Information & Communication Technologies in the Arctic

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Presentation Outline

Overview:

Information and Communication Technology will play an increasingly important role in the Arctic:

❑ scientific cooperation
❑ distance education
❑ telehealth & telemedicine
❑ e-governance
❑ social and economic development

Role of SCPAR:

❑ SCPAR is an accredited Arctic Council Observer

❑ The SCPAR can be credited with advancing the issue of Arctic ICT and bringing more focus to this issue within the Arctic Council.

Swedish Leadership:

❑ Stockholm ICT workshop, December, 2001

❑ Report of Swedish M.P. Lennart Daleus to 5th Conference of Parliamentarians of the Arctic Region, Tromso, Norway, August 2002: "*IT and the Arctic*"

  ❑ raise the level of ambition for the work of Arctic nations in the ICT sector.
  ❑ Need to envisage a knowledge society accessible to all those living in the Arctic.

Summary of SCPAR Report: *IT and the Arctic (2002)*

❑ Five goals may be formulated to guide ongoing efforts and show the way forward:

  ❑ ICT must be a tool available to everyone living in the Arctic.
  ❑ ICT must boost the possibilities of setting up and investing in knowledge-intensive enterprises in the Arctic.
  ❑ ICT must help the Arctic become a region with a high general level of education.
  ❑ ICT must be used to revamp the social services in the Arctic.
  ❑ ICT must help reinforce participation, transparency and access, and the Arctic identity.

Concrete issues & measures which deserve greater focus in Arctic cooperation:

❑ An ICT information system for the Arctic should be studied and developed;

❑ There should be a joint study of Arctic infrastructure;

❑ There should be a concerted effort to follow developments in the various EU programmes, and to formulate a position of the Arctic nations in relation to these programmes;

❑ An effort should be made to set up cross-border macro-clusters in the ICT sector;

❑ An Arctic ICT dimension is needed;

❑ Efforts should be made to strengthen the development of ICT-based translation technologies between the languages of the Arctic nations;

❑ Higher expectations are needed in relation to the presence of the Arctic nations on the Internet.

Arctic Council Ministers' Declaration (2004):

❑ Maintain the issue of ICT on the Arctic Council Agenda under the auspices of the Arctic Council Sustainable Development Working Group with the aim of sharing information on best practices and promoting ICT initiatives in all relevant fields.

❑ Keep abreast of ICT developments in the international arena that could be of interest to the Arctic. Measures should be taken to highlight the specific needs of the Arctic globally and ensure that international regulatory agreements provide fair access of Arctic residents to ICT services.

Overall Goals of the Arctic ICT Assessment (AICTA):

Provide a baseline understanding of the state of ICT in the Arctic including the policy context, infrastructure, access, applications, current patterns of use, training, etc. to assist in:

❑ increasing the human and social capital in the North
❑ contributing to northern economic development
❑ improving the quality of life in the Arctic.

Rationale:

❑ ICT can be used to turn isolation into opportunity.

❑ See SCPAR report: "IT and the Arctic"

Timing:

❑ Release during Norwegian chairmanship and the International Polar Year in the fall of 2008 as a project to show information sharing through technology.

Organization:

❑ Leadership on AICTA to date:

❑ USA
❑ Finland
❑ Canada

❑ Coordination under the auspices of the ICTN, an expert body that assists the SDWG

❑ Secretariat support
❑ Institute of the North (Alaska)
❑ SDWG Secretariat (Ottawa)/ http://portal.sdwg.org

Planning Process:

❑ ICTN Workshop, Washington, D.C., February 2005

❑ ICTN Workshop, Yllas, Finland, September 2005

❑ AICTA Planning Workshop, Ottawa, Canada 31 May – 01 June 2006

❑ Meeting with Russian Federation ICT group, Moscow, on 11 – 12 September 2006

AICTA Planning Workshop, Ottawa, Canada, 31 May -01 June, 2006:

❑ Held at Canadian Communications Research Centre

❑ ICTN Participants from Canada, USA, Finland, Norway, Greenland, IPS with expertise in ICT Policy, Technical, Linguistics, Educational, Industry, and Indigenous issues

❑ Simultaneous Video conference: Norway, Sweden, Russia, Finland

❑ One-minute video summaries posted on Internet

❑ Teleconference Participants: USA

Cisco Systems' Internet Business Solutions Group (IBSG):

❑ IBSG participated in the Ottawa workshop

❑ IBSG is the planning and strategy arm of Cisco, which focuses on business and policy rationale and stakeholders.

❑ They investigate global issues and opportunities, especially the challenges in reaching remote communities (e.g., Russia)

❑ They provide expertise pro bono.

❑ They are not allowed to "sell" products for Cisco or even provide product information.

❑ Possibility of a high level AICTA briefing session at CISCO executive briefing facility in San Jose, California, where they can provide the next generation of teleconference, a "telepresence."

Format for Assessment:

❑ The ACIA format: "brick", summary, policy document ?

❑ Other published precedents ?

❑ New approaches: web-based, video, a layered visual, like a Google North Earth?

Methodology:

❑ Frameworks for ICT assessments are well-established, for both public and private dimensions

❑ Adaptations for AICTA can utilize experiences in other SDWG Projects and AC Working Groups

Example: Broadband in Rural and Remote Areas (BIRRA) project:

❑ An e-Ladder model used to evaluate service levels in the Broadband in Rural and Remote Areas (BIRRA) project in Lapland. An Excel spreadsheet is used to evaluate service during interviews with stakeholders.

  – Level 0 – simple communication
  – Level 1 – Information, one-way only (website)
  – Level 2 – Interaction, two-way front end
  – Level 3 – Transaction, full electronic exchange
  – Level 4 – Integration, transformation

Levels of Assessment:

❑ There is wide variation within Arctic states and among the Arctic states.

❑ Broadband does not imply common levels of access.

❑ AICTA could comprise a series of national assessments with an overlay to summarize the Arctic.

❑ A wide variety of case studies could demonstrate the levels of variation.

Fund Strategies:

❑ Develop order-of-magnitude budget

❑ Multiple strategies will be necessary
  ▪ Arctic State voluntary contributions
  ▪ Private sector in-kind contributions
    • CISCO Systems
    • Nokia
    • HP
    • Etc.
  ▪ Institutional contributions
    • Global Alliance for ICT and Development (UN)
    • International Telecommunication Union
    • Russian Development Gateway and PRIOR
    • Etc.

Draft Working Table of Contents:

1. **Executive Summary**
2. **Overview Chapter(s)**
3. **Access Chapter(s)**
4. **Application Chapter(s)**
5. **Human Dimensions**
6. **Conclusions**
   – Appendix I: Detailed Case Studies
   – Appendix II: Medium Term Technology Assessment and Forecast

Details of Draft Working Table of Contents:

❑ See separate handout

Management Structure:

❑ Interim Executive Committee: to manage "next steps" working group, to scope the project and to pursue writing and funding opportunities.

  ▪ Interim co-chairs (2)

- Representatives to the Permanent Participants (2)
- Industry Advisors (2)
- Academic Community (1)
- Other Members (2)
- Secretariat support: Ben Ellis and Bernie Funston

❑ A steering committee at a senior level will be formed

Arctic Action (ICT): (ICT Research projects):

❑ Sweden has indicated at SDWG meetings that their priorities lay more in the realm of pursuing practical ICT projects in parallel or intersecting paths with any Arctic ICT assessment.

❑ Please upload more project proposal on our website. For me this is the most practical strategy "to identify "unique "Arctic "needs" – an Arctic dimension – and define their relevance for research and demonstration in order to gain support and understanding for AA project proposals within the EU framework programmes. In addition, the unique Arctic "needs" will have to be communicated to, and accepted by, relevant decision-makers and project officers in Brussels". (from the Progress report)

European 7th Framework Program:

❑ The Framework Programme (FP) is the European Union's main instrument for funding research and development.

❑ FP6 will be running up to the end of 2006.

❑ FP7 is proposed to run for seven years. It will be fully operational as of 1 January 2007 and will expire in 2013.

❑ It is designed to build on the achievements of its predecessor towards the creation of the European Research Area, and carry it further towards the development of the knowledge economy and society in Europe.

Budget breakdown for Seventh Framework Programme (2007-2013):

❑ Total Budget: approx. 72 Billion Euros

❑ Information and Communication Technologies:
  ❑ 12670 EUR millions: Commission's proposals of April 2005
  ❑ 9110 EUR millions: Commission's amended proposals of May 2006

How will FP7 be structured?

  ❑ Four programmes corresponding to four basic components of European research:
  ❑ Cooperation

  Research activities carried out in trans-national cooperation, from collaborative projects and

networks to the coordination of national research programmes. International cooperation between the EU and third countries is an integral part of this action. This action is industry-driven.

❑ Ideas

Enhance the dynamism, creativity and excellence of European research at the frontier of knowledge in all scientific and technological fields, including engineering, socio-economic sciences and the humanities. This action will be overseen by a European Research Council.
❑ People

Quantitative and qualitative strengthening of human resources in research and technology in Europe by putting into place a coherent set of Marie Curie actions.
❑ Capacities

The objective of this action is to support research infrastructures, research for the benefit of SMEs and the research potential of European regions (Regions of Knowledge) as well as to stimulate the realisation of the full research potential (Convergence Regions) of the enlarged Union and build an effective and democratic European Knowledge society.

Cooperation Programme Themes:

❑ Themes correspond to major fields in the progress of knowledge and technology, where research must be supported and strengthened to address European social, economic, environmental and industrial challenges. The overarching aim is to contribute to sustainable development.

❑ Nine high level themes proposed:
  – Health
  – Food, agriculture and biotechnology
  – Information and communication technologies
  – Nanosciences, Nanotechnologies, Materials and new Production Technologies
  – Energy
  – Environment and Climate Change
  – Transport and Aeronautics
  – Socio-economic sciences and the humanities
  – Space and Security Research

Arctic Options in FP7:

❑ Main focus for Arctic proposals and actions is within the programme Cooperation and its thematic area of ICT, but ICT aspects are also integrated in other thematic areas such as health; food, agriculture and biotechnology; nanosciences and nanotechnologies, materials and new production technologies; energy; environment (including climate change); transport (including aeronautics); socio-economic sciences and the humanities; security and space.

❑ ICT-relevant Technology Platforms (industry driven) are e.g. sustainable Mineral Resources; transport (rail, road, maritime); embedded systems; mobile and wireless communications; steel; nanoelectronics; manufacturing technologies; water supply and sanitation; construction technology platform.

AICTA Next Steps & Timelines:

- ❑ Executive summary of project (Aug. 2006)
- ❑ Detailed Working Table of Contents (Aug. 2006)
- ❑ Communications strategy (Aug. 2006)
- ❑ Timeline and Work Plan (Sept. 2006)
- ❑ Budget and Funding Strategies (Sept. 2006)
- ❑ Approval by Arctic Council Ministers (Oct. 2006)
- ❑ Nomination of lead authors & contributing authors (Nov. 2006)
- ❑ Completed AICTA (fall 2008)

Action Arctic (ICT) Next Steps & Timelines:

- ❑ AA (ICT) group must first identify "unique" Arctic "needs" and define their relevance for research and demonstration since the existence of an "Arctic dimension" is crucial for AA (ICT) project proposals to be successful in the FP7 evaluation process.

- ❑ Unique Arctic "needs" will have to be communicated to, and accepted by, relevant decision-makers and project officers in Brussels

Progress on issues & measures which deserve greater focus in Arctic cooperation:

☺	There should be a joint study of Arctic infrastructure;
☺	There should be a concerted effort to follow developments in the various EU programmes, and to formulate a position of the Arctic nations in relation to these programmes;
	An effort should be made to set up cross-border macro-clusters in the ICT sector;
☺	An Arctic ICT dimension is needed;
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The World is Flat:

"The flat-world platform is the product of a convergence of the personal computer (which allowed every individual suddenly to be come the author of his or her own content in digital form) with fiber-optic cable (which suddenly allowed all those individuals to access more and more digital content around the world for next to nothing) with the rise of work flow software (which enabled individuals all over the world to collaborate on that same digital content from anywhere, regardless of the distances between them.)"

Source: Thomas L. Friedman, *The World is Flat, a brief history of the Twenty-first Century*, 2006, pp. 10 -11.