CIPS' JOURNEY INTO PROFESSIONALISM

WCC Education Forum

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This case study is an analysis of CIPS's Journey into Professionalism, detailing CIPS's background, national and international contributions, strategic partnerships, challenges and results.
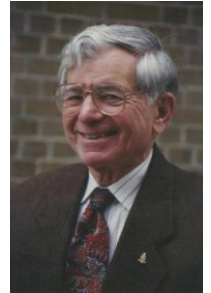
Agenda

❑Who is CIPS?

❑National and International Contributions

❑Strategic Affiliations and Partners

❑CIPS Drivers

❑Megatrends

❑Professionalism Motivations

❑Challenges

❑Results and Success Measures

Who is CIPS?

☐ Canadian Information Processing Society
☐ Chartered by the Canadian Government by Industry Canada
☐ Founded in 1958 by Kelly Gotlieb and others; 3rd President
- ☐ Early pioneer with the Associating of Computing Machinery (ACM)
- ☐ At the founding meeting of IFIP in 1959; IFIP founded by UNESCO in 1960; served as IFIP representative 1960-1966
- ☐ Co-authored the first UN study on the economic benefits of computing
- ☐ Founder of the computing profession globally
- ☐ http://www.itworldcanada.com/blog/honouring-computing-pioneers-kelly-gotlieb-2/84329

National/International Contributions

❑Founding delegate/contributor and continuing affiliations:
   - ❑ IFIP—International Federation for Information Processing
   - ❑ Seoul Accord—Global recognition for computing programs
   - ❑ ICCP—Institute for the Certification of Computing Professionals
   - ❑ ITAC—Information Technology Association of Canada
   - ❑ ICTC—Government ICT Sector Council
   - ❑ IP3—IFIP International Professional Practice Partnership
   - ❑ CCICT—Canadian Coalition for Tomorrow's ICT Skills (originally termed the Business Technology Management program now under ITAC and known as ITAC Talent)
   - ❑ FEAPO—Federation of Enterprise Architecture Professional Organizations
   - ❑ GITCA—Global IT Community Organization (1200+ user group federation of 6 million now absorbed by Microsoft community programs)

Strategic Affiliations

- ❑ CATA—Canadian Advanced Technology Alliance
- ❑ ICDL—National Operator for ECDL/ICDL
- ❑ DPI— The Association of Public Sector Information Professionals
- ❑ IEEE-CS—MOU recognition of CIPS members for services
- ❑ ACM—MOU recognition of CIPS members for services
- ❑ ACS—MOU recognition of professionals and professionalism
- ❑ IDG-IT World—Writing and sharing expertise
- ❑ Microsoft IT Manager Blog—Contributing society
- ❑ TransCanada—recognition of professionals
- ❑ Reseau ACTION TI—Quebec IT association
- ❑ HDG Insurance—working with our professionals
- ❑ Electronic Recycling Association—providing support
- ❑ … and more …

CIPS Drivers

- ❑ Policy
- ❑ Education Accreditation
- ❑ Standards of Practice / Best Practices
- ❑ Competencies
- ❑ Body of Knowledge
- ❑ Professionalism
  - ❑ certifications, ethics, professional development

Megatrends-Big Questions?

"Second Machine Age": Erik Brynjolfsson and Andrew McAfee

- Professors from MIT "global economy is on the cusp of a dramatic growth spurt driven by smart machines that finally take full advantage of advances in computer processing, artificial intelligence, networked communication and the digitization of just about everything."
- Exponential growth: computing power, digital information, cheap IoT communicating, Big Data, unlimited speed, data recombination, ubiquity
- Evidence: Driverless cars, cell-reported traffic patterns, robots scanning and understanding environments, HoloLens, Skype language translation, computers writing reviews/resumes/grading essays
- Instagram: 400+ million/mthly users, 100+ million photos/videos/daily; in 18 months sold for $1B to Facebook; Kodak declares bankruptcy same month—FB Market Value ~$250B, many times Kodak at peak; FB 7 billionaires each 10x greater wealth than George Eastman

Megatrends-Big Questions?

"Second Machine Age" : Erik Brynjolfsson and Andrew McAfee

- First machine age (Kodak), rising and related together with jobs: productivity, employment and income

- Second machine age (FB), existing separately, productivity from jobs/income; with few employees, products/services for unlimited customers, at little cost

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- Future need:
  Driving greater demand for high-level programmers; education system focussed on ICT PROFESSIONALISM E-skills for smart machines

  Ethical conduct, accountability, credentialing, professional development, quality assurance, …
  EQUALS ICT PROFESSIONALISM

CIPS
Canada's Association of Information Technology (IT) Professionals.

Professionalism Motivations

*"Do you feel computing should be a recognized profession on par with accounting, medicine and law with demonstrated **professional development**, adherence to a **code of ethics**, personal **responsibility**, public **accountability**, **quality** assurance and recognized **credentials**?"*

Professionalism Motivations

IT Profession / Certification based on common standards

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BEFORE:

- No consistency
- Failures, growing risks
- Poor perception Geek / Pirate?
- Technical features
- Job
- Skill shortages
- Education: STEM shortages

AFTER: Professionalism

- Global standards
- Quality, Protecting Public
- Professionalism/Trust/Ethics Stronger voice/Common-ID
- Engineer /Executive
- Business solutions
- Career path
- Growing GDP and innovation

Motivations: Gaining Ground
IT as a Profession or Professionalism

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Professional Development

Infrastructure Support

Professional Societal Influences

Initial Professional Education

Accreditation

Skills Development

Professional Society: Identity

Credentials

Certification

Code of Ethics

BOK (BODY OF KNOWLEDGE)

Professional Development

SOP (STANDARDS OF PRACTICE)

Professional Status

Based on *A Mature Profession*

Resource:
http://blogs.technet.com/cdnitmanagers/archive/2008/04/23/professionalizing-the-profession.aspx

Professionalism Motivations

78% in favour

Business/Tech

Career Growth

Work Experience Valued

Moving to Next Steps

Resource: ICTC Pathway to Recognition (PTR)

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Technology (IT) Professionals.

Professionalism Motivations

❑Vint Cerf co-creator of the internet. http://bit.ly/1JqYiwK

"...I know that many of my colleagues don't like this idea very much, but I think with the degree of software that we're surrounded by everywhere, that **at some point we may be called to task for failing to do something that protects people's interests and there may be liability, and as soon as that happens I think that some point of accreditation will be inescapable"**

Professionalism Motivations

- Founding Pioneer ICT & Smart Cities, Bill Hutchinson:
  - http://www.cips.ca/CIPS-INTERVIEWS-William-Hutchison-Jan2014
  - *"When you think of the impact of computing over the years now it's at the heart of everything and it really is a profession and requires professional standards, testing and accountability. I'm 100 percent behind that idea...."*

Professionalism Motivations

- Global Industry Council:

  – Prominent Leaders from Business, Industry, Government, Academia, International Bodies

  – "global program for computing as spearheaded by **IP3 and IP3-GIC will be a catalyst for a more than a 20% increase in global GDP**."

Professionalism Motivations

❑EC E-Skills: Promotion of ICT Professionalism in Europe, Pan-European ICT BOK

    ❑Sustainable model for the promotion of ICT professionalism in Europe

    ❑Reducing risk and strengthen ICT professionalism

❑ISO/IEC 24773 provides new conformance (accreditation) service of certification schemes in software and systems engineering

❑IFIP IP3: http://ipthree.org/

❑Licensing (registration and regulation) making progress with Software Engineering – 2013 10 states to 40+ US states today

Challenges

- ❑ Takes time
- ❑ Seeking mentors
- ❑ Seeking partners
- ❑ Growth of domain certifications (Bus Analysis, Security, EA, PM)
- ❑ Youth engagement

Results

❏ 33 years of accrediting Canadian Universities and College and internationally

❏ Working with IEEE-CS on international Guide to the common IT Body of Knowledge

❏ CIPS online Ethics exam

❏ Licensed SFIA partner

❏ Event partnerships with SecTor, Countermeasure, Mobile Enterprise Canada Summit, Data Marketing Conference, ProjectWorld*BusinessAnalystWorld, Big Data & Analytics Summit, Cyber Security for Oil & Gas Summit, and the National Privacy & Data Governance Congress,…

❏ Crowdfunding campaign

❏ IT Professionalism Week

Results

- ❑ 50+ % certified
- ❑ Expanding: BOK, Certifications, Partners
- ❑ Over 50 academic programs accredited + Intl
- ❑ ITAC Talent accreditation
- ❑ CCTT joint accreditations
- ❑ IP3 accredited
- ❑ Seoul Accord accredited
- ❑ ICCP accredited

Results

☐ Prime Minister Canada:

"…Since 1958, CIPS has represented its membership on important issues affecting the IT industry and profession. The association has promoted high ideals of competence and ethical practices through certification, accreditation programs, and professional development…Your efforts have made positive and lasting contributions to Canada's economic growth and competitiveness."

Summary

- Who is CIPS?
- National and International Contributions
- Strategic Affiliations and Partners
- CIPS Drivers
- Megatrends
- Professionalism Motivations
- Challenges
- Results and Success Measures

Thank you

Resources—discussions with over 1000 experts, most here: **http://bit.ly/1mbO2MG**

International Computing Educators Oral History Project
http://www.southwestern.edu/departments/mathcompsci/OHProject/other-ohprojects.html