in our society* and how this creates opportunities in economic and social terms that are not addressed in the 'breakdown' machinery model of government by silos. The IOG, for example, is working on modern governance issues (i.e. *Ageing Matters) to frame the public policy debate in a way that allows for improved outcomes for seniors and older persons in our society and economy.*

(i) The Anatomy of the Future

Recommendations:

- As governments seek to devise better ways of framing these debates and solutions that are not rooted in existing ways of seeing the world, we need government innovators, paired with citizens who demonstrate a level of plasticity and openness to new ideas, to work together in very different networks to decode the anatomy of our future.

- The Digital Economy has once again reminded us that what was heresy a few decades ago is now accepted as orthodoxy. In the same way that IBM's Tom Watson commented in 1958 that "there is a world market for about five computers" or that former Digital Equipment Corporation president Ken Olsen observed in 1977 " that there is no reason for any individual to have a computer in their home," we have our own myths to deconstruct about our digital advantage and what we need to succeed as digital leaders.

- Fostering investment through sector councils, through educational institutions, through mentoring programs and apprenticeship models in the

workplace, in social networks and in community-based settings will help Canadians connect in today's world and to employ their talents in the employment markets of today and tomorrow. Accordingly, we need to look at the world's leading practices and to see which of the newest social and technological innovations can be adapted to our Canadian environment.

Conclusion

The Digital Economy of today and tomorrow and the creation of strategies for Canada's sustained prosperity will require that we go beyond technological advances and infrastructure and even the knowledge and information that populate these systems, to find ways to **spend our imagination and not just our money.**

It requires that Canadians understand the vital importance of reinventing our economy to ensure that fortune favours us now and into the future. Collectively, there must be a commitment to invest in a more fluid and responsive economy that makes us all global residents of a virtual network of networks.

The creation of the Government of Canada's consultation process, with input provided by leaders and citizens across many sectors, is one signpost marking the next gateway to the future – and will need to be followed by strategies for Canada's next decades setting out envisioned destinations as we move forward into the future that awaits us.

The Institute On Governance would be pleased to make other contributions to help elaborate that shared vision in the public space and to help advance the Digital Economy Strategy, taking into account the convergence between the IOG's mandate and priority areas of focus:

1. Modernizing government and governance employing transformational change and ways of framing ideas to produce new outcomes
2. Incubating and advancing new governance ideas, innovations and fostering related dialogue in the public space across networks
3. Encouraging 'governance as leadership' across all sectors in Canada and around the globe to secure a sustainable advantage for Canada in the world.

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