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CONSULTATION: DEVELOPING A DIGITAL RESEARCH INFRASTRUCTURE STRATEGY

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Cat. No. Iu37-5/2015E-PDF

ISSN 978-0-660-02508-7

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Aussi offert en français sous le titre *Consultation : Élaboration d'une stratégie pour l'infrastructure de recherche numérique*.

Consultation: Developing a Digital Research Infrastructure Strategy

Background

The Science, Technology and Innovation (ST&I) Strategy, *Seizing Canada's Moment: Moving Forward in Science, Technology and Innovation 2014* recognizes the importance of world-class research to support Canada's economic and social goals. Canada has consistently topped the G7 in research and development expenditures in the higher education sector as a share of the country's gross domestic product. Canada also performs strongly in terms of research excellence and in developing, attracting and retaining highly qualified personnel. As the economic opportunities stemming from the application of new knowledge increase, it is crucial for Canada to have an advanced research and innovation system that is positioned to generate maximum returns on investment for the Canadian public.

Digital research infrastructure (DRI) is increasingly recognized as being essential to advanced research and innovation in both the public and private sectors. DRI refers to the elements required to perform data-intensive and computationally-intensive research and data management, including high-performance computing, storage, high-speed networks and other tools and resources, including software, standards and data management services. Today, DRI underpins world-class research across all disciplines.

The way research is conducted is changing: research is increasingly data-driven and/or computationally-intensive; new technologies, such as cloud computing and faster networking, are accelerating results and creating new opportunities to address scientific challenges; datasets are being constructed and mined in innovative ways; and technological advances are allowing researchers to construct ever more precise models of the world around us. These changes provide exciting new opportunities for discovery but also create new demands for the tools and infrastructure needed to carry out this work.

Canada's current DRI ecosystem needs to be examined against these rapid changes, to ensure we are keeping pace and continuing to enable world-class research. Building on related consultations and investigations undertaken by organizations such as the Leadership Council for Digital Infrastructure, the U15 Group of Canadian Research Universities, Universities Canada (formerly the Association of Universities and Colleges of Canada), the Canada Foundation for Innovation (CFI), CANARIE, Compute Canada and the federal granting agencies, Industry Canada is now seeking input from stakeholders across the country on developing a broad, medium- to long-term DRI strategy.

Developing a DRI Strategy for Canada

As announced in the federal ST&I Strategy and highlighted in Economic Action Plan 2015, the Government of Canada will develop a DRI strategy to enhance Canada's research capacity to enable world-class research and enrich Canada's research landscape. The DRI strategy will also serve to advance Digital Canada 150 by helping to position Canada as a global leader in "big data."

The DRI strategy will include new policies on research data management and storage, and a coordinated long-term approach for the provision of high speed networking, high performance computing and software tools. The strategy will encourage research excellence and optimize the federal government's significant investments in DRI, particularly in the academic sector, including the investments in the Canada Foundation for Innovation, CANARIE and the federal granting agencies announced in the recent federal budget.

Understanding the requirements of Canada's research community, and tapping into their knowledge and expertise in identifying opportunities and challenges, is the starting point in developing a DRI strategy that will produce tangible benefits for Canadians.

Outlined below are a series of question on which we are specifically seeking input. We are interested in all elements of the DRI ecosystem, including high-performance computing, high-speed networks, research data management, software, tools and human capital, with a particular emphasis on identifying opportunities and gaps. Please feel free to concentrate on those elements in which you have the greatest interest and/or the most expertise to contribute.

Consultation Questions

1. How can DRI be realistically transformed, strengthened and supported over the next five years?
2. What are the biggest challenges limiting the effectiveness of the DRI ecosystem? What opportunities are there to more efficiently deploy the human, technical and financial resources currently being devoted to DRI? How, and in what priority, should they be addressed?
3. What do you see as the biggest challenges to effective data management and the development of data standards in Canada? What could be done to promote a more

rigorous and coordinated data management system that supports research excellence and maximizes the benefits generated by our investments?

4. What is the current capacity within post-secondary institutions to support research data curation?
5. What are the biggest strengths of the DRI ecosystem? How will these strengths be affected and prioritized by a transformation of DRI in Canada?
6. What is the role of the private sector in supporting a strong DRI ecosystem in Canada?
7. Do you have any other comments or suggestions to support the development of the DRI strategy? (750 words maximum)

How to Make a Submission

We encourage you to provide your submission online at www.ic.gc.ca/DRI, no later than September 14, 2015.

Comments can also be submitted electronically to IC.DRI-IRN.IC@ic.gc.ca. If making submissions via email, we ask that you provide your name, your organization, and the perspective you bring, including but not limited to service provider, research administrator, research funder, librarian, technician, or researcher. For researchers, we would ask that you also identify your area of study.

Please note that your submission may be made available on the Industry Canada website, unless you indicate it is to be treated as confidential. If you wish for all or part of your submission to remain confidential, you must clearly indicate this when providing your submission. Submissions that are made available will be posted in the official language in which they are provided.

If you have any questions, please contact us at IC.DRI-IRN.IC@ic.gc.ca.