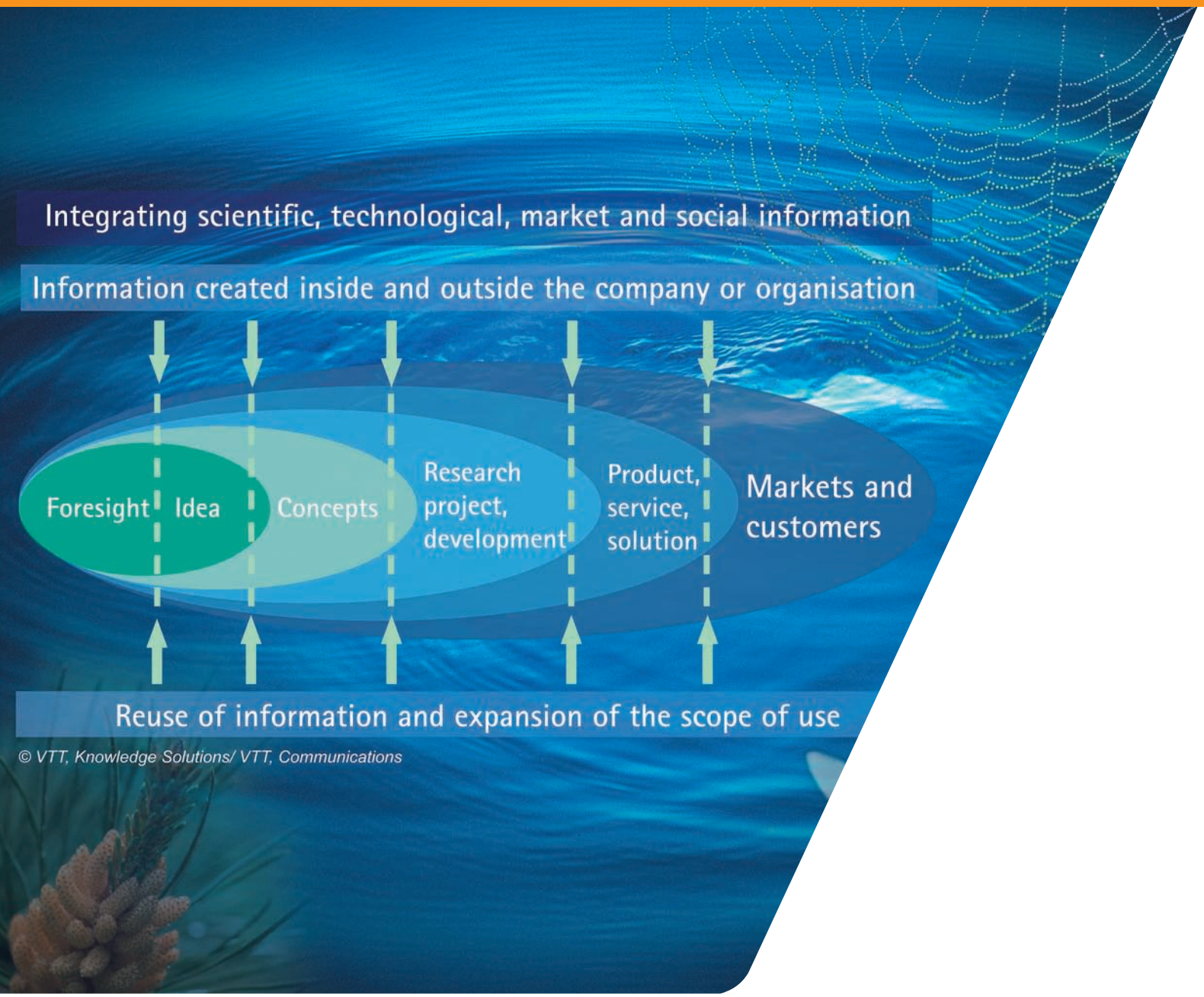
VTT SYMPOSIUM 267



From Information to Innovation

ICSTI Annual Conference

Tietoasiantuntijat
The Society for Finnish Information Specialists

Enabling Science and Innovation
ICSTI
International Council for Scientific and Technical Information

VTT

VTT SYMPOSIUM 267

Keywords:
Information utilization, innovation, information solutions, smart services

From Information to Innovation

ICSTI Annual Conference

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Kirsi Tuominen

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VTT, Bergsmansvägen 5, PB 1000, 02044 VTT
tel. växel 020 722 111, fax 020 722 4374

VTT Technical Research Centre of Finland
Vuorimiehentie 5, P.O. Box 1000, FI-02044 VTT, Finland
phone internat. +358 20 722 111, fax + 358 20 722 4374

Welcome from ICSTI's President

The 2010 Annual Conference of ICSTI looks like an exceptional one: Held in Finland for the first time, it offers, based on the joined forces of the host organisations – the Society for Finnish Information Specialists and VTT Technical Research Centre of Finland – a comprehensive and rather unique overview of the opportunities given by the changing information landscape for research and development. Innovation is the focus term of the conference – it is well known that Finnish activities can serve as a model in this domain, and consequently the traditionally well-balanced international conference program includes an important part reserved to local speakers.

Recent ICSTI events and current ICSTI technical projects have been data- and technology-oriented and have highlighted new models and formats of scholarly communication. The Helsinki conference now goes a step further and provides us with perspectives on the global promises and benefits of these developments: the impact that increasingly open, aggregated and intelligent information tools and information content will have on scientific, technical and business innovation processes as a whole.

On behalf of ICSTI, I would like to address my warmest thanks to the organisers for this ambitious conference program.

Herbert Gruttemeier

ICSTI President

Welcoming Message

Dear participants,

Information is the lifeblood of innovation. Throughout the world companies, universities, research organizations as well as governments are working to discover new frontiers and create innovations for the world's economic and social progress. The growth of the body of information and the ease of access to information are unprecedented in human history. Yet paradoxically, effective management of information is more challenging than ever before.

From Information to Innovation is the main theme of the ICSTI Annual Conference and Exhibition 2010 in Helsinki and will highlight the significance of information as the enabler and catalyst for scientific, technical and business developments and point to elements of success in building the future. The one-and-a-half day conference program approaches the main theme from various thought-provoking perspectives presented by significant opinion leaders and experts around the world.

The event offers a unique forum for global networking and sharing views with colleagues, speakers, exhibitors and sponsors. It helps us understand better how our organizations can benefit from existing information and innovative information solutions and services.

After the conference we have new perspectives to orient ourselves to future innovation competencies and information environments.

We want to thank warmly ICSTI for giving us this opportunity to arrange ICSTI Annual Conference and Exhibition 2010 in Helsinki as well as to the organising committee, our top-level speakers, sponsors, exhibitors, partners and colleagues and of course the participants who all have an important role in turning this opportunity to an immemorial learning and networking experience.

Thank you all for your presence!

Pirjo Kainu
Executive Manager, Society for Finnish Information Specialists

Kirsi Tuominen
Head of Knowledge Solutions, VTT Technical Research Centre of Finland

ICSTI, the International Council for Scientific and Technical Information

ICSTI offers a unique forum for interaction between organizations that create, disseminate and use scientific and technical information. ICSTI's mission cuts across scientific and technical disciplines, as well as international borders, to give member organizations the benefit of a truly global community.

www.icsti.org

Organizers

The ICSTI 2010 Annual Conference is organized by the Society for Finnish Information Specialists and VTT Technical Research Centre of Finland.

The Society for Finnish Information Specialists (Tietoasiantuntijat ry) is a non-profit professional organisation for those working in the field of retrieving, analysing, recording and disseminating information in various forms. The society has today about 700 members. The goal of the Society is to promote information services, develop professional skills of its members and to enhance research and publishing in its area of expertise and to act as a general liaison in the fields of information and knowledge management.

www.tietoasiantuntijat.fi

VTT Technical Research Centre of Finland is a globally networked multitechnological contract research organization. VTT provides high-end technology solutions and innovation services. VTT enhances it's customers' competitiveness, thereby creating prerequisites for society's sustainable development, employment, and wellbeing.

www.wtt.fi

Committees

Organizing Committee

Pirjo Kainu, Executive Manager, Society for Finnish Information Specialists

Tuula Salo, Information Specialist, Tieto Konstrakt Ltd.

Heli Eloranta, Information Analyst, Helsingin Energia

Veli-Pekka Hyttinen, Regional Marketing Manager, Central and Eastern Europe, SIIL Finland Ltd.

Sirpa Kirjalainen, Information Services Assistant, Society for Finnish Information Specialists

Marjut Kokko, Chief of Information Services, Supreme Court of Finland

Merja Lehti, Information Specialist, Knowledge Solutions, VTT Technical Research Centre of Finland

Marjukka Nyberg, CEO, M-Brain Ltd.

Reija Peltola, Information Specialist, Information Services, Valio Ltd.

Silja Rekomaa, Chief librarian, The Training Institute of Prison and Probation Services

Criminological Library

Riitta Sivenius, Information Analyst

Ina Westman, Communications Manager, BTJ Finland Ltd.

Program Committee

Kirsi Tuominen, Head of Knowledge Solutions, VTT Technical Research Centre of Finland

Brian Hitson, Associate Director, the U.S. Department of Energy, Office of Scientific and Technical Information (OSTI)

Jari Karjalainen, Information Specialist, Tapiola-Group

Tony Llewellyn, Executive Director; ICSTI International Council for Scientific and Technical Information

Mia Leisti, Legal Information Specialist, Catrén & Snellman Attorneys Ltd.

Jarmo Saarikko, Knowledge Specialist, Finnish Forest Research Institute Metla

Roberta Schaffer, Law Librarian of U.S. Congress

Special Advisors

Pam Bjornson, Director General, NRC Canada Institute for Scientific and Technical Information (NRC-CISTI).

Brian Park, Head of Public Relations, Korea Institute of Science and Technology Information (KISTI)

WorldWideScience

WWS Alliance Ceremony

Multilingual WorldWideScience.org^{BETA} Launch
Broadens Access to Global Science

Through the use of complex translations technology, WorldWideScience.org^{BETA} will provide the first-ever real-time searching and translation across globally-dispersed, multilingual scientific literature. This new capability is the result of an international public-private collaboration between the WorldWideScience.org Alliance, consisting of national science and technology agencies and libraries, and Microsoft Research, whose translation technology has been paired with the federated searching technology of Deep Web Technologies, Inc. WorldWideScience.org was formally launched in 2007 with federated searching of 12 databases in 10 countries. Through early 2010, it had grown to search national scientific databases in 65 countries, covering some 400 million pages of science. In addition to other WorldWideScience Alliance members, key partner organizations taking part in the ceremony included the Russian Academy of Sciences, the Chinese Ministry of Science and Technology (Institute of Scientific and Technical Information of China), and ICSTI.

Sponsors


SCOPE
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Microsoft
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Kauppalehti

Exhibitors

agentum	CAS
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mbrain business intelligence	WorldWideScience.org
ProQuest	SFS
UPPDRAGSHUSET	EBSCO
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documill	eficode
ELSEVIER	LexisNexis
SAGE 45 1965-2010	LM information delivery
Kauppalehti	

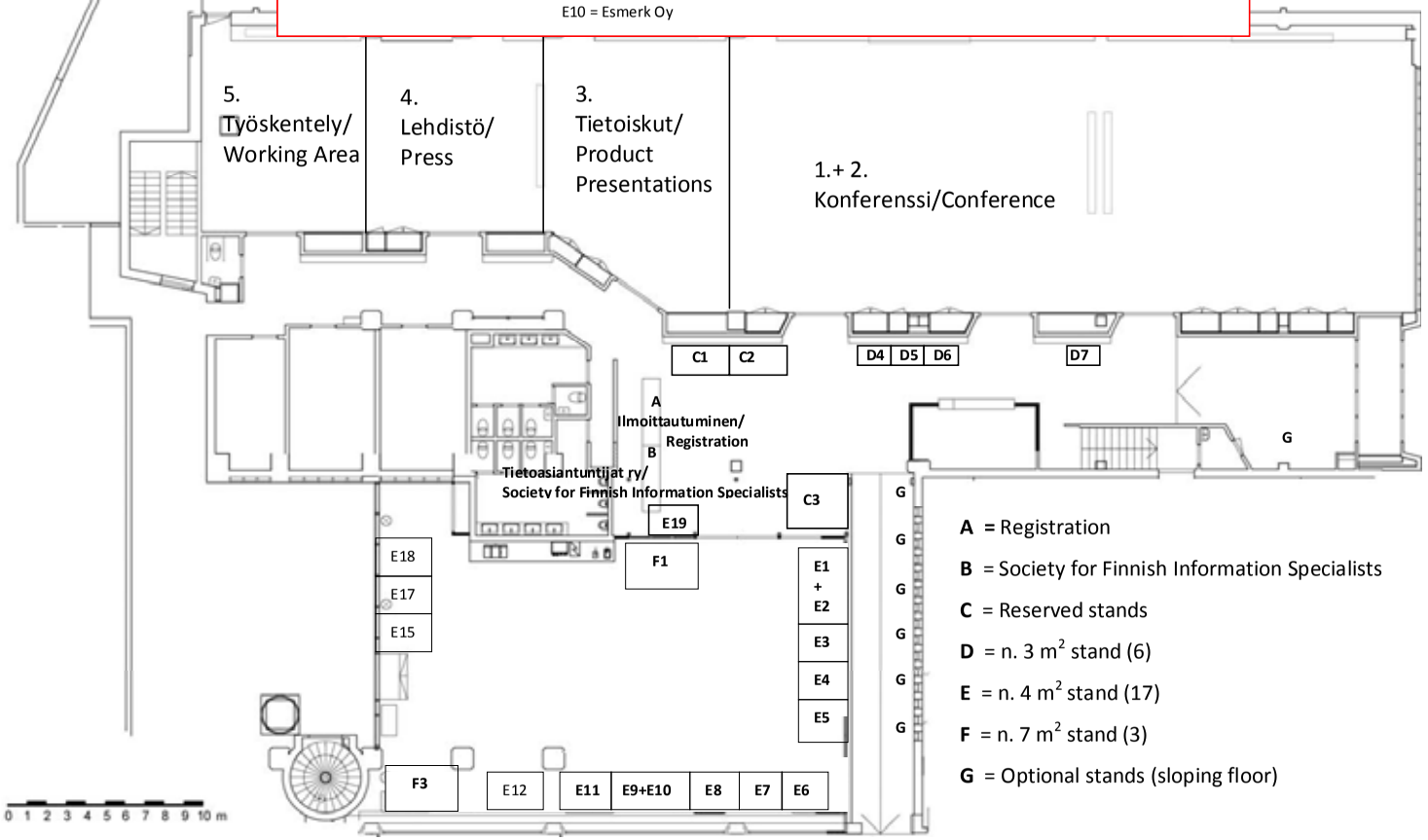
C1 = VTT
C2 = CAS
C3 = WWS

D1-D3 = ei käytössä /not in use
D4 = SFS
D5 = InnoTransfer
D6 = PRH
D7 = LexisNexis

E1 = Scope eKnowledge Center
E2 = Scope eKnowledge Center
E3 = Documill Oy
E4 = SAGE Publication
E5 = M-Brain Oy
E6 = WSOYpro
E7 = EfiCode Oy
E8 = Uppdragshuset Sverige Ab
E9 = Esmerk Oy
E10 = Esmerk Oy

E11 = Agentum
E12 = ProQuest
E15 = Elsevier
E17 = Sininen Meteoriitti Oy
E18 = LM Tietopalvelut
E19 = Kauppalehti
E13, 14, 16 = ei käytössä/not in use

F1 = EBSCO
F3 = Tieto
F2 = ei käytössä/not in use



A = Registration

B = Society for Finnish Information Specialists

C = Reserved stands

D = n. 3 m^2 stand (6)

E = n. 4 m^2 stand (17)

F = n. 7 m^2 stand (3)

G = Optional stands (sloping floor)

Venue

Speakers

Pam Bjornson
Director General of the NRC Canada Institute for Scientific and Technical Information (NRC-CISTI)

Pam Bjornson, the chairman of the afternoon session of the conference on June 10, is Director General of the NRC Canada Institute for Scientific and Technical Information (NRC-CISTI). She joined CISTI as Director of Business Affairs in 2001 and has over 25 years of management experience in the private and public sectors. She is founding Chair of the Canadian Research Data Strategy Working Group, a national, multi-disciplinary collaboration to address the challenges and issues surrounding the access and preservation of data arising from Canadian research. She is also a member of the ICSTI Executive Board, Deputy Chair of the WorldWideScience Alliance and Vice President of the international DataCite consortium

Adam Bly

Adam Bly is the founder and CEO of Seed, a leading global media and technology company committed to advancing science and its potential to improve the state of the world.

Adam Bly began his career at the age of 16 as the youngest researcher at the National Research Council of Canada. He then set out to launch Seed, a science magazine.

Seed Media Group was founded by Adam Bly in 2005. Today, Seed is focused on the challenge of developing next-generation cyberinfrastructure for science.

In 2007, Adam Bly was named a Young Global Leader by the World Economic Forum. He is also the recipient of the Golden Jubilee Medal from Queen Elizabeth II. Adam Bly has spoken around the world on the new relationship between science and society in the 21st century.

Richard Boulderstone
Director of e-Strategy in British Library

Richard Boulderstone joined the British Library as Director of e-Strategy in July 2002. He leads the British Library's efforts to create a large-scale digital library system that is the primary repository for the Library's, and hence the UK's, legal deposit collection of electronic resources. He is also responsible for the Science, Technology and Medicine team at the BL that focuses on providing information-based products and services for academic and commercially based scientists.

Richard Boulderstone contributes to the interactive session of the conference on June 11.

Behrooz Chitsaz
Director, Intellectual Property Strategy – Microsoft Research

Behrooz Chitsaz has held several positions at Microsoft since 1991. In his current role, Mr. Chitsaz is responsible for developing and executing on strategies for bringing various Microsoft Research technologies to market.

He earned the Bachelor of Science degree in Statistics from University College London and a second Bachelor of Science degree in Computer Science from Simon Fraser University, Canada.

Hee-Yoon Choi
Director General of the Knowledge Information Center in Korea Institute of Science and Technology Information (KISTI)

Before Dr. Hee-Yoon Choi coming to KISTI, she worked for POSCO Research Institute (POSRI) as Director of Knowledge Asset Center. She has been involved in various activities as the editor-in-chief of quarterly academic journal “Information Management Research”, as vice president of the Korea Knowledge Innovation Association, Academic Society of Information Management, and public relations chief of WLIC Seoul, etc. She is also a member of the ICSTI Executive Board as Vice President.

Dr. Choi’s particular interests are in knowledge ecology, scholarly communications and social network. She holds a Master’s and Ph.D in LIS from Yonsei University in Korea, and a post-master degree from the Dominican University in the United States.

Lee-Ann Coleman PhD
Head of Science, Technology and Medicine, The British Library

Lee-Ann Coleman joined the British Library in 2007 as Head of Scientific, Technical and Medical Information. For ten years prior to that, she worked in science policy and administration, and gained experience in the funding, university and medical research charity sectors.

She has a PhD from the University of Western Australia where she studied the development of the visual system, and completed postdoctoral research in the United States and at Oxford before moving into scientific administration. A move to the Association of Medical Research Charities led to greater involvement in the issues affecting charitable funding organizations and she worked to devise policies on peer review, indirect costs, interaction with industry and the dissemination of scientific outputs.

The British Library's Science, Technology and Medicine team is working closely with the scientific community to provide products and services to meet their needs.

Bernard Dumouchel

Bernard Dumouchel who acts as the moderator of the interactive session of the conference on June 11, has been the Special Advisor to ICSTI since 2007. As chair of the Web/Communications committee, he supports the communications thrusts of ICSTI. A career librarian and information specialist, he is the former Director General of the Canada Institute for Scientific and Technical Information (CISTI), part of the National Research Council Canada. Mr. Dumouchel came to CISTI in 1987, as Director, Resource Development. He became Director General of CISTI in 1998 and retired in January 2007.

Throughout his career, Mr. Dumouchel has held several positions in the broader library community, including Vice-chair of the Council of Federal Libraries of the Canadian Government, Treasurer and Vice-president of the International Council for Scientific and Technical Information, and President of the OCLC Canada Advisory Council.

Jeremy Frey
Professor of Physical Chemistry at the University of Southampton, UK

Jeremy G. Frey is committed to making full use of digital technology to facilitate a collaborative and interdisciplinary approach to chemical research. An example of his recent research is the development of an ultra short pulse soft x-ray source for nanoscale biological and material imaging.

Prof. Frey has been involved with the UK e-Science programme from its inception, looking at the ways in which e-Science and Grid infrastructure can be developed to provide support for chemical research. His group has been developing Electronic Laboratory Notebooks (the Smart Tea Project), generating and applying a “Semantic Chemical Grid” and applying Web 2.0 & Social Network ideas with Chemical Blogs and related technologies.

Eleanor Frierson
Deputy Director, National Agricultural Library (Agricultural Research Service, United States Department of Agriculture

Eleanor Frierson has more than thirty years'diversified experience in information service development and management at national and international levels. She serves as Chair, Science.gov Alliance; U.S. representative to the WorldWideScience.org Alliance; and chair of the standing committee of the Government Information and Official Publications Section, International Federation of Library Associations and Institutions. She was Deputy Chair of CENDI from 2004–2006 and served on the OCLC Members Council from 2002–2008. Before coming to USDA in 2000 she served as Chief, Bureau of Library and Information Services of the International Labour Office, in Geneva, Switzerland. – At the conference, she contributes to the interactive session of the conference on June 11.

Ms. Frierson received her MLS from Syracuse University.

Jolande E. Goldberg
Policy & Standards Division
Acquisitions & Bibliographic Directorate
The Library of Congress

Dr. Jolande E. Goldberg is currently a Senior cataloging policy specialist (Law classification) in the Policy & Standards division at the Acquisitions & Bibliographic Directorate of the Library of Congress, Washington, D.C.

In developing and revising the Library of Congress Law Classification, she has pioneered classification structures for overarching concepts of law, providing the basis for an overall comparative, uniform, and parallel classification architecture as it relates to all regions of the world, as well as to universal systems such as international and religious law.

The Web version, ClassificationWeb, expanded to a linking tool that pulls the major LC authority files together, is the basis for Goldberg's further exploration of the system as a "Gateway" to Web content.

The mission of the Library of Congress – the largest library in the world – is to make its resources available and useful to the United States Congress and the American people and to sustain and preserve a universal collection of knowledge and creativity for future generations.

Raine Hermans
Director of Impact Analysis at Tekes, the Finnish Funding Agency for Technology

Raine Hermans is responsible for impact analysis, innovation research funding and knowledge management. His earlier positions include that of Technology Director and Director of regional operations at Tekes, and partner and CEO of Regiofacta Ltd. Hermas is currently also Adjunct Professor at the Helsinki School of Economics, Finland's leading business school.

Hermans is specialized in leadership of networks and multidisciplinary teams, innovation management and valuation of intellectual capital.

Tekes, the Finnish Funding Agency for Technology and Innovation is the most important publicly funded expert organisation for financing research, development and innovation in Finland. Every year, Tekes finances some 1,500 business research and development projects, and almost 600 public research projects at universities, research institutes and polytechnics.

Tony Hey
Corporate Vice President of the External Research Division of Microsoft Research

Tony Hey is responsible for the worldwide external research and technical computing strategy across Microsoft Corporation. Before joining Microsoft, Hey served as director of the U.K.'s e-Science Initiative, managing the government's efforts to provide scientists and researchers with access to key computing technologies. He has also worked as Head of the School of Electronics and Computer Science; and, Dean of Engineering and Applied Science at the University of Southampton, where he helped build the department into one of the most respected computer science research institutions in England. Hey is a fellow of the U.K.'s Royal Academy of Engineering. He also has served on several national committees in the U.K.

Brian A. Hitson
Associate Director for the U.S. Department of Energy's Office of Scientific and Technical Information (OSTI) in Oak Ridge, Tennessee

In this position, Mr. Hitson is responsible for international information exchange programs, administrative and financial management, cost-reimbursable activities, limited access information programs, and the digitization and preservation of a 1.2 million scientific document repository. As part of his international responsibilities, Mr. Hitson played a key role in the development of WorldWideScience.org and in the establishment of the WorldWideScience Alliance. He is the US representative to the IEA's Energy Technology Data Exchange (ETDE) and to the IAEA's International Nuclear Information System (INIS). Mr. Hitson has chaired the ETDE Executive Committee since 2005, overseeing the introduction of federated searching technology into ETDE's database environment, along with other significant user enhancements. Mr. Hitson has a Bachelor of Arts degree in Economics and a Master's in Business Administration, both from the University of Tennessee. Email: hitsonb@osti.gov.

Jay Katzen
Director of academic and government products for the science and technology division at Elsevier

Jay Katzen is the Managing director of academic and government products for the Science and technology division at Elsevier. In this role, Jay oversees the product management, product marketing and business development strategies for the core platforms that deliver Elsevier content: Scopus, ScienceDirect, Scirus and research workflow tools.

Jay Katzen holds a B.A. in computer engineering from Case Western Reserve University and an M.B.A. from Cleveland State University. He has more than 17 years of experience in marketing, product management, and software and business development for information publishers, and has a deep understanding of librarian and researcher requirements.

Marjut Kokko
President of the Society for Finnish Information Specialists (2009–)

The Society enhances the professional skills of its members and promotes general awareness of the knowledge management and information sectors by acting in cooperation with several other organisations within the field.

Ms. Kokko has a degree in Law from the University of Helsinki (LL.M. 1996) and postgraduate education of Information Management from the Helsinki University of Technology (1997–1998). She is currently Chief of Information Services at the Finnish Supreme Court. She also has ten years of experience as Legal Knowledge Management Specialist at Roschier Attorneys, a big Finnish law firm (1998–2007).

Ms. Kokko is active in international organisations, especially within the Nordic region and has given numerous presentations particularly on subjects such as business and legal information and the sources of EU law.

Mr. Juha Korkeila, M.Sc. (Eng.)

Juha Korkeila works at Tekes, the Finnish Funding Agency for Technology and Innovation, as Development Manager for Tekes programmes since 2006. His current tasks are related to Tekes' core processes and customer-oriented services. An example of the services is Innovation landscapes produced by VTT's Knowledge Solutions.
Mr. Korkeila's previous positions include e.g. that of a Senior Technical Advisor, Production and Manufacturing, at Tekes from 2001 to 2006, and Project Manager at the National Board of Patents and Registration of Finland

Tekes, the Finnish Funding Agency for Technology and Innovation is the most important publicly funded expert organisation for financing research, development and innovation in Finland. Every year, Tekes finances some 1 500 business research and development projects, and almost 600 public research projects at universities, research institutes and polytechnics.

Mikko Kosonen
Sitra's President

Mikko Kosonen, Ph.D. (Econ) is Sitra's President for the period 2008–2013. Before this, he worked for Sitra as an Executive Vice President responsible for innovation operations (2007–2008). He has been an influential figure in shaping Sitra's current strategy and in developing and managing Sitra's innovation activities.

Previously, Dr. Kosonen worked for Nokia (1984–2008), most recently as SVP Strategy and Business Infrastructure (1996–2005) and adviser to top management. At the same time, he has also been a member of the boards of a number of companies and associations, incl. the Center for Knowledge and Innovation Research (CKIR).

Mikko Kosonen has published several books and articles on strategic management.

Sitra, the Finnish Innovation Fund is an independent public fund, founded in 1967, which under the supervision of the Finnish Parliament promotes the welfare of Finnish society, with responsibilities stipulated in law. It is Sitra's duty to promote stable and balanced development in Finland, the qualitative and quantitative growth of its economy and its international competitiveness and co-operation.

Abe Lederman
President and CEO of DeepWeb Technologies

Abe Lederman has 25 years of experience in computer software engineering. He began his career with Hewlett Packard and was then recruited to become a founding member of Verity, a startup pioneer in the field of search engine technology. After leaving Verity in the 1990's, Abe Lederman founded Innovative Web Applications (IWA), a software consulting firm primarily serving Los Alamos National Laboratory (LANL). Realizing the enormous potential for federated search technology to accelerate the diffusion of knowledge, he founded Deep Web Technologies in 2002. Abe Lederman holds Master of Science degree in Computer Science from the Massachusetts Institute of Technology.

Petri Lehto
Head of Division at the Innovation Department of the Ministry of Employment and the Economy of Finland

Petri Lehto responsibilities include demand and user driven innovation policy. The objective is to enlarge the scope of the innovation policy of Finland by bringing in new innovation actors and new instruments for the policy.

Petri Lehto has extensive background also on industrial and competition policy. He holds a Ph.D. in economics.

The Innovation Department at the Ministry of Employment and the Economy is responsible for the development, implementation and performance of innovation policy in Finland. The Department's remit is to promote the growth, internationalisation and modernisation of enterprises and sectors of the economy, and to broaden the scope of innovation activities in both the private and the public sector.

Professor Erkki KM Leppävuori
President & CEO, VTT Technical Research Centre of Finland

Prof. Erkki KM Leppävuori (born in 1951) was appointed President & CEO of VTT Technical Research Centre of Finland in 1999.

He was previously Professor, Research Director and Chief Executive of the Research Institute VTT Building Technology at VTT from 1994 to 1999. Prior to his positions at VTT he has worked as Director of Marketing and Technology of the Building Products and Engineering Division of the Rautaruukki Group (a Finnish Steel Company); Senior Vice President of the Group's Building Products Division from 1991 to 1994; and Vice President, Marketing of Steel Construction, Rautaruukki Oy from 1989 to 1991.

Prof. Leppävuori is a board member of several governmental and business organizations including the Research and Innovation Council of Finland chaired by the Prime Minister.

He is President of the European Association of Research and Technology Organizations EARTO. He is also a member of the Academy of the Technical Sciences.

He holds a Master's Degree (1974) and a Licentiate Degree (1977) from the Helsinki University of Technology as well as the nomination as Doctor of Technology h.c. (2008).

Jussi Oijala
Senior Vice President, Global Technology, KONE Corporation

Is in charge of KONE Corporation's Technology and R&D operations and located in Espoo, Finland. He is a process owner for the Solution Creation Process in KONE responsible for competitiveness of the offering worldwide and ensuring that the research, development and change management process is supporting the business needs of KONE. All global (6) Technology centers in KONE are reporting to him (about 600 persons). He is responsible for the technology strategy and contributes to the overall strategy and vision work of KONE.

Jussi Oijala has a Master's degree in Aeronautical Engineering from Helsinki University of Technology (Espoo, Finland, 1983) and a Master´s degree in Business Administration from Santa Clara University (Santa Clara, California USA, 1986). He has joined KONE in 1990 and held various positions in Quality Management, Production and R&D prior to his current position. He has worked a big part of his KONE career in international positions outside of Finland (Italy, USA). Before joining KONE he has worked for Finnair and Stanford University.

Laura Ruotsalainen
Information analyst at **VTT's Knowledge Solutions**

Laura Ruotsalainen conducts patent searches and analyses for VTT's management and research, e.g. for determining the state-of-art, scanning new business opportunities and determining the possibility to file a patent for an invention. Ms. Ruotsalainen has also done research related to the aquisition and utilization of patent data. She is a member of VTT's IPR Software team.

Laura Ruotsalainen has a Master's degree on Computer Science from the University of Helsinki. She has also taken an Academic postgraduate training programme on Patents in the Helsinki University of Technology. Publications related to the subject:

Loikkanen, Torsti, Konttinen, Jari, Hyvönen, Jukka, Ruotsalainen, Laura, Tuominen, Kirsi, Waris, Mika, Hyttinen, Veli-Pekka, Ilmarinen, Olli. 2009. Acquisition, Utilisation and the Impact of Patent and Market Information on Innovation Activities. Espoo: VTT. 68 p. (VTT Tiedotteita - Research Notes; 2484) ISBN 978-951-38-7296-0 (soft back ed.)

Ruotsalainen, Laura. 2008. Data Mining Tools for Technology and Competitive Intelligence. Espoo: VTT. 63 p. (VTT Tiedotteita - Research Notes; 2451) ISBN 978-951-38-7240-3

Roberta I. Shaffer, MLn, JD

Roberta I. Shaffer was appointed as the 22nd Law Librarian of Congress in August, 2009. She had been serving as the Executive Director of the Federal Library and Information Center Committee / Federal Library Network at the Library of Congress since 2005. Roberta Shaffer is a frequent speaker at various law and library conferences. She serves as the Library of Congress representative to the International Council on Scientific and Technical Information (ICSTI) and is the chair of its Information Policy Committee.

Roberta Shaffer has her BA in political science and demography from Vassar College. Her law degree is from Tulane and she has an MLn from Emory University. Roberta has held previous positions with several universities in the US. She is admitted to the DC, Texas and US Supreme Court Bars. Roberta Shaffer has a certificate in Negotiation from the Harvard Law School and uses this training as a pro bono mediator and facilitator on a vast range of issues of local to global concern.

Roberta Shaffer contributes to the interactive session of the conference on June 11.

In 1832, The Law Library of Congress was officially established to provide the United States Congress and Supreme Court with access to current and accurate legal research materials. The Law Library has grown to become the world's largest law library, with a collection of over 2.65 million volumes covering virtually every jurisdiction in the world.

R. Sivadas – CEO
Managing Director of Scope e-Knowledge Center, a Quatrro group company

Quatrro group company, that he was co-founding in 1987. His responsibilities include developing the Content enhancement & knowledge services and Patent search analytics / business research lines of businesses worldwide and overseeing the Finance, corporate and legal functions in Scope. Scope has over a 1 000 employees and is active in the publishing industry worldwide providing content related services to STM publishers worldwide.

Sivadas is a Postgraduate in Management from the Indian Institute of Management, Ahmedabad, rated as India's No. 1 business school. He has over 27 years of post-qualification experience having worked with large Indian companies before his foray as an entrepreneur into the information services space.

Mika Waris
Master of Science (Econ.) is Director of Marketing and Business Services at the National Board of Patents and Registration of Finland (NBPR)

Mika Waris, having worked at Nokia Corporation for 12 years, lately as Head of Business Systems Planning, he joined the NBPR in 1994. The main focus in his present mission is the competitiveness of Finnish enterprises, especially SMEs, and the social and economic impact of IPRs and IP information in innovation process. Mr. Waris believes that intellectual property and knowledge are the key elements of the upcoming open innovation environment.

Mr. Waris has also worked as a private consultant and with large Finnish companies as Head of Business Systems.

As an organisation specialised in industrial property rights and business and corporation activities, the National Board of Patents and Registration of Finland (NBPR) advances enterprise, innovativeness, and corporate activities both in Finland and internationally.

Walter Warnick, Ph.D.
Director of the U.S. Department of Energy Office of Scientific and Technical Information (OSTI)

Walter Warnick embraces the opportunities offered by the web to accelerate the spread of knowledge about science and technology. He has championed efforts to capitalize on technological advances to develop and provide state-of-the art products and services for sharing knowledge.

Dr. Warnick was elected Fellow of the American Association for the Advancement of Science (AAAS) in 2005 “for leadership in the federal scientific information community and for contributions to the conceptualization, development and implementation of innovative programs that significantly advance access to government information.”

The DOE Office of Scientific and Technical Information (OSTI) provides leadership and coordination for the Scientific and Technical Information Program at the U.S. Department of Energy. OSTI assures access by DOE, the scientific research community, academia, U.S. industry and the public to DOE research results. DOE OSTI is also the operating agent of WorldWideScience.org, and Dr. Warnick is a member of the WorldWideScience Alliance Executive Board.

Dr. Wendy A Warr, M.A., D.Phil. (Oxon.), C.Chem., F.R.S.C., FCLIP

Dr. Wendy A Warr has Master's and Doctor's degrees in chemistry from the University of Oxford, England. She is a Chartered Chemist, a Fellow of the Royal Society of Chemistry and a Fellow of the Chartered Institute of Library and Information Professionals. She has over 40 years' experience in information systems and research computing including nearly 20 years in the pharmaceutical industry.

She is active in the Chemical Information Division of the American Chemical Society (ACS) and serves on several international scientific committees. She has been an Editor of the ACS Journal of Chemical Information and Modeling (formerly Journal of Chemical Information and Computer Sciences) since 1989. She represents the International Union of Pure and Applied Chemistry (IUPAC) for ICSTI.

Wendy Warr & Associates offer consultancy services in the fields of cheminformatics, computational chemistry and electronic publishing. Clients include pharmaceutical companies, pharmaceutical industry partners, software companies, publishers, and scientific database producers.

WU Yishan
Chief Engineer of Institute of Scientific and Technical Information of China (ISTIC)

Wu Yishan is Chief Engineer of the Institute of Scientific and Technical Information of China (ISTIC). He is also Vice Chairman of the Professional Committee on Scientometrics, under the China Research Society on Science of Science and S & T Policy; Vice Secretary General, China Association of Soft Science; Chief Editor, Journal of the China Society on Scientific and Technical Information.

His area of research involves bibliometrics and scientometrics and he has published more than 40 papers in this field, including 8 in international journals or proceedings. Based on his two-term experience as a scientific diplomat in the Chinese Embassy in USA, he has been concerned about international S & T cooperation since 1987 and has published more than 10 papers in this area. He is interested in S & T policy studies and information science, and published in these fields.

Abstracts

in order of presentation

Conference day 1: June 10, 2010

What is information worth – the value of information in the innovation process
– Erkki KM Leppävuori, VTT Technical Research Centre of Finland

Information is the lifeblood of innovation. Throughout the world companies, universities, research organizations as well as governments are working to discover new frontiers and create innovations for the world's economic and social progress. The growth of the body of information and the ease of access to information are unprecedented in human history. Yet paradoxically, effective management of information is more challenging than ever before. The ability to measure economic and social impacts of information utilization has not evolved much either. Dr. Leppävuori discusses information utilization and its impacts in the innovation process, especially from the point of view of VTT Technical Research Centre of Finland and its clients.

In search for continuous renewal
– Mikko Kosonen, SITRA the Finnish Innovation Fund

"Five to ten years ago you would set your vision and strategy and then start following it. That does not work anymore. Now you have to be alert every day, week and month to renew your strategy". (Olli-Pekka Kallasvuo, Financial Times, 4 December 2006) Companies have traditionally responded to change through strategic planning and the foresight offered by scenarios, or through corporate ventures and an entrepreneurial drive. Today's change is both fast and complex – where strategic planning no longer fits because change is fast and unpredictable. In his keynote speech, Dr. Kosonen discusses the concept of strategic agility and the role of information utilization in enabling better strategic sensitivity, resource fluidity and leadership unity.

Case KONE
– Jussi Oijala, KONE Corporation

KONE provides its customers with industry-leading elevators, escalators and innovative solutions for new buildings, modernization and maintenance, and is one of the global leaders in its industry. KONE has always been known as an innovative and growth oriented company. Over the years, KONE has proven its ability to adapt to a changing

world as well as to create new opportunities for the company to grow. Mr. Oijala describes the innovation process of KONE and the role of effective utilization of existing information and emphasising of customer and end-user understanding. He also discusses the present and future challenges and opportunities brought along by opening up of the innovation process towards partners and suppliers as well as towards customers and end-users.

New information literacy – perspective of small and medium-sized enterprises
– Mika Waris, National Board of Patents and Registration, Finland

Moving towards a knowledge based economy constitutes a real challenge to companies. The existing practices of utilizing valuable sources of technical, juridical and market information are inefficient, causing a lot of redundancy to R&D and problems in penetrating the market and staying there, especially for SMEs. Mika Waris discusses dissemination of information and national competitiveness. He talks about open innovation as well as instruments relating to the control and management of intellectual assets. He calls for a new approach to business and strategy planning for businesses to learn to identify, analyse and value their know-how and competencies, and the corresponding know-how of potential partners and competitors.

Innovation landscapes for Tekes programmes
– Laura Ruotsalainen, VTT Technical Research Centre of Finland and Raine Hermans, Tekes the Finnish Funding Agency for Technology and Innovation

Use of relevant and timely information brings competitive advantage. Patent and market data offers valuable information about business environment, e.g. trends and actors. The amount of data from various and nonuniform sources is exhausting and the format often difficult to adopt. By the use of professional skills and sophisticated tools this information can be transformed into a form easily understood and utilized. By combining the resources and expertise of three major actors of Finnish innovation field, Tekes, VTT Technical Research Centre of Finland and University of Jyväskylä, this is provided through the Innovaatiomaisematportal (Innovation landscapes), open for anyone.

Towards smart service: KISTI intelligent system using semantic web technology
– Hee-Yoon Choi, Korea Institute of Science and Technology Information

This presentation introduces the ever-leading edge of S&T Information service in KISTI (Korea Institute for Scientific & Technical Information), especially about smart service using semantic web technology, Ontoframe. Ontoframe is KISTI's semantic web-driven information service platform, being developed for better & intelligent access to S&T information at the first stage. There are several public cases for using it, such as expert recommendation system, intelligent legislation support system and standard information

service. It will be progressed to INScite(Intelligence in Science & Technology), a real-time service platform aiming to capture & disseminate technological information needed for strategic planning and decision making during R&D activities, and applied to NDSL(National Digital Science Links) at the end of this year. In this presentation, you will have an opportunity to hear about our efforts and experiences in developing those services.

Smart labs for smart people: New ways to collect, curate and share information
– Jeremy G. Frey, University of Southampton

Fundamental to collaboration in a scientific enquiry is the ability to share both the data and the methods used to analyse the data. The ideas of "Publication @ Source" for scientific data and workflows builds on the developments of the "Semantic Web" and the ideas of "Social Networking" to create new environments for scientific research. I will discuss the ideas behind the novel types of electronic notebooks used to create and capture high scientific investigations with high quality metadata and provenance and the ways in which communities can then share and trust these results to enhance further discovery and innovation.

Virtual work-flow tools to enhance the research process
– Lee-Ann Coleman, British Library

Understanding how scientific researchers work, enables information providers to provide intelligent, relevant products and services. Embedding these solutions in a researcher's workflow is central to a number of projects being undertaken by the Science, Technology and Medicine team at the British Library. Lee-Ann Coleman will provide an overview of projects that her team are delivering to achieve this aim. She will describe a virtual research environment for scientists, being developed in collaboration with Microsoft External Research and how this tool can help researchers to discover, organise, manage and share information throughout the lifecycle of a research project.

Innovations in multimedia search and retrieval
– Behrooz Chitsaz, Microsoft Corporation

Science is increasingly communicated through multimedia, yet multimedia sources have not historically lent themselves to robust search and retrieval with traditional search engine technology. In the case of audio and video, search results can be radically improved with audio indexing technology as opposed to the more limited metadata normally provided with such files. Scientific multimedia presents interesting challenges to audio indexing because of the highly-technical and specialized vocabulary. Microsoft Research will present its audio indexing technology and recent successes in extending this technology to scientific content through collaboration with ICSTI member organizations.

Sovereign within a Sovereign. Library of Congress on-line: Classification for a gateway to web resources?
– Jolande E. Goldberg, Library of Congress

The development of the new classification at the Library of Congress for *Indigenous Peoples in the Americas* initiated a new investigation of the enormous potential of the library's online classification, ClassificationWeb (ClassWeb), in particular the linking functionality of the system. In her presentation, Dr. Goldberg, a pioneer in classification structures, covers the organization of the critical mass of information available, and precoordination of the data for content formulation, terminology and linking. She shows how with a well-designed user interface the system becomes a new bibliographic implement helping in direct access to digital subject content and delivering accurate search results.

Accelerating scientific discovery through openness and collaboration
– Jay Katzen, Elsevier Science and Technology Division

While technology is driving information overload for many researchers, it is simultaneously evolving to empower the scientific community. In the course of thousands of interviews with researchers and industry influencers, we saw an opportunity for Elsevier to fundamentally alter the relationship between scientific content and the way it is discovered, used, shared and re-used for scientific breakthroughs. This presentation explores an unprecedented approach that empowers the scientific community to actively collaborate on mechanisms for scientific research. We will share our plans for a platform that leverages the trusted content from Elsevier as well as third-party sources to accelerate knowledge discovery.

Conference day 2: June 11, 2010

Making open science real
– Adam Bly, Seed Media Groups

Science is becoming more open and digital — but without the necessary standards, organization, security, application interoperability, business model, or cyber-infrastructure to scale, be sustainable, and meet the needs of all stakeholders across the research community. How can information technology help us meet this challenge and ensure that open science becomes the way of the future?

Towards demand- and user-oriented innovation policy
– Petri Lehto, Ministry of Employment and Economy, Innovation Department

The government of Finland published its innovation strategy two years ago. Demand and user driven innovation was recognised as a key ingredient in increasing effectiveness of Finnish innovation policy. These new aspects of the policy bear a lot of promise

yet their detailed content is under continuous elaboration. What is common to both of these is that they both seek to enlarge innovation policy to areas currently untouched by policy, especially to strengthen users' ability to innovate and increase innovation where global societal challenges arise. Dr. Lehto discusses the contents of demand and user driven innovation policy and directions where Finland aims to take the policies.

The Fourth Paradigm: Data-intensive scientific discovery
– Tony Hey, Microsoft Research

Dr. Hey describes the emergence of a new, 'fourth paradigm' for scientific research involving the acquisition, management and analysis of vast quantities of scientific data. This 'data deluge' is already affecting many fields of science most notably fields like biology, astronomy, particle physics, environmental science and oceanography. The term eScience or eResearch is used to describe the development of the tools and technologies to support this more data-intensive, collaborative and often multidisciplinary research. This revolution will not be confined to the physical sciences but will also transform large parts of the humanities and social sciences as more and more of their primary research data is now being born digital. The new paradigm of data-intensive scientific discovery will have profound implications for how researchers 'publish' their results and for scholarly communication in general. What will need to be preserved, how will this be accomplished? Research libraries have the opportunity to play a leading role in this ongoing revolution in digital scholarship.

WorldWideScience.org: Extending global reach through multilingual translation
– Walter Warnick, U.S. Department of Energy, Office of Scientific and Technical Information

Since its launch at the 2007 ICSTI conference, where it searched national databases in 10 countries, WorldWideScience.org has grown to searching databases in over 60 countries, representing 80 percent of the world's population. Still, up until now, real-time technology constraints have limited WWS.org to English-only queries and sources. With the launch of Multilingual WorldWideScience.org, users can find non- English content in vast reservoirs of scientific knowledge, including Russian and Chinese, and have results translated into their native language – all in real-time. Opening this access to both non-English content and queries supports WWS.org's goal to accelerate scientific discovery and progress.

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Welcome from the hosts: What Is Information Worth – The Value of Information in the Innovation Process

Erkki KM Leppävuori

Business from technology

What is information worth – the value of information in the innovation process

Erkki KM Leppävuori, President and CEO
VTT Technical Research Centre of Finland

ICSTI Annual Conference, June 10, 2010

Innovation - key to success?

Defining innovation

"The creation, adaptation or adoption of anything new or improved by an organisation, with the potential to add value to the organisation and/or its customers"

New or improved:

- Products/Services
- Business processes
- Organisational systems and structures
- Brands
- Channels to market
- Etc.

By Göran Roos

An innovation is something that in theory can turn up any time, anywhere as a true happening. But in reality innovations are the result of intense, hard and skilled work. Few inventions lead to any usable outcome and only a fraction lead to a good profitable outcome. However the chance to succeed increases substantially if innovation is managed!

Few inventions lead to a good usable outcome.

Research versus innovation

VTT TECHNICAL RESEARCH CENTRE OF FINLAND 20/05/2010 5

Challenges of business environment, opportunities for new innovations

- Globalization and global dynamics
- Competition and reaction speed
- Global knowledge and information
- Customer focus
- Increasing need for services
- Networks and alliances
- Chances on consumer behaviours

- Challenges for identifying competitive advantages, strategies and management models
- Increasing importance of innovations, business models and collaboration networks

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Understanding your business is key

"Last year one million quarter inch drills were sold. Not because people wanted quarter inch drills but because they wanted quarter inch holes."

President of Black & Decker

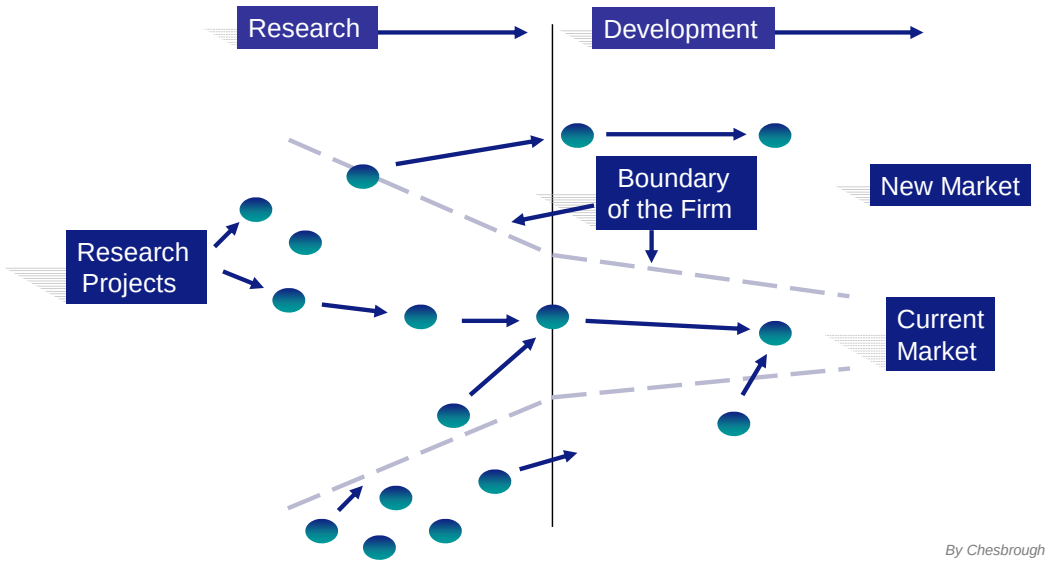
"What we sell is the ability of a 43-year-old accountant to dress in black leather, ride through small towns and have people be afraid of him."

Harley-Davidson marketing executive

BLACK&DECKER

MOTOR HARLEY-DAVIDSON CYCLES

Open innovation paradigm



By Chesbrough 2003

From closed to open innovation

Closed innovation system

- We have the smartest resources
- We research, develop and market
- First in the market wins
- Best ideas means winning
- Control IP to control competitors

Open innovation system

- Many smart people outside
- Internal R&D is not enough
- External R&D creates value
- Focus on business models
- IP sharing will be a rule

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VTT Technical Research Centre of Finland

VTT IS a globally networked multi-technological applied research organisation

VTT HAS

- extensive cross-disciplinary technological and business expertise
- unique research infrastructure
- comprehensive global partnership networks in business, industrial and research communities

VTT CREATES new technology and science-based innovations in co-operation with domestic and foreign partners

VTT TECHNICAL RESEARCH CENTRE OF FINLAND 20/05/2010 10

VTT Group in brief

- Turnover 280 M€ (budget for 2010)
- Personnel 2,900 (1.1.2010)
- 78% with higher academic degree
- 6,500 customers
- Established 1942
- VTT has been granted ISO9001:2000 certificate.

Focus areas of research

- Applied materials
- Bio- and chemical processes
- Energy
- Information and communication technologies
- Industrial systems management
- Microtechnologies and electronics
- Services and the built environment
- Business research

VTT's operations

Research and Development ■ Strategic Research ■ Business Solutions ■ IP Business ■ Group Services

VTT's companies

VTT Expert Services Ltd ■ VTT Ventures Ltd ■ VTT International Ltd

VTT at the forefront of information exploitation

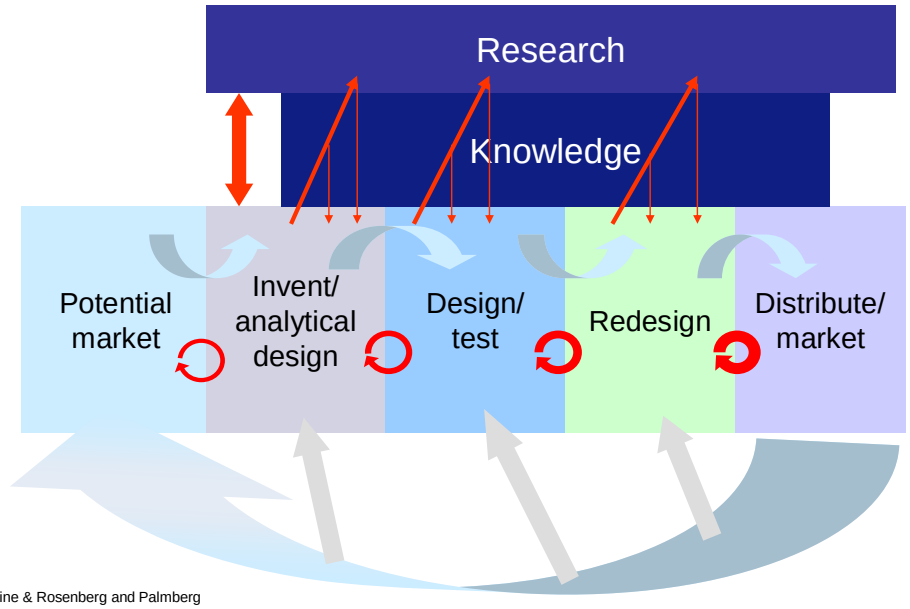
Competitiveness of VTT for our customers

The pertinence, quality and speed of research and innovation process.

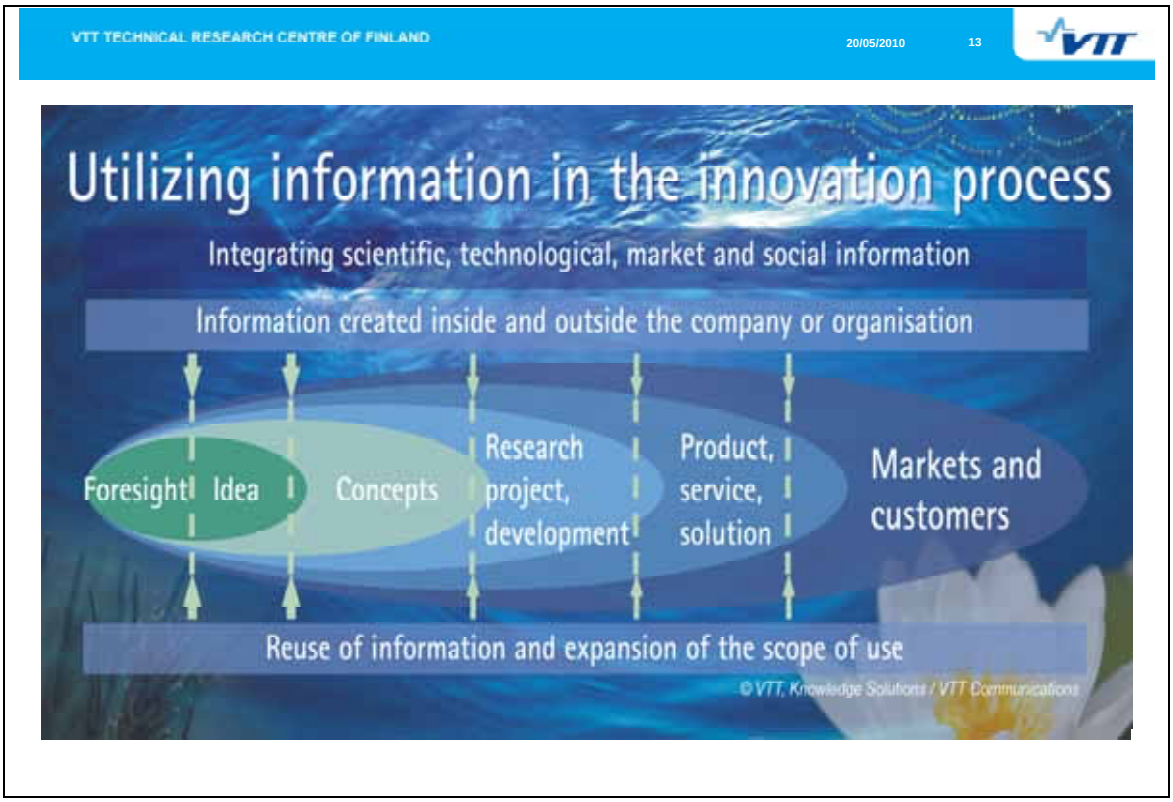
Effective exploitation of global and VTT`s internal information.

- Competencies and skills of VTT staff
- VTT´s partners and networks
- Organisational, cultural and process competencies

The chain-linked innovation model



By Kline & Rosenberg and Palmberg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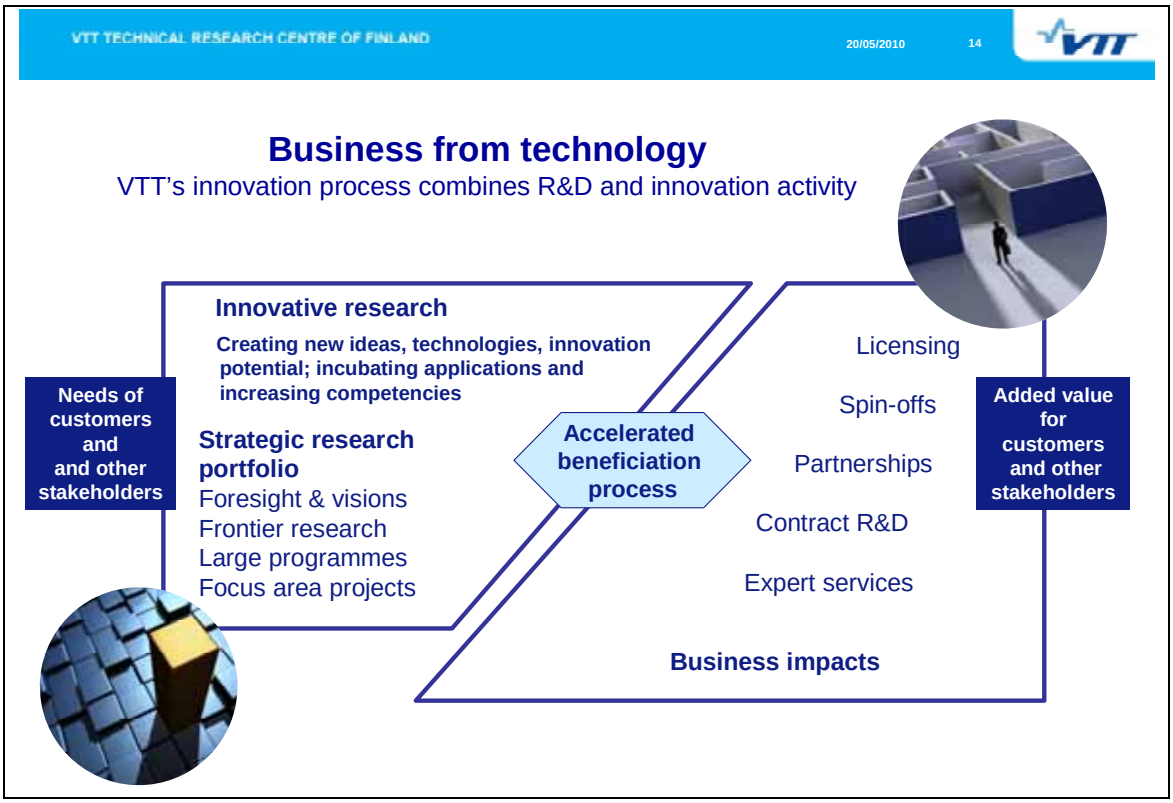
Utilizing information in the innovation process
Integrating scientific, technological, market and social information
Information created inside and outside the company or organisation
Foresight
Idea
Concepts
Research project, development
Product, service, solution
Markets and customers
Reuse of information and expansion of the scope of use
© VTT, Knowledge Solutions / VTT Communications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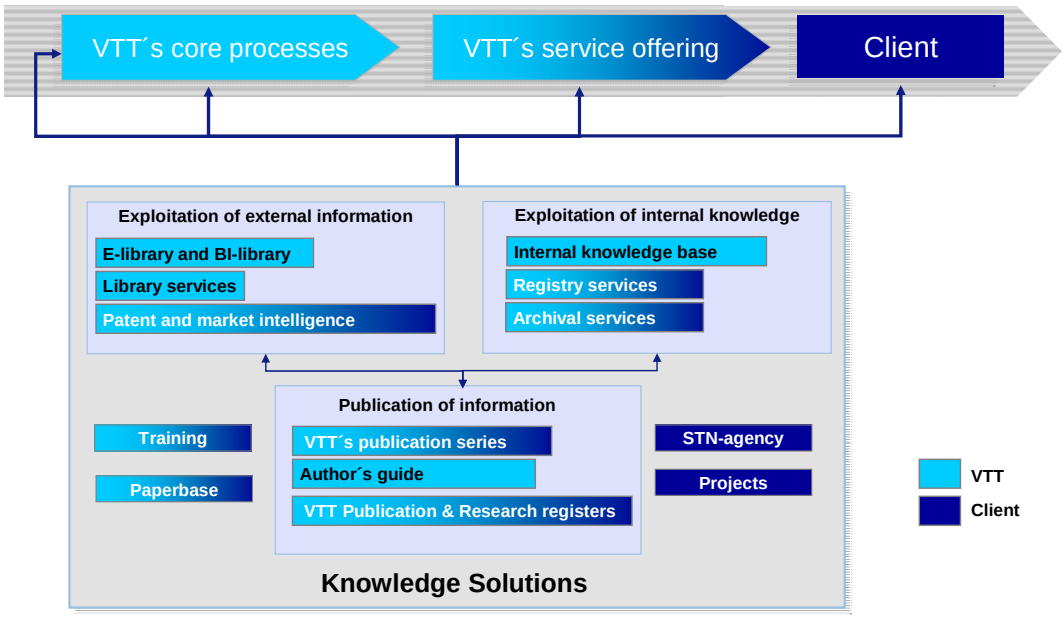
Business from technology
VTT's innovation process combines R&D and innovation activity
Innovative research
Creating new ideas, technologies, innovation potential; incubating applications and increasing competencies
Needs of customers and and other stakeholders
Strategic research portfolio
Foresight & visions
Frontier research
Large programmes
Focus area projects
Accelerated beneficiation process
Licensing
Spin-offs
Partnerships
Contract R&D
Expert services
Added value for customers and other stakeholders
Business impacts

Integrating information to VTT's processes



The value of information for VTT

- High-impact research is not possible without tackling unintended overlapping of research.
- Information exploitation - about science, technology, markets and business potential - from the very beginning of the innovation process is relevant for successful commercialization of technology.
- Effective utilization of internal and external information radically improves the profitability and productivity of knowledge work.
- Timely input of information helps VTT meet its strategic goals and organizational objectives, facilitates knowledge transfer and improves efficient decision making at all levels.

VTT TECHNICAL RESEARCH CENTRE OF FINLAND 20/05/2010 17

VTT impacts

- Economic impacts
- Technological and know-how impacts
- Scientific impacts
- Production-related impacts
- Impacts in co-operation and networking
- Impacts in human capital
- Impacts in social environment
- Impacts in physical environment, built environment and nature
- Participation in decision-making & civic discussion

Employment and wellbeing

Information Exploitation + Know-how + Expertise

Based on: Soile Kuitunen & Kirsi Hyytinen, Julkisten tutkimuslaitosten vaikutusten arviointi, VTT Tiedotteita 2230, Espoo 2004

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Research results

Technology for social media applications

New industrial uses for biomass and competitiveness for forest industry

Energy and emission scenarios to support decision-making

New methods for cancer research to accelerate drug development

Wireless data transfer to improve reliability of work machines

Efficiency for building sector from mobile technology

Renewable energy and efficiency for traffic and transport

Support for SMEs in patent and market data utilisation

Kuvat: VTT, Tekes

For more examples see: www.vtt.fi

VTT creates business from technology

Opening keynote address:
In Search for Continuous Renewal

Mikko Kosonen

SITRA

In Search for Continuous Renewal
ICSTI Conference

June 10, 2010

Mikko Kosonen

Suomen itsenäisyyden juhlarahasto Sitra

Up until now, Finland has been one of the major winners from globalisation

Progressive industrial and innovation policy (significant and consistent R&D investment)

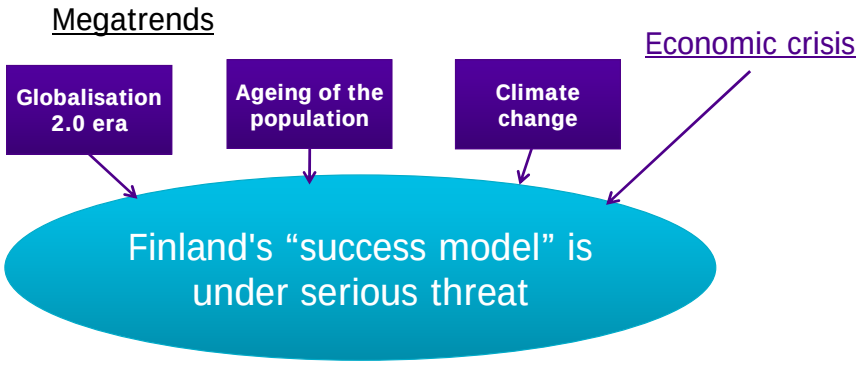
+

Progressive social and education policy (social justice)

→ Balanced development of economic growth and well-being

=FINLAND'S SUCCESS MODEL

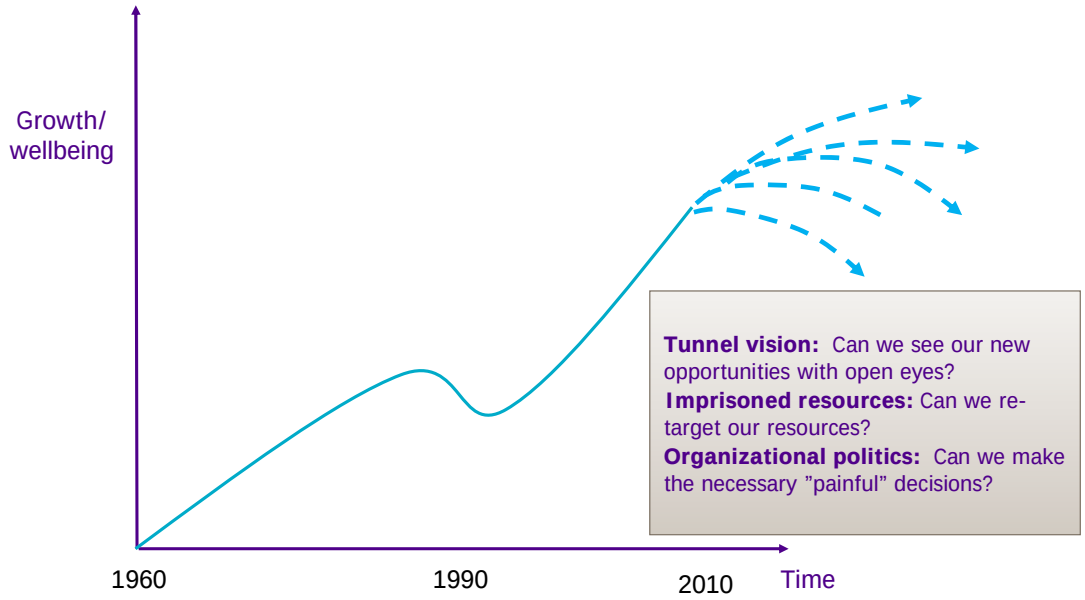
But the world is changing rapidly...



- Finland's traditional industrial structure is rapidly weakening
- Our dependency ratio is becoming rapidly distorted

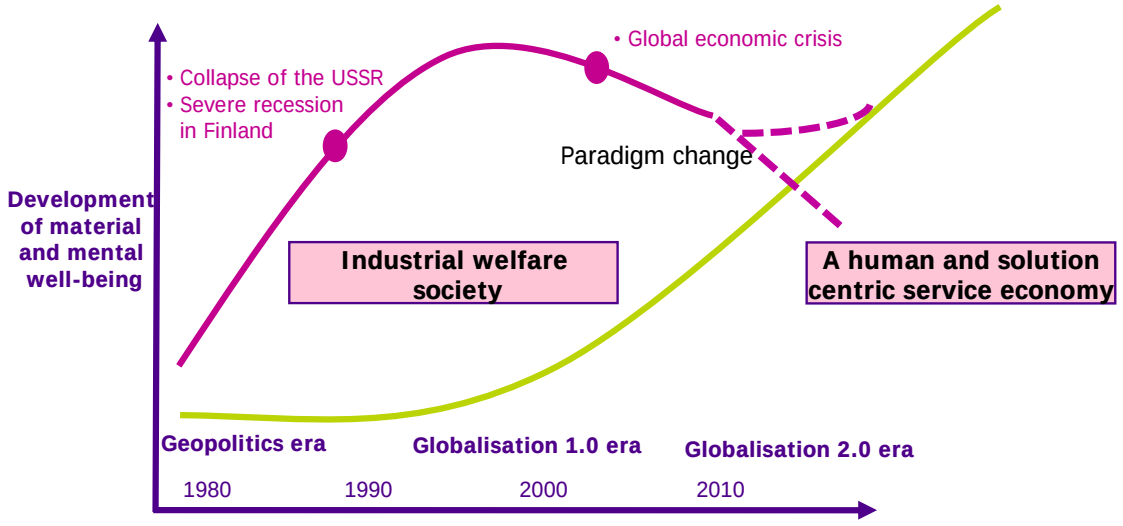
➢ **Major need and opportunity for structural changes**

Have we become prisoners of our own success?

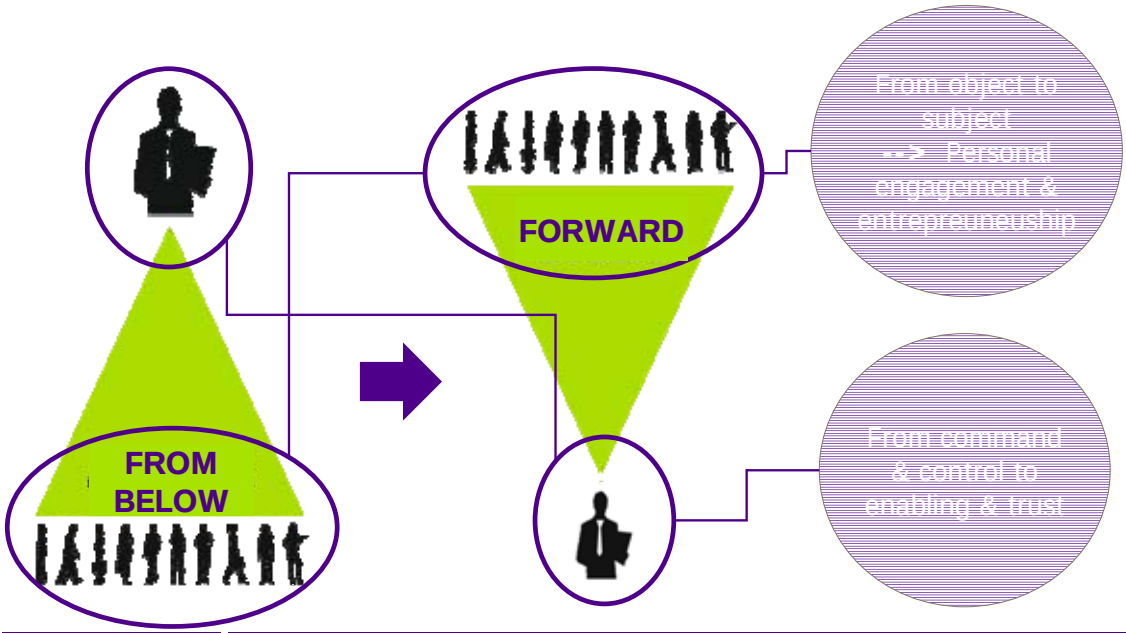


Tunnel vision: Can we see our new opportunities with open eyes?
Imprisoned resources: Can we re-target our resources?
Organizational politics: Can we make the necessary "painful" decisions?

From industrial era structures to Human and Solution centric service economy

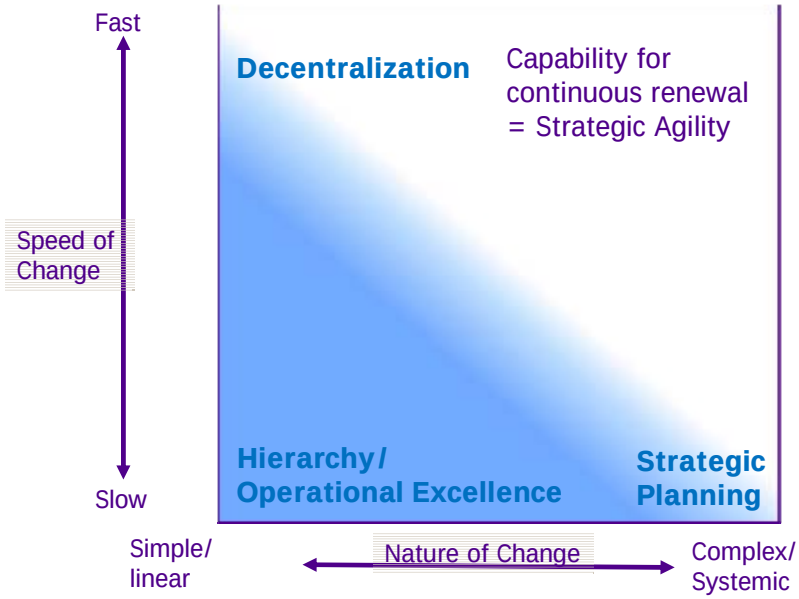


From hierarchies to empowerment

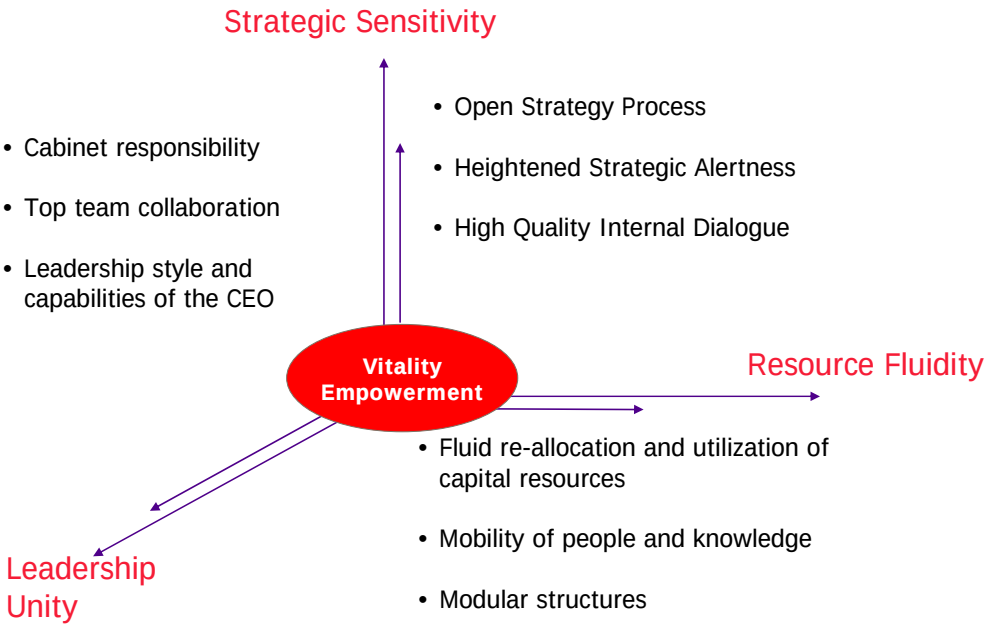


Finland has many assets and opportunities...

Need for new management principles and practices

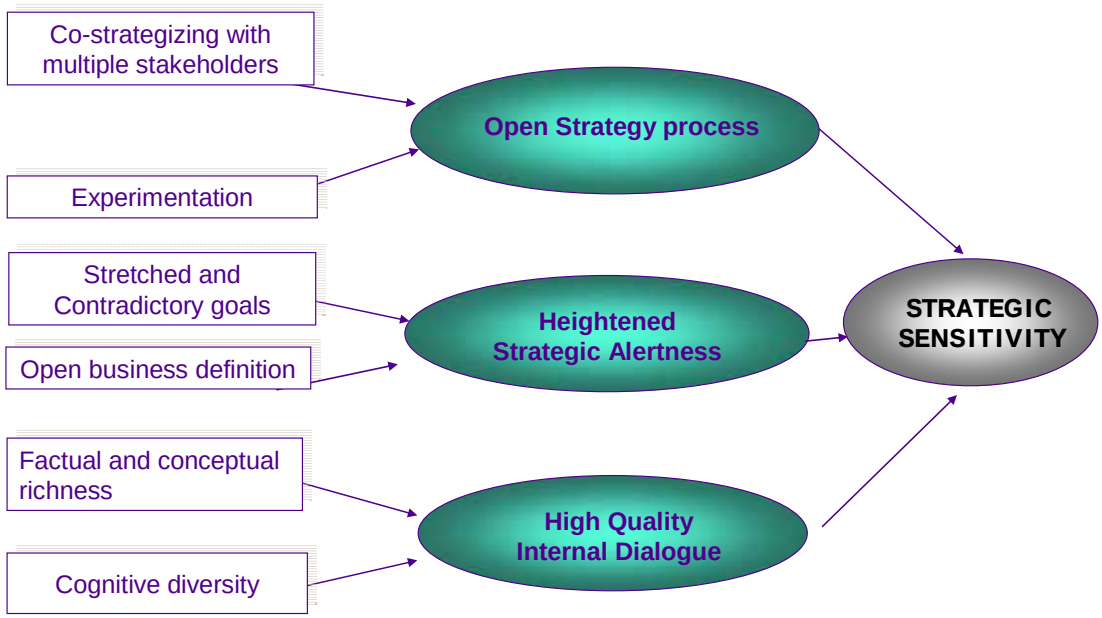


Key capabilities enabling strategic agility



SITRA

Drivers of strategic sensitivity



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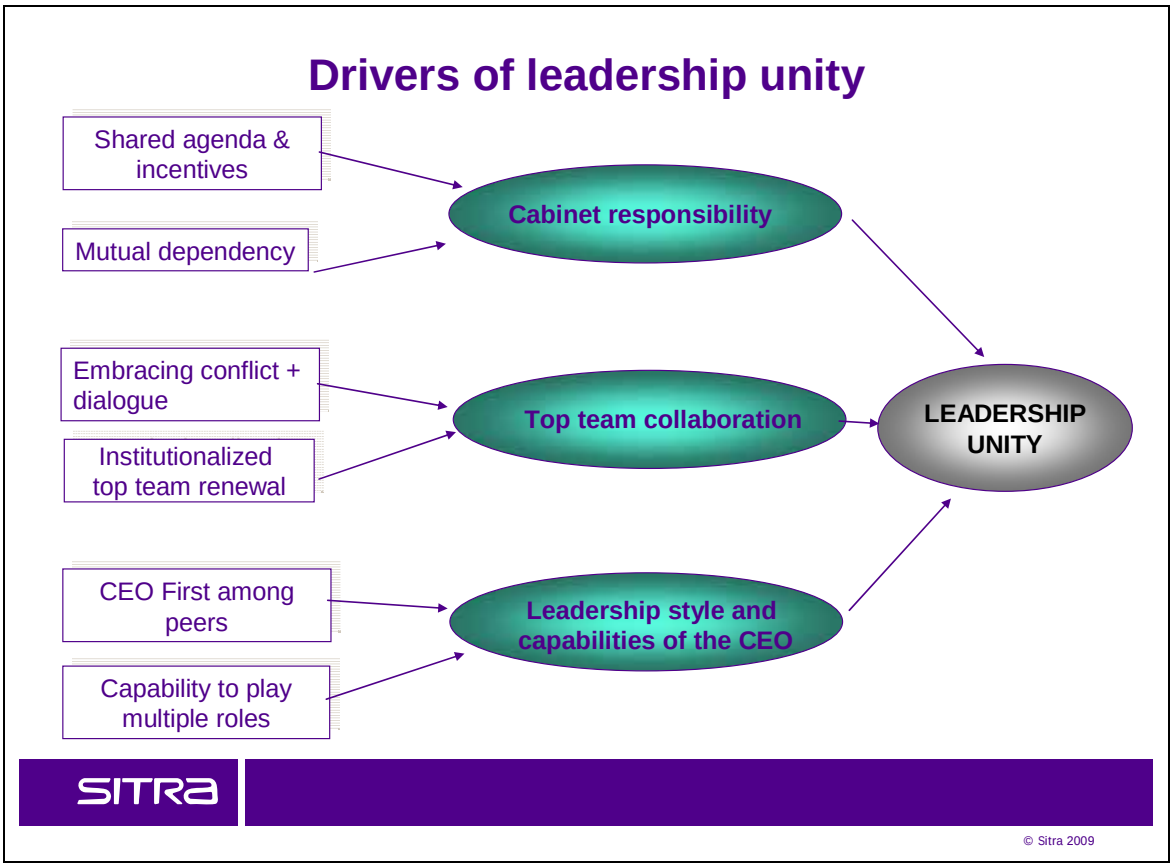
Drivers of leadership unity
Shared agenda & incentives
Mutual dependency
Cabinet responsibility
Embracing conflict + dialogue
Institutionalized top team renewal
Top team collaboration
LEADERSHIP UNITY
CEO First among peers
Capability to play multiple roles
Leadership style and capabilities of the CEO
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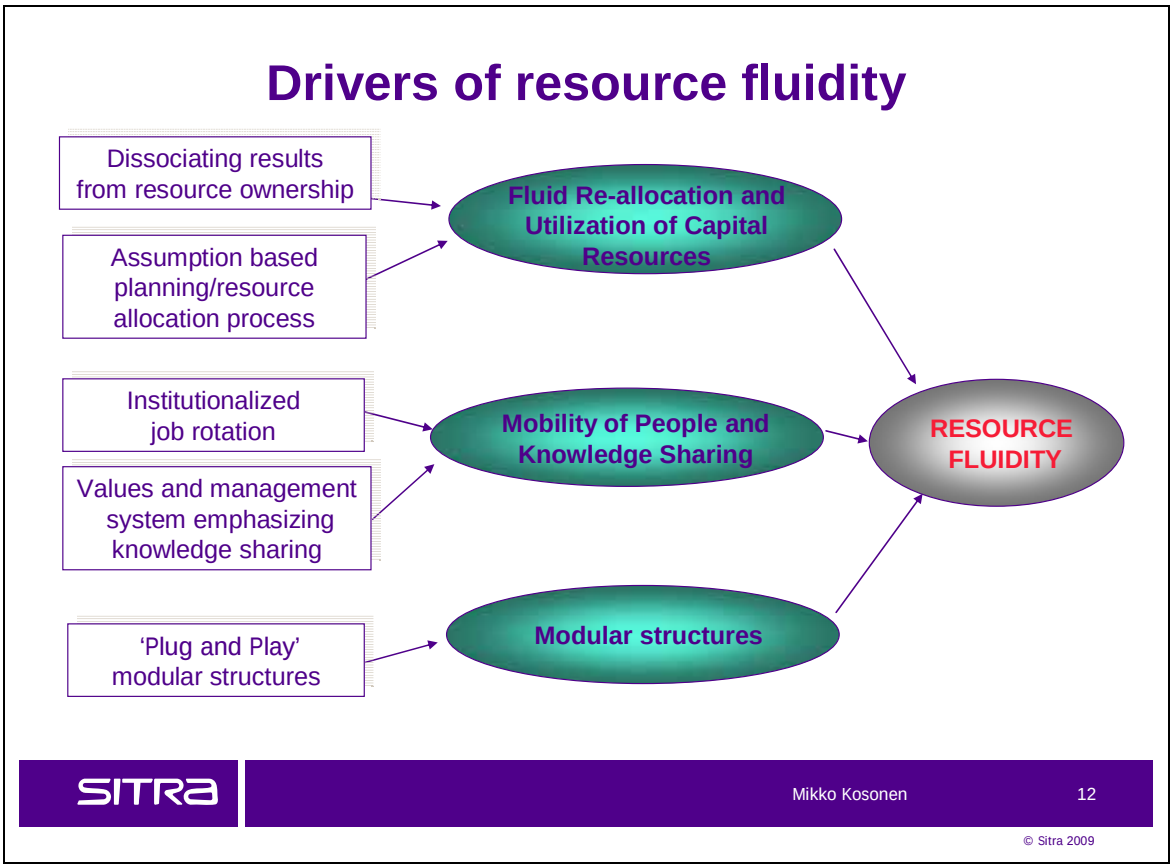
Drivers of resource fluidity
Dissociating results from resource ownership
Assumption based planning/resource allocation process
Fluid Re-allocation and Utilization of Capital Resources
Institutionalized job rotation
Values and management system emphasizing knowledge sharing
Mobility of People and Knowledge Sharing
RESOURCE FLUIDITY
'Plug and Play' modular structures
Modular structures
SITRA
Mikko Kosonen
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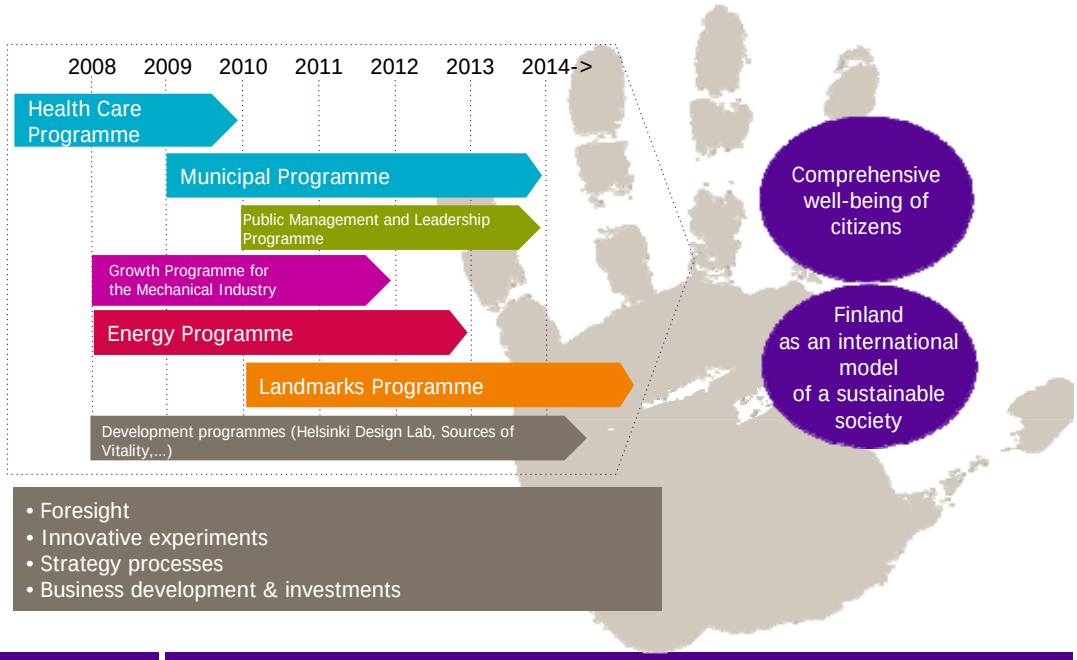
Sitra's vision and mission

Finland succeeds
as a global pioneer of systemic changes
that create well-being

Sitra facilitates
these changes
– by combining foresight
and experimentation

Summary




Thank you!
SITRA
Mikko Kosonen
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Information Next – Facilitating Open Innovation

R. Sivadas

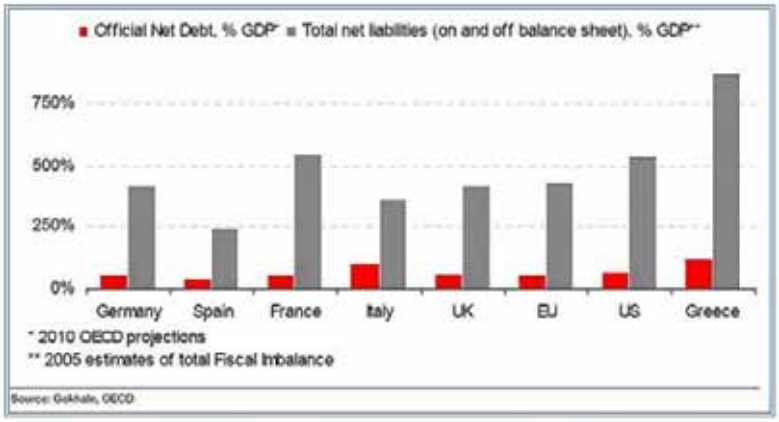
Information Next – Facilitating open Innovation

Presented by

R.Sivadas, CEO
Scope eKnowledge Center
sivadas@scopeknowledge.com

June 2010

The economic crisis is here to stay…

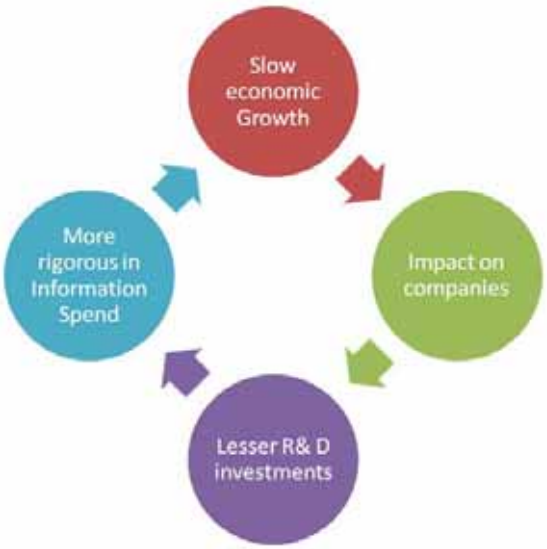


- All countries affected by the ensuing economic crisis-US leads with debt to GDP levels of over 500%.
- Europe not an exception-Spain has the lowest total debt to GDP at 250%, with Germany and the UK at about 400% of GDP.
- The consequences of the global financial crisis are potentially catastrophic and far reaching.

Minds @ Work

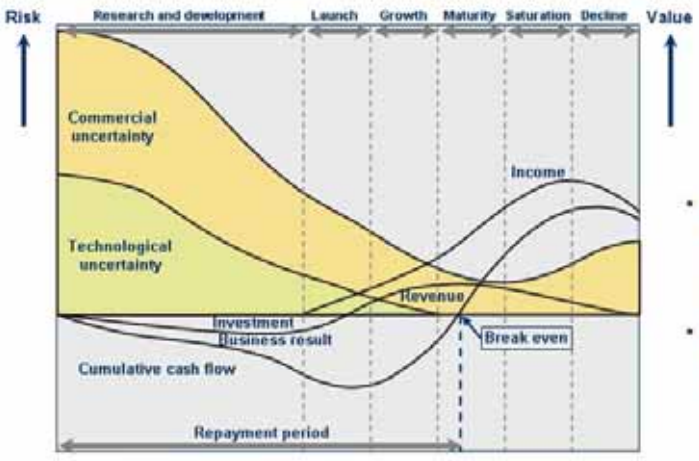
Impact of the Global Financial Mess

Chain reaction that impacts companies especially in terms of R&D and information expenditure



Minds @ Work

GDP and R&D - a close positive relationship



Source: TEKES

- Impact of GDP on R&D investments is quick while the reverse while true is more medium to long term.
- R&D investments take a longer time to impact GDP due to the time lag in commercialization.

Need for greater accountability for the amounts spend on R&D

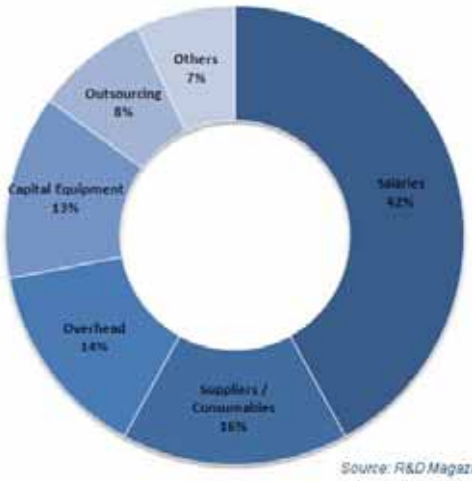
Minds @ Work

What is the likely impact ?

- Lesser budgets ,so more bang for the buck
- Outsourcing to lower cost destinations
- Structured information that will facilitate small step innovation rather than major breakthroughs

The open innovation paradigm

R&D distribution in 2010 (%)

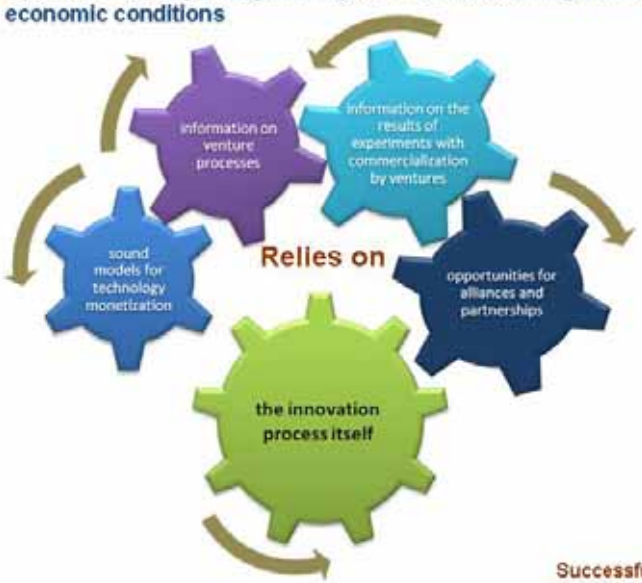


Source: R&D Magazine

Minds @ Work

Enter Open Innovation

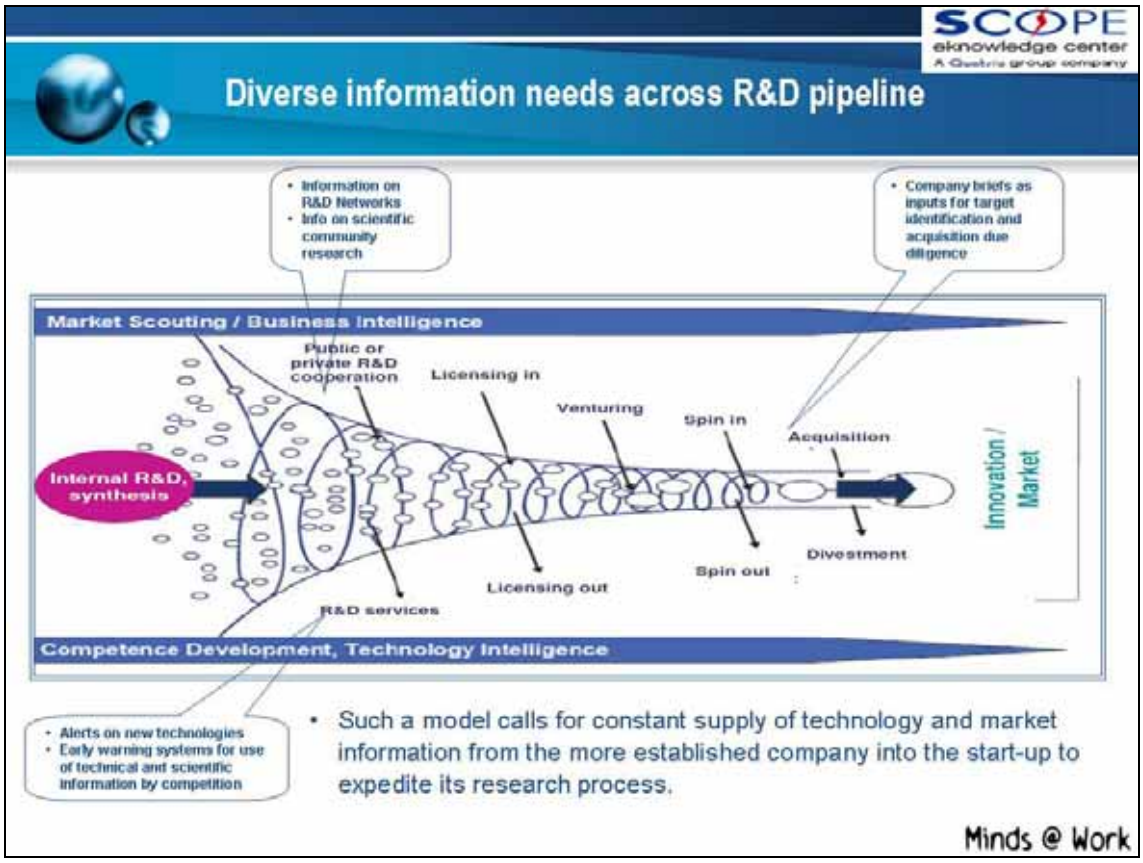
Open innovation paradigm is imperative for sustaining innovation during tough economic conditions



- Ability to capitalize on IPR by identifying alternate routes to commercialize non-core technology
- Higher profitability due to higher incidence of licensing arrangements and joint ventures
- Ease of accessing a larger pool of talented human capital
- Drastic reduction in time required from ideation to market

Successful adoption of open innovation model results in

Minds @ Work

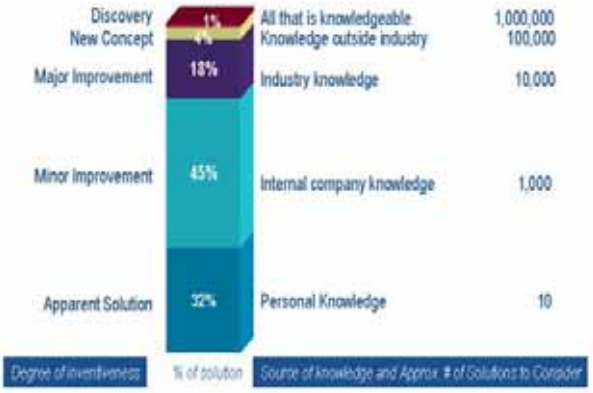

SCOPE
eknowledge center
Diverse information needs across R&D pipeline
• Information on R&D Networks
• Info on scientific community research
• Company briefs as inputs for target identification and acquisition due diligence
Market Scouting / Business Intelligence
Public or private R&D cooperation
Licensing in
Venturing
Spin in
Acquisition
Internal R&D, synthesis
Innovation / Market
Divestment
Spin out
Licensing out
R&D services
Competence Development, Technology Intelligence
• Alerts on new technologies
• Early warning systems for use of technical and scientific information by competition
• Such a model calls for constant supply of technology and market information from the more established company into the start-up to expedite its research process.
Minds @ Work


SCOPE
eknowledge center
Diverse challenges across stake holders
Stake holder
Strategists including provost, dean etc.
• Establishing world class capability
• Benchmarking against peer institutions
• Define strategic direction
• Optimize allocation of funds across departments
Managers
• Increase group level funding
• Identify next hot topics
• Identify areas to focus/invest in
• Create a world class department
Researchers (R&D)
• Identify the high impact research areas
• Identify the best collaborators
• Increase funding opportunities
Challenges
Minds @ Work

Only 2 – 3 % of all patented solution are really new...

"Keep on the lookout for novel ideas that others have used successfully. Your idea has to be original only in its adaptation to the problem you're working on".

Thomas Edison (1847-1931)



Need for a solution that facilitates cross domain innovation - lower cost and quickens the innovation process

Minds @ Work

Our approach ...

- A user-friendly approach to hasten the process of innovation
- A "productized service" based on semantic algorithms to systematically help in the innovation process
- Focus on engineering Patents to Begin with
- Identify the pattern of innovation for a product or a concept by mining patent and other scientific literature.
- Identify and record in a patent document the Novelty /USE/ADVANTAGE/Prior Art – by the major principles of innovation
- A software interface that facilitates quick multi parametric search viz. problem concept, patent number etc.

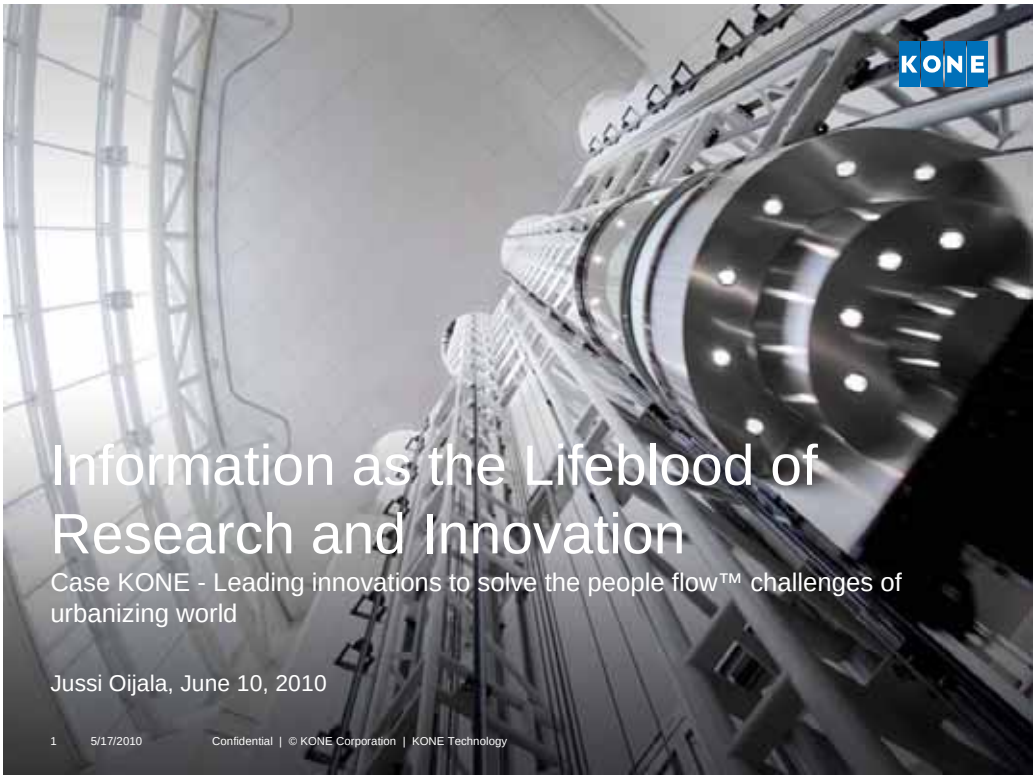
Indexes innovation and helps in cross domain

Minds @ Work


SCOPE
eknowledge center
Thank you
Minds @ Work

Information as the Lifeblood of Research and Innovation – Case Kone

Jussi Oijala



Information as the Lifeblood of Research and Innovation

Case KONE - Leading innovations to solve the people flow™ challenges of urbanizing world

Jussi Oijala, June 10, 2010

KONE in brief

- KONE provides
  - industry-leading elevators, escalators and automatic building doors
  - innovative solutions for maintenance and modernization
- KONE is one of the leading companies in its industry
- In 2009, annual net sales of EUR 4.7 billion
- KONE was founded in Finland in 1910
- KONE operates worldwide
- KONE has approximately 34,000 employees
- KONE is listed on the NASDAQ OMX Helsinki since 1967

Journey to the world of innovations

- KONE vision
- KONE strategy
- KONE Competive edges
- Solution creation
- Innovation process & practices

Vision

DELIVERING THE BEST PEOPLE FLOW ™ EXPERIENCE

- KONE's objective is to deliver the best People Flow™ experience by developing and delivering solutions that enable people to move smoothly, safely, comfortably and without waiting in buildings in an increasingly urbanizing environment.

Strategy

- KONE delivers a performance edge to its customers by creating the best user experience with innovative People Flow™ solutions
- KONE's people leadership and processes enable operational excellence and cost competitiveness

Journey to the world of innovations

- KONE vision
- KONE strategy
- KONE Competive edges
  - Meeting the challenges of People Flow
  - Pioneering in Eco-efficiency
  - Pushing the limits of Design
- Solution creation
- Innovation process & practices

Trends impacting People Flow™ in buildings

Urbanization
Global warming
Aging population
Digitalization

Constructing higher and more versatile buildings

Expanding and upgrading urban infrastructure

Aiming for the zero energy building

Creating intelligent buildings

Enabling smooth People Flow™

- People Flow means people moving smoothly, safely, comfortably and without waiting in and between buildings
- People Flow is about ensuring high quality accessibility and best possible user experience for everyone

- People Flow guides everything we do:
  - Collaborating closely with customers and partners enables customer-driven solution creation.
  - Creating best available elevator, escalator and automatic building door technologies as the foundation for innovative People Flow solutions.
  - Utilizing the latest technology together with efficient processes and state-of-the-art working methods to support the uninterrupted People Flow throughout the buildings' lifecycle.

Pioneering in eco-efficient solutions

- Selecting an eco-efficient elevator makes a difference
  - Buildings account for 40% of the world's energy consumption
  - Elevators account for 2-10% of the building's energy consumption
- A broad portfolio of eco-efficient solutions
  - Efficient machinery
  - Energy regeneration
  - Standby solutions
  - Energy-efficient lighting
  - Oil free solutions
- Support for green building design
  - Energy calculations
  - Eco-efficient solutions that comply with requirements

Objectives for KONE eco-efficient solutions
Cutting energy consumption of KONE volume elevator products by 50% by 2010

Pushing the limits of design

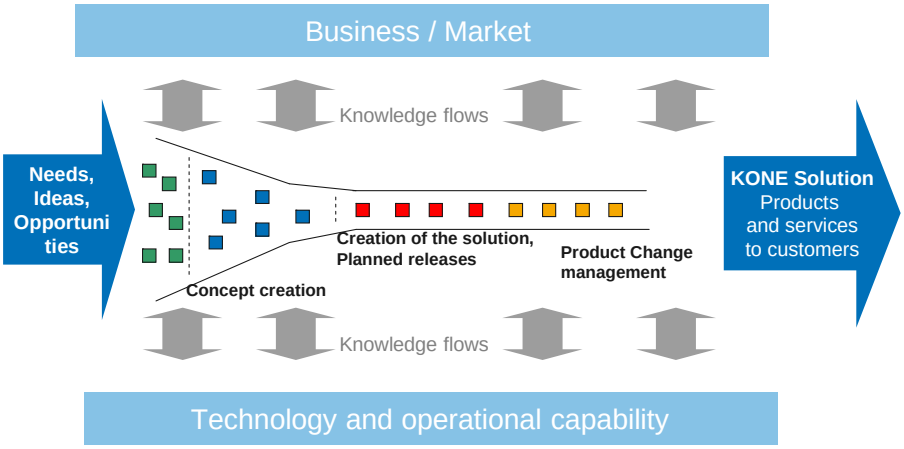
- Through design, KONE brings a new dimension to the top elevator technology
- The award-winning success of KONE Design Collection is a result of close collaboration between design and technology in order to create the best possible user experience
- Global concepts and cultural localization for different market areas
- Consistent, unique KONE appearance with possibility of customization
- Lasting and environmentally solid solutions

Journey to the world of innovations

- KONE vision
- KONE strategy
- KONE Competive edges
- Solution creation
  - Solution creation process
- Innovation process & practices

Solution creation process

From need to solution



Market and customer segmentation

Office market	Retail market	Hotel market	Residential market	Infrastructure market	Medical market	Special buildings market*
Influencing authorities and organizations						
Influencers involved in building design and project planning						
Customers involved in construction and development						
Customers acting as building owners and tenants						
Customers taking care of facility management						
End-users						

Current trends in innovation and idea generation

Past	Future
▪ Innovation contests ▪ Patenting activity ▪ Basic research ▪ Networking with external research world with few selected partners	▪ Innovation with partners and customers (selected partners, major projects typically) ▪ Open innovation with external world (e.g. Fimecc, selected partners) ▪ Design and innovation labs (with academic world e.g. Aalto University) ▪ Idea generation process and tools (internal and external)

KONE industry leading innovations
EXAMPLES


KONE MonoSpace® machine-room-less elevator


KONE JumpLift™ construction time elevator


KONE MaxiSpace™ elevator without counter weight


KONE EcoMod™ escalator modernization solution


Plug-in installation method for the marine segment


KONE InnoTrack™ autowalk


KONE IDE300 ™ building door and elevator access


Tytyri elevator testing facilities


KONE

New Information Literacy – Perspective of Small and Medium-Sized Enterprises

Mika Waris

Mika Waris

"New Information Literacy – Perspective of Small and Medium Sized Enterprises"

Mika Waris

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Mika Waris

New Information Literacy – Perspective of Small and Medium Sized Enterprises

1. IP-system in Innovation Process
2. The Innovation Capabilities of SMEs
3. Control in Open Innovation

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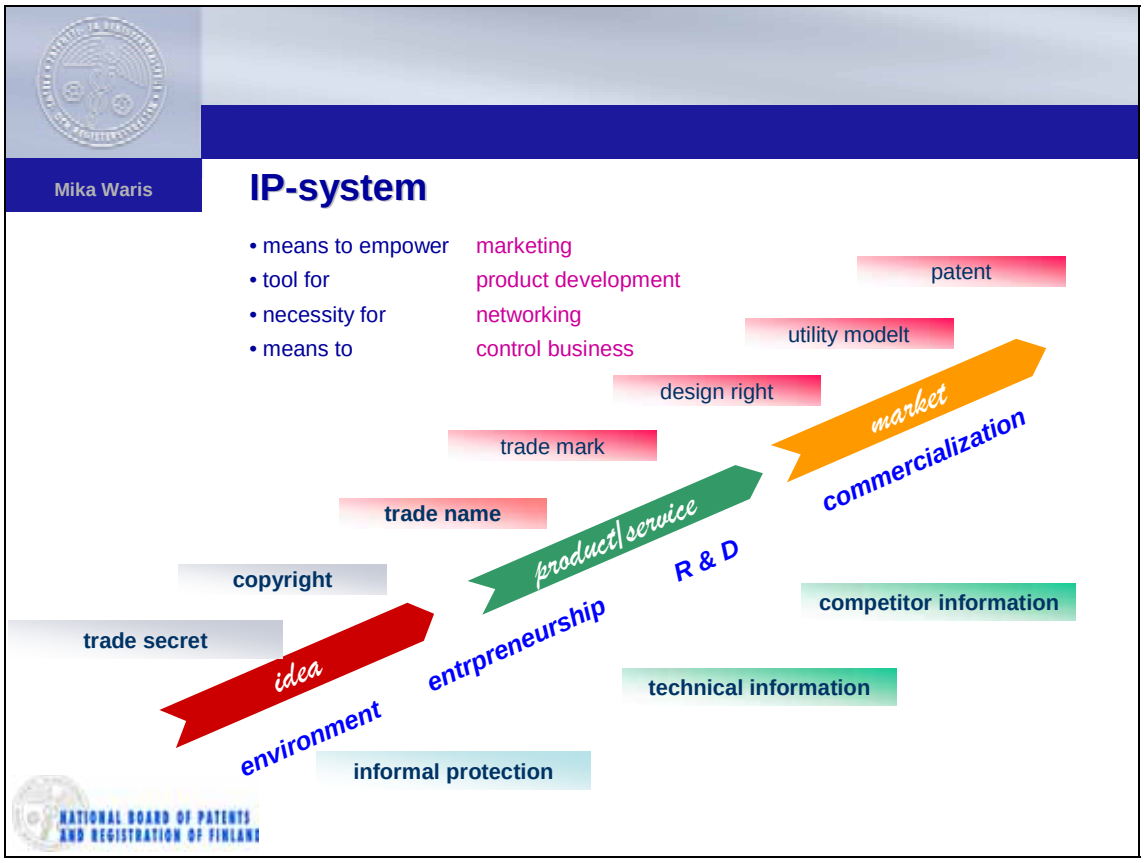
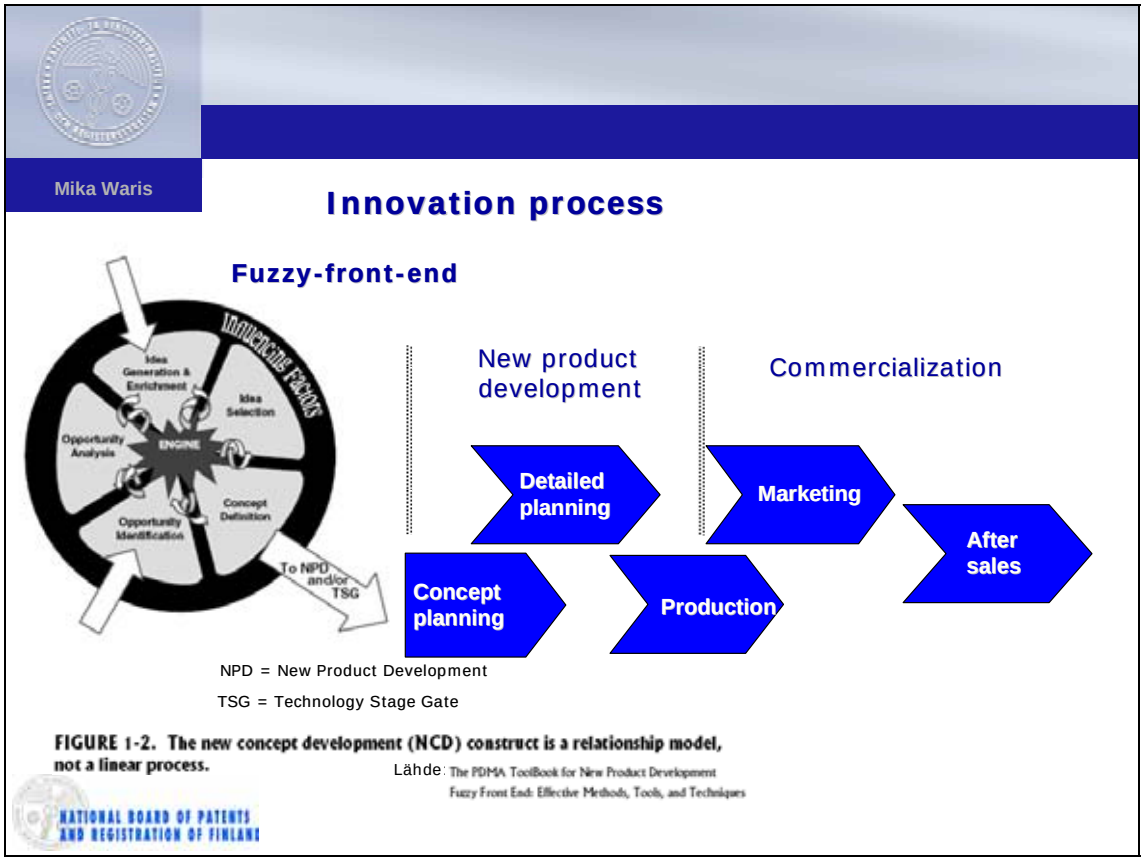

Mika Waris
IP-system
• means to empower
• tool for
• necessity for
• means to
marketing
product development
networking
control business
patent
utility modelt
design right
trade mark
trade name
copyright
trade secret
market
commercialization
product/service
R & D
competitor information
idea
entrpreneurship
technical information
environment
informal protection
NATIONAL BOARD OF PATENTS AND REGISTRATION OF FINLAND


Mika Waris
Innovation process
Fuzzy-front-end
Idea Generation & Enrichment
Idea Selection
Concept Definition
Opportunity Identification
Opportunity Analysis
ENGINE
To NPD and/or TSG
New product development
Commercialization
Detailed planning
Marketing
After sales
Concept planning
Production
NPD = New Product Development
TSG = Technology Stage Gate
FIGURE 1-2. The new concept development (NCD) construct is a relationship model, not a linear process.
Lähde: The PDMA ToolBook for New Product Development
Fuzzy Front End: Effective Methods, Tools, and Techniques
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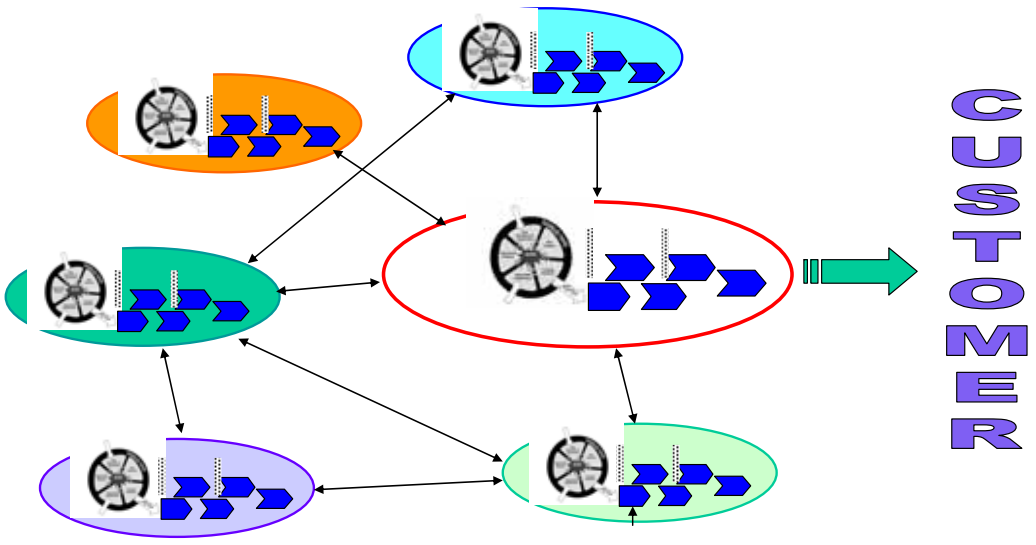
Mika Waris



Innovation network

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Mika Waris

SME´s capabilities needed to succeed in the innovation process ?

New information

Incremental innovations

Networking

Perceive new possibilities

Evaluate risks

Agility to change

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Mika Waris

The patent system

- is an information dissemination system

1) The inventor gets an exclusive right to utilize the invention

2) In exchange of it he has to permit the disclosure of the invention

pat.info

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Mika Waris

Patent information

- based on patent publications
- detailed descriptions of technical solutions
- more than 60 000 000 publications
- the largest source of technical information in the world
- grows rapidly
- 80 – 90 % of the information is not found in any other source

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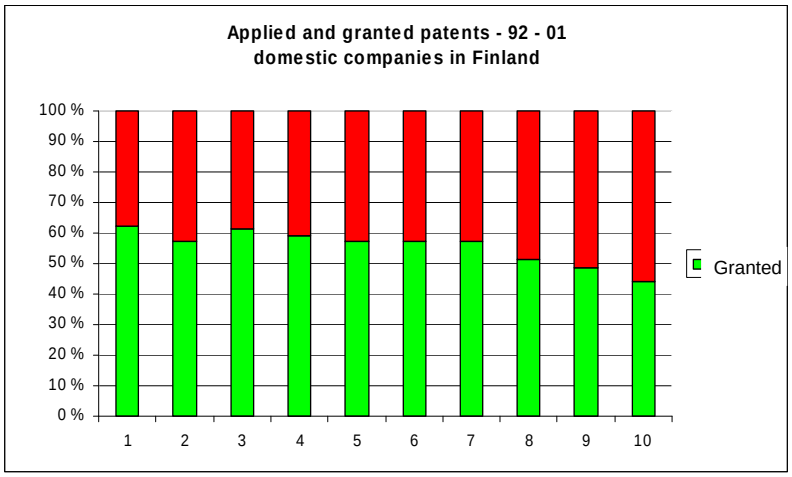
Mika Waris



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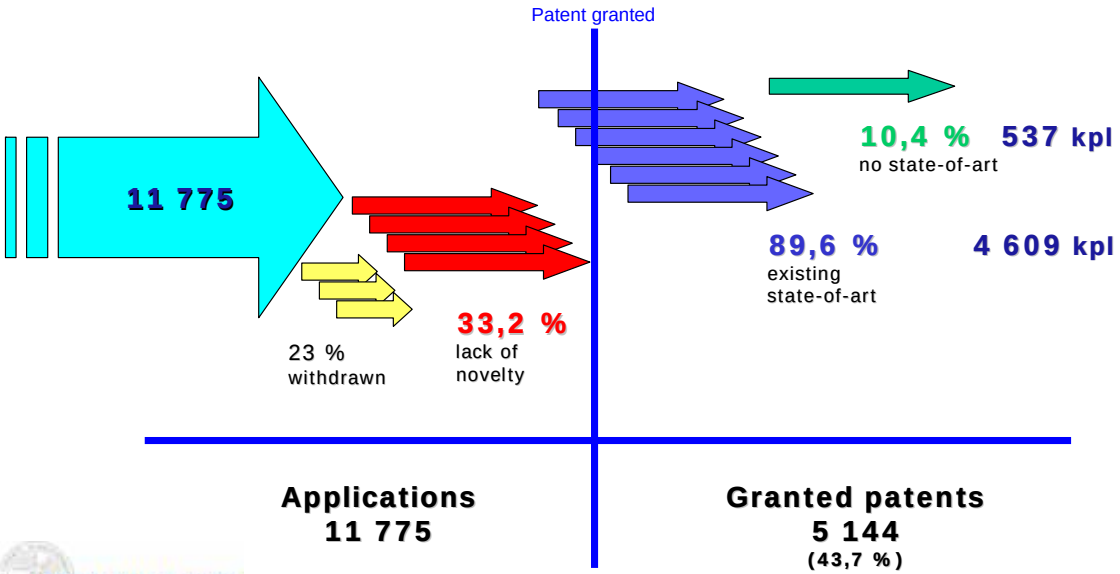
Domestic patent applications 2000 - 2005



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Mika Waris

Conclusions

By developing relevant information services and service providers and using them

- Remarkable improvement is expected to company, branch and macro level performance of industries
- In particular, the improvement of competitiveness of SMEs is expected

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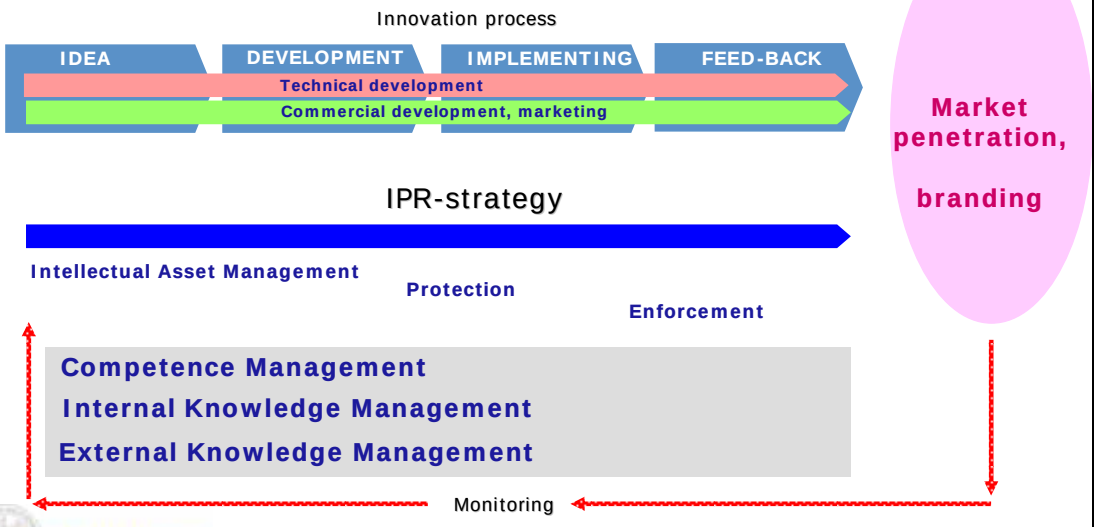
Mika Waris

Control strategy



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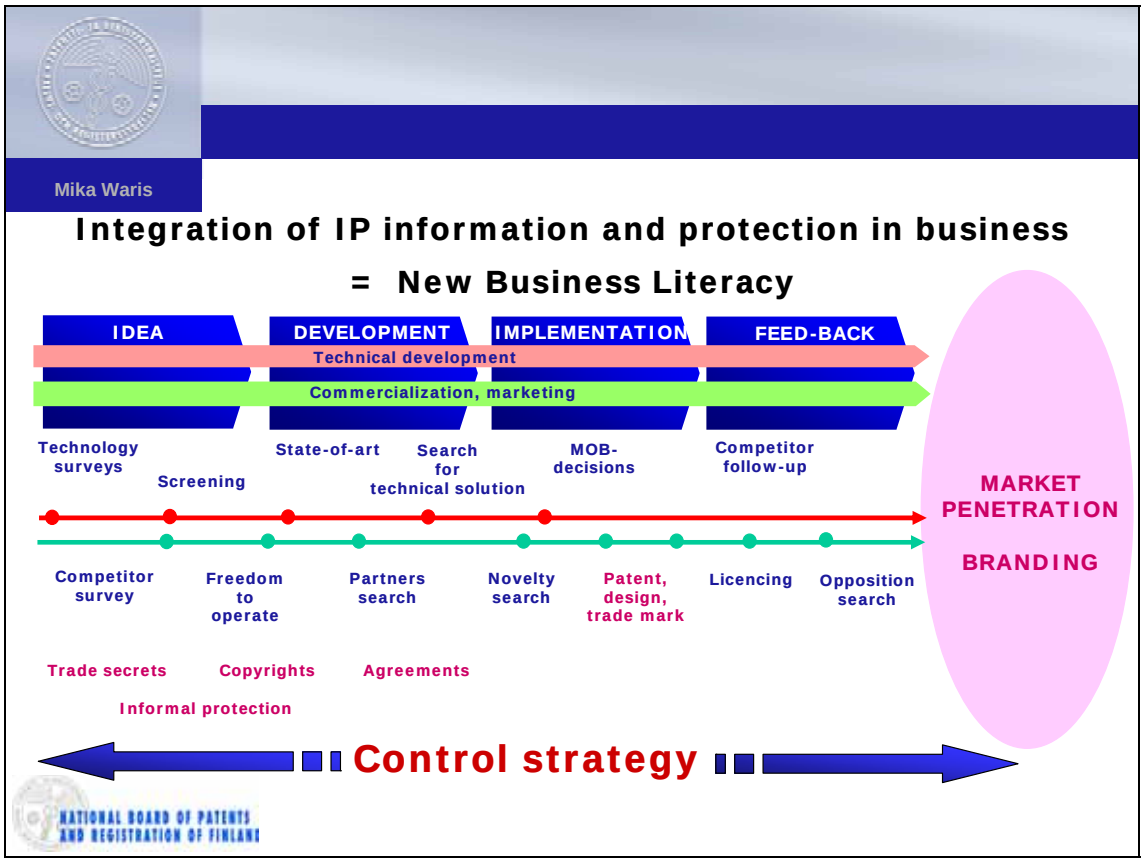
Mika Waris
Integration of IP information and protection in business
= New Business Literacy
IDEA
DEVELOPMENT
IMPLEMENTATION
FEED-BACK
Technical development
Commercialization, marketing
Technology surveys
Screening
State-of-art
Search for technical solution
MOB-decisions
Competitor follow-up
MARKET PENETRATION
BRANDING
Competitor survey
Freedom to operate
Partners search
Novelty search
Patent, design, trade mark
Licencing
Opposition search
Trade secrets
Copyrights
Agreements
Informal protection
Control strategy
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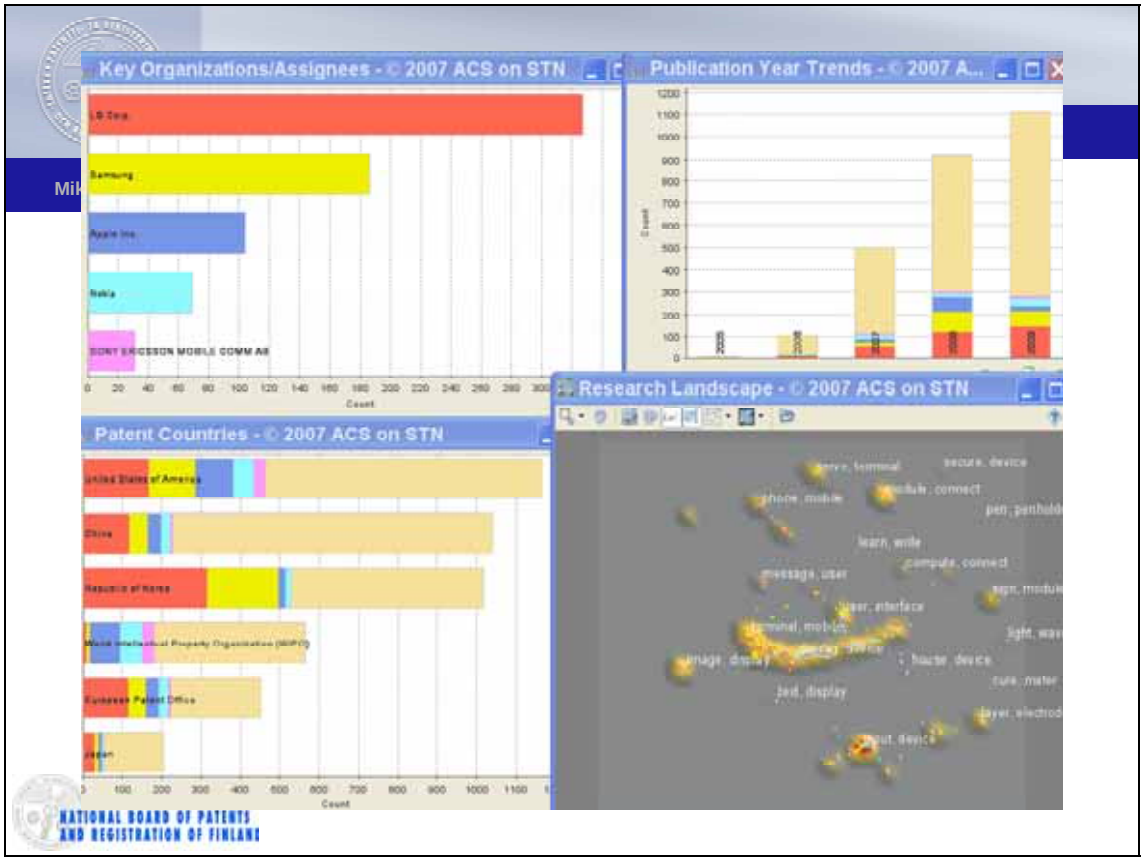
Key Organizations/Assignees - © 2007 ACS on STN
Publication Year Trends - © 2007 A...
Research Landscape - © 2007 ACS on STN
Patent Countries - © 2007 ACS on STN
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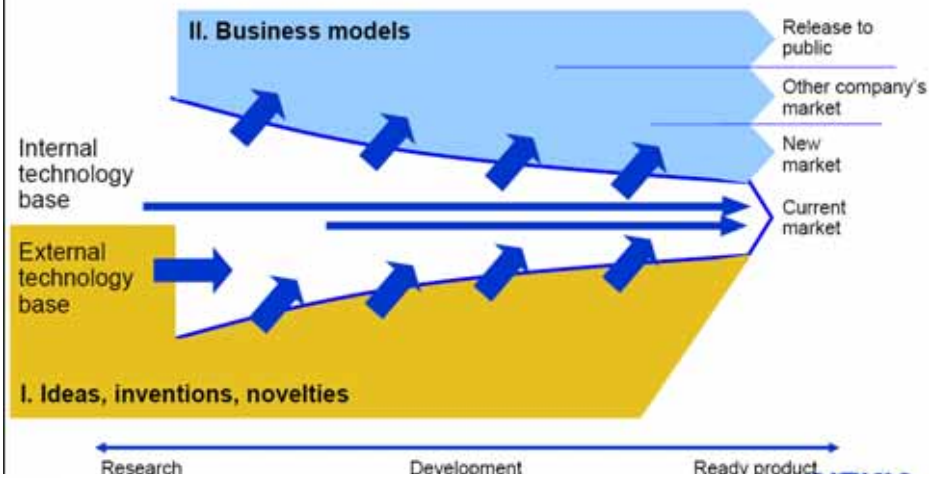
Mika Waris

Open Innovation Brings In External Ideas And Uses External Business Models



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Source: YN_TEKES_innovationseminar_060308.ppt

Mika Waris

Closed innovation vs. open innovation paradigm:

R&D in ROW **99,3 %**

R&D in Finland

0,7 %

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Mika Waris

Challenge:

New business paradigm!

New Business Literacy!

New Information Services for SMEs!

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Mika Waris

Thank you!

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The Innovation Landscapes for Tekes Programmes

Juha Korkeila, Laura Ruotsalainen & Raine Hermans

The Innovation Landscapes

ICSTI Annual Conference, June 10-11, 2010

Juha Korkeila, Tekes
Laura Ruotsalainen, VTT Technical Research Centre of Finland
Raine Hermans, Tekes

Tekes

Need for understanding future innovations

- Innovations are difficult to find – especially beforehand
- Innovation spotting is not treasure hunt but close to that
- Innovation mapping is navigating and exploring like Columbus did

➡ We need truly professional help in finding new frontiers of innovations.

➡ We need processes and tools to see wider perspective or simple snapshots of innovations.

Mission Impossible? No… at least to us Finns.

this is FINLAND
things you should and shouldn't know

HighTech Finland www.htf.fi
A world of ideas and innovations...

THE MILLENNIUM TECHNOLOGY PRIZE

Tekes

Holistic approach is needed within innovation environments – there are no innovation tubes

Tekes

One solution – a step forward though?

- Tekes national programmes as customers – VTT as information provider and interpreter
- getting vital information for future needs in Finland
- research and development co-operations
- taylored process and optional modules
- updating afterwards if needed
- wikipedia based two way channel

To find out…

- new research and development areas, activities and groups
- rising innovation markets and hot spots

…globally.

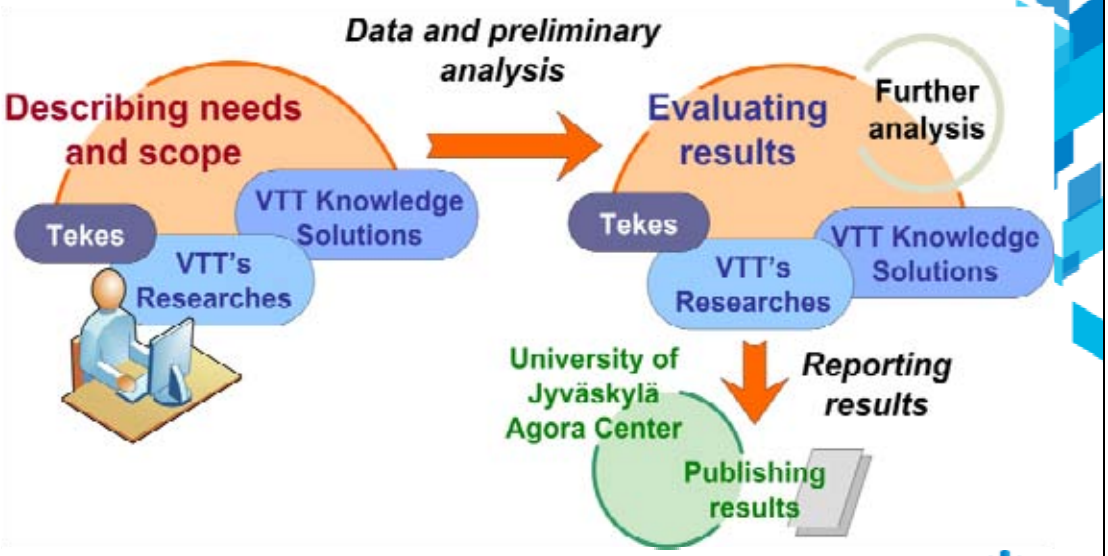
Tekes

What, who, where, when

- Innovation landscape answers questions
  - What is done; technologies, state-of-art, white spaces
  - Who has done r&d and business, co-operation
  - Where r&d and business is done
  - When r&d is done; hot areas, trends, abandoned technologies
- Analyzing and visualizing large amounts of data with text mining tools

Tekes

The process



Tekes

Tools for patent publications

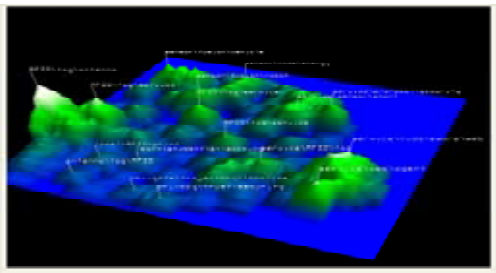
- DWPI Value added database
  - rewritten titles and abstracts
  - own classification
- STN AnaVist text mining and visualization tool for analyzing the data
  - interactive and dynamic maps, diagrams and matrices
  - main players, technology trends, publication years, patent countries etc

American Chemical Society: STN AnaVist

Tekes

Tools for scientific publications

- Scopus database
  - most comprehensive scientific database
- OmniViz text mining and visualization tool for analyzing the data
  - technology trends, actors, year trends



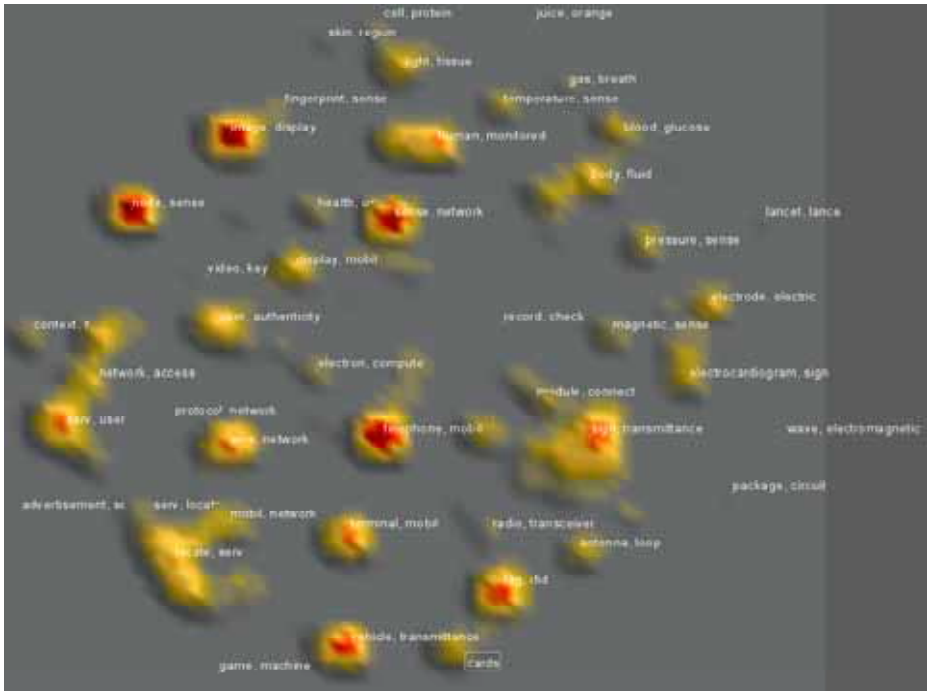
Biowisdom: OmniViz

Tekes

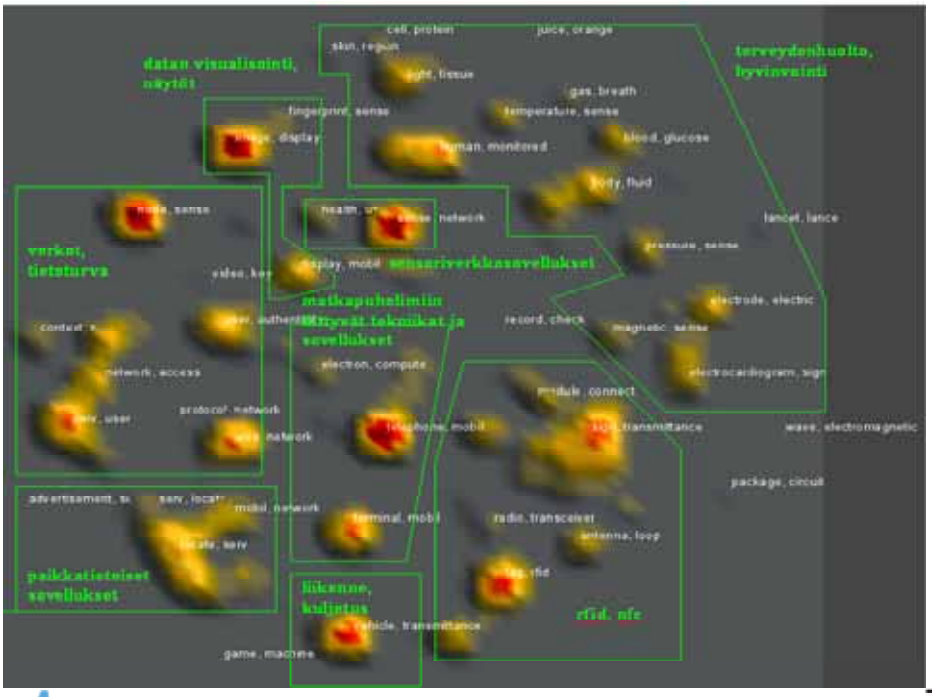
Innovation landscape for Ubicom programme

- Innovation landscape for Ubicom programme 2009
- Focus of the program: technologies of embedded systems and processors designed to make everyday life easy
- Search profile and results
  - Relevant terms, e.g. ubiquitous computing, location based services, near field communication, …
  - 19 400 patents, no year restriction
  - almost 40 000 publications, years limited to 2003-2009

Patent landscape for Ubicom



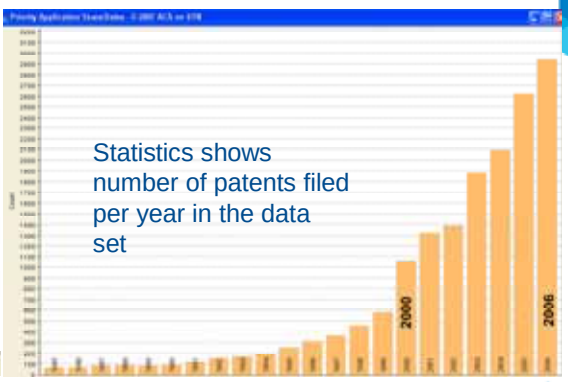
Patent landscape – technology intelligence



Tekes

Competitive intelligence

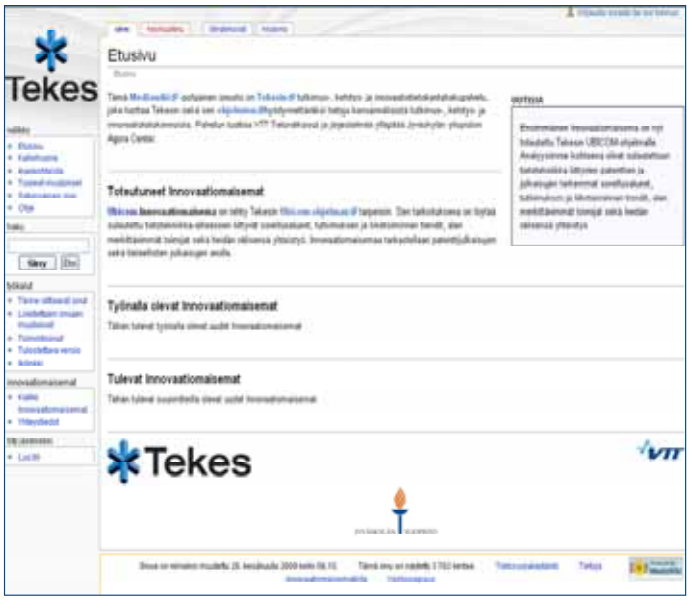
- Most active players identified
  - Nokia, Philips and Research in Motion most active in protecting inventions in Europe
- Number of patents filed increased exponentially



Statistics shows number of patents filed per year in the data set

Tekes

www.innovaatiomaisemat.fi



- Portal maintained by JyU Agora Center, expertise in human-oriented computing
- Portal and results in finnish for being accessible for all Tekes' customers
- Loadable pdf report
  - Ubicom; 163 pages
- Consulting for SMEs

VTT

Tekes

Keynote address: Towards Smart Service – KISTI's Intelligence Systems Using Semantic Web Technology

Hee-Yoon Choi

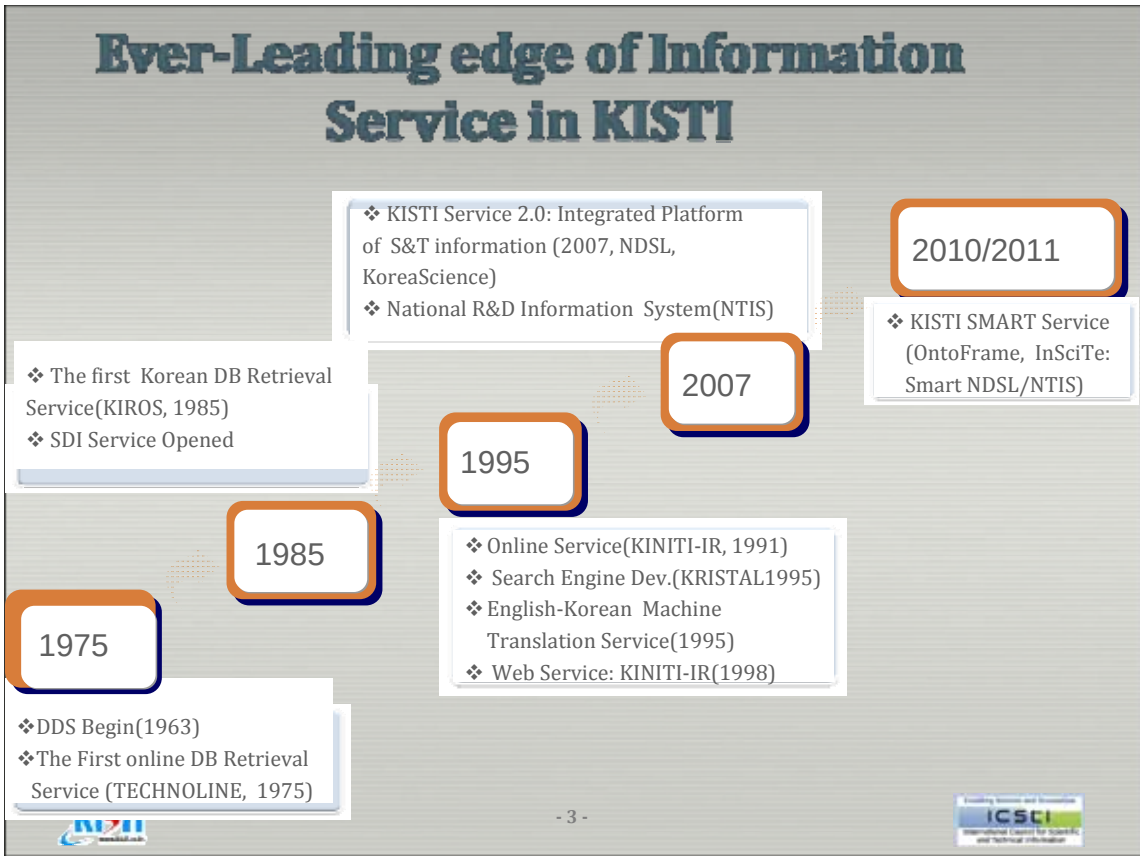
Towards Smart Service
- KISTI's Intelligence Systems using Semantic Web Technology -

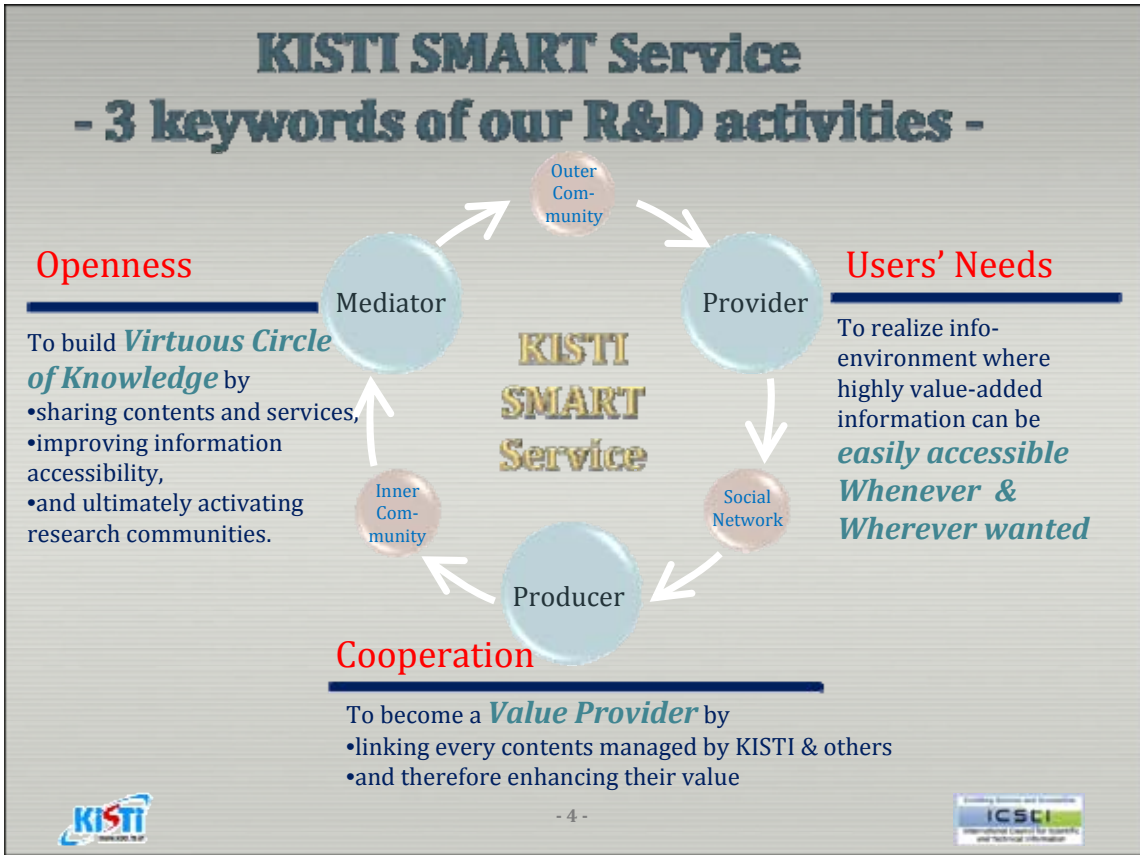
Dr. Heeyoon Choi
hychoi@kisti.re.kr

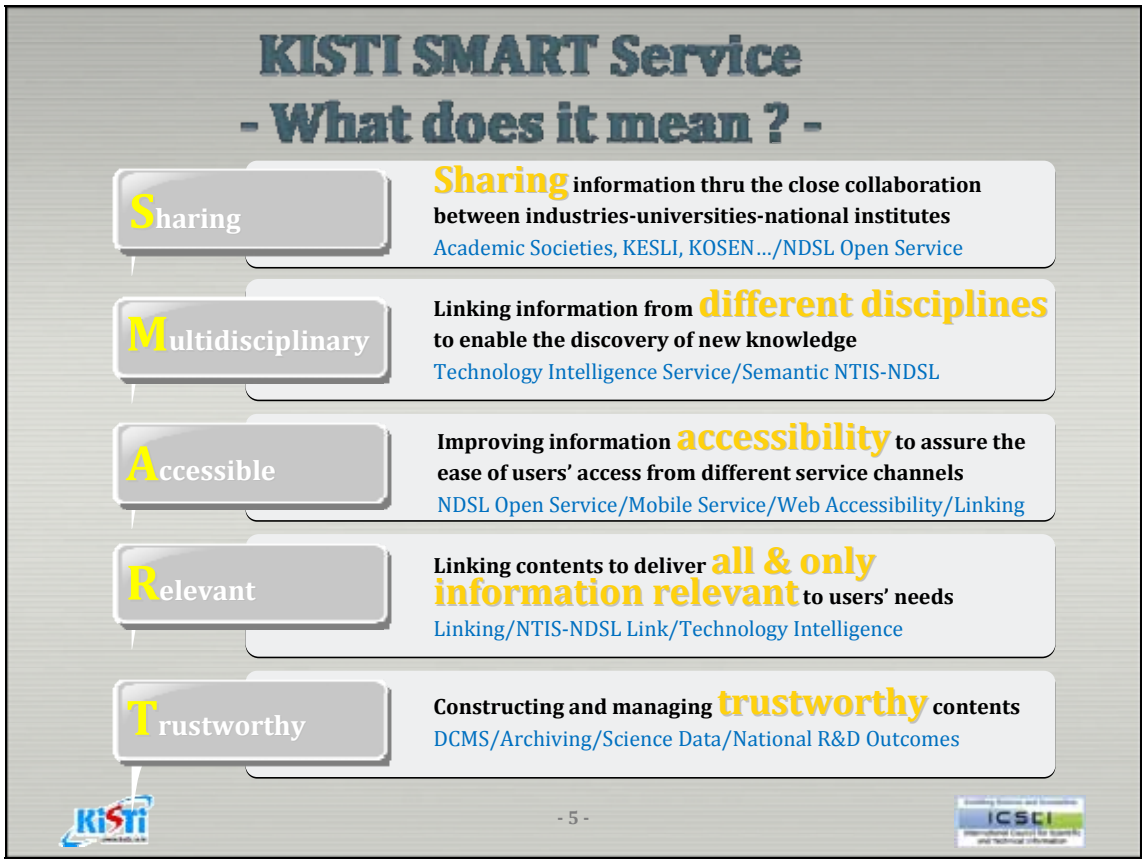
June 11, 2010

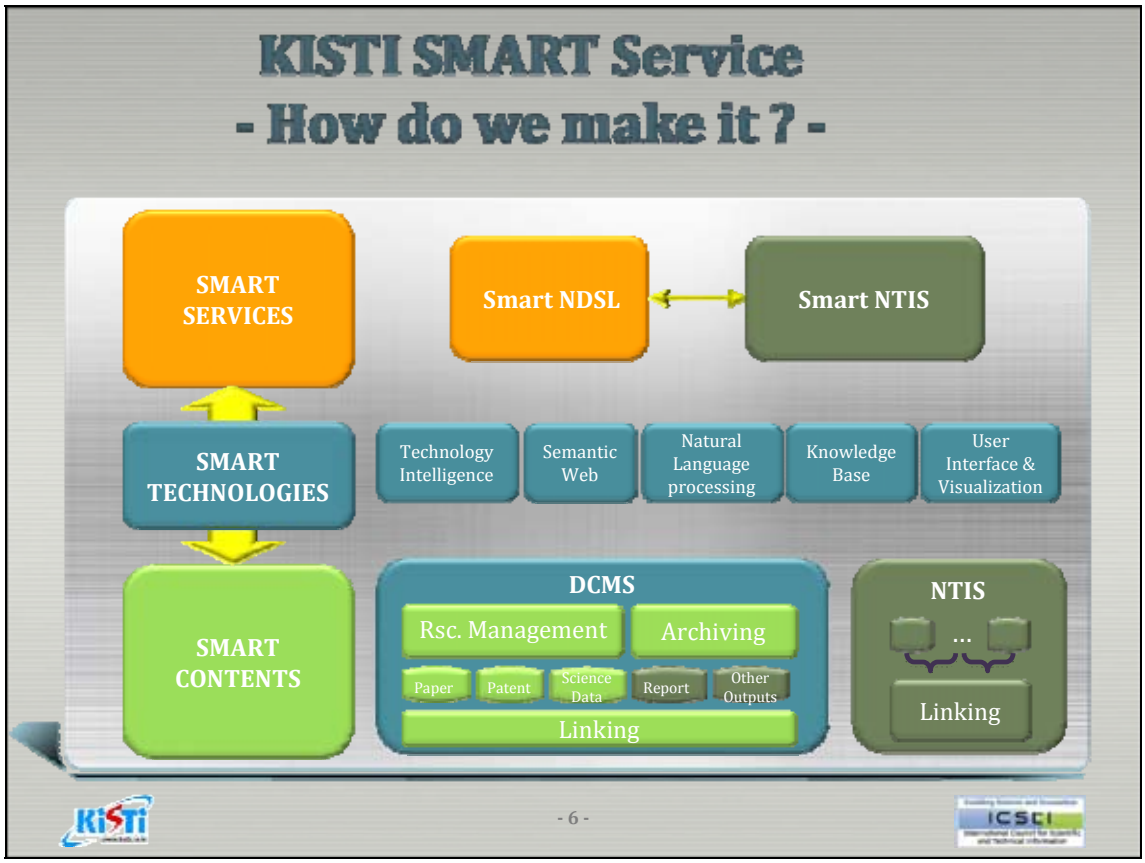
Contents

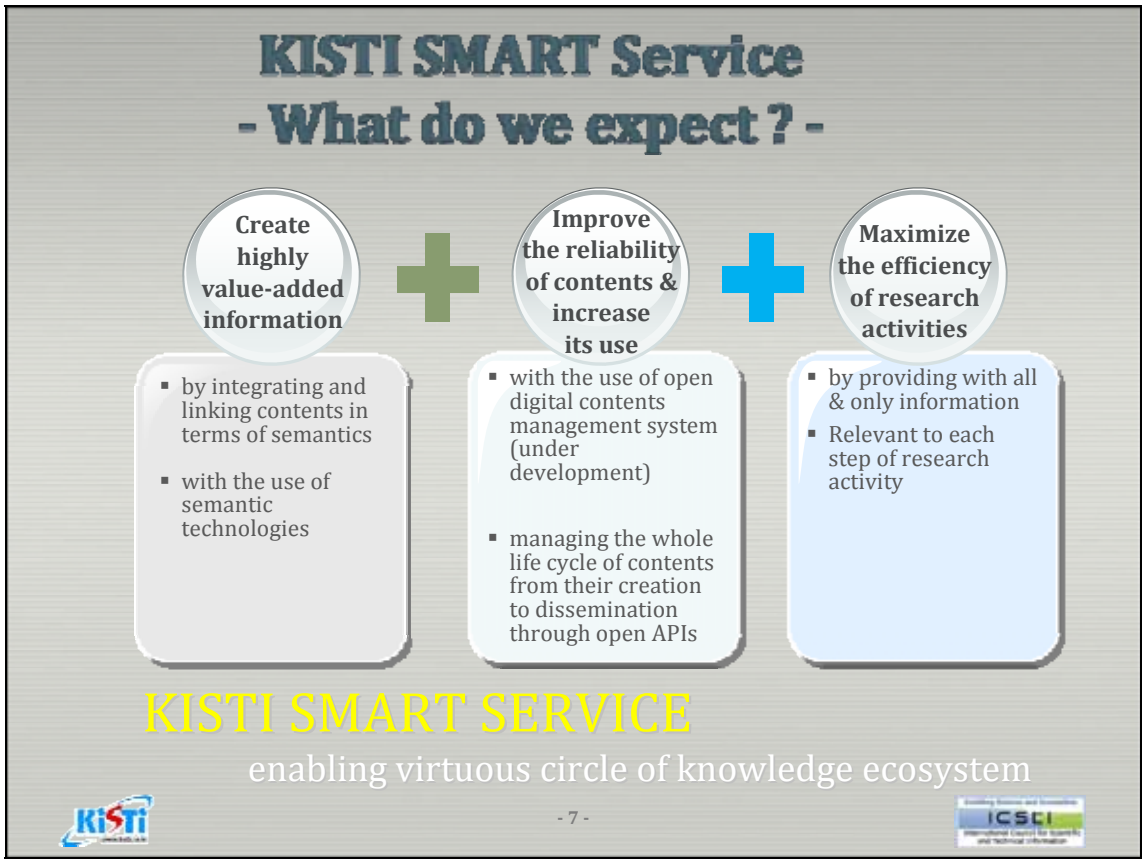
- Ever-Leading edge of Information Service in KISTI
- KISTI SMART Service
- Why Semantics for SMART Service?
- Past & Present - *OntoFrame*®
  - KISTI's Semantic Information Service Platform
- Future - *InSciTe*®
  - KISTI's new Technology Intelligence Service Platform

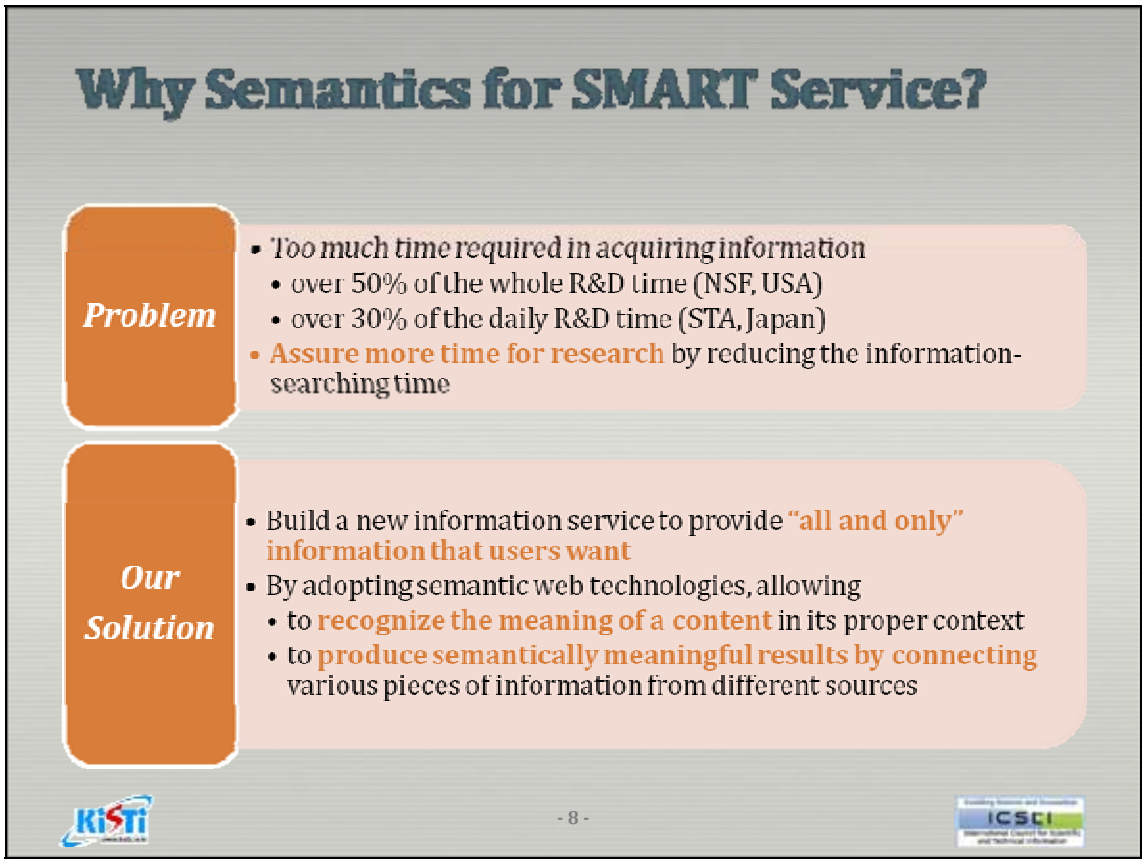

Ever-Leading edge of Information Service in KISTI
❖ KISTI Service 2.0: Integrated Platform of S&T information (2007, NDSL, KoreaScience)
❖ National R&D Information System(NTIS)
2010/2011
❖ KISTI SMART Service (OntoFrame, InSciTe: Smart NDSL/NTIS)
2007
❖ The first Korean DB Retrieval Service(KIROS, 1985)
❖ SDI Service Opened
1995
1985
❖ Online Service(KINITI-IR, 1991)
❖ Search Engine Dev.(KRISTAL1995)
❖ English-Korean Machine Translation Service(1995)
❖ Web Service: KINITI-IR(1998)
1975
❖DDS Begin(1963)
❖The First online DB Retrieval Service (TECHNOLINE, 1975)
- 3 -


KISTI SMART Service
- 3 keywords of our R&D activities -
Openness
To build Virtuous Circle of Knowledge by
•sharing contents and services,
•improving information accessibility,
•and ultimately activating research communities.
Outer Com-munity
Mediator
Provider
KISTI SMART Service
Inner Com-munity
Social Network
Producer
Users' Needs
To realize info-environment where highly value-added information can be easily accessible Whenever & Wherever wanted
Cooperation
To become a Value Provider by
•linking every contents managed by KISTI & others
•and therefore enhancing their value
- 4 -


KISTI SMART Service
- What does it mean ? -
Sharing
Sharing information thru the close collaboration between industries-universities-national institutes
Academic Societies, KESLI, KOSEN…/NDSL Open Service
Multidisciplinary
Linking information from different disciplines to enable the discovery of new knowledge
Technology Intelligence Service/Semantic NTIS-NDSL
Accessible
Improving information accessibility to assure the ease of users' access from different service channels
NDSL Open Service/Mobile Service/Web Accessibility/Linking
Relevant
Linking contents to deliver all & only information relevant to users' needs
Linking/NTIS-NDSL Link/Technology Intelligence
Trustworthy
Constructing and managing trustworthy contents
DCMS/Archiving/Science Data/National R&D Outcomes
- 5 -


KISTI SMART Service
- How do we make it ? -
SMART SERVICES
Smart NDSL
Smart NTIS
SMART TECHNOLOGIES
Technology Intelligence
Semantic Web
Natural Language processing
Knowledge Base
User Interface & Visualization
SMART CONTENTS
DCMS
Rsc. Management
Archiving
Paper
Patent
Science Data
Report
Other Outputs
Linking
NTIS
...
Linking
- 6 -


KISTI SMART Service
- What do we expect ? -
Create highly value-added information
by integrating and linking contents in terms of semantics
with the use of semantic technologies
Improve the reliability of contents & increase its use
with the use of open digital contents management system (under development)
managing the whole life cycle of contents from their creation to dissemination through open APIs
Maximize the efficiency of research activities
by providing with all & only information
Relevant to each step of research activity
KISTI SMART SERVICE
enabling virtuous circle of knowledge ecosystem
- 7 -


Why Semantics for SMART Service?
Problem
Too much time required in acquiring information
over 50% of the whole R&D time (NSF, USA)
over 30% of the daily R&D time (STA, Japan)
Assure more time for research by reducing the information-searching time
Our Solution
Build a new information service to provide "all and only" information that users want
By adopting semantic web technologies, allowing
to recognize the meaning of a content in its proper context
to produce semantically meaningful results by connecting various pieces of information from different sources
- 8 -

OntoFrame® - What is it ?

What is it ?

- ***Onto***logy-enabled Information Service ***Frame***work
- KISTI's **Semantic Web-driven information service platform**
  - Being developed for the **better & intelligent access to S&T information**
  - One of the semantic products out of KISTI's semantic project

OntoFrame® - Dev. Strategies

Build connections between different types of information

- Such as papers/reports/patents/research people/institution..., each of which has been traditionally the subject of a dedicated service
- Using ontologies and other linguistic knowledge resources like thesauri

Provide integrated and analysis Information

- On the basis of the semantic relations drawn from those connections
- By applying inference rules and principles

Build services based on URI (Uniform Resource Identifier)

- To identify each information object, and thus to connect them without ambiguity
- By using in-house developed URI management technology

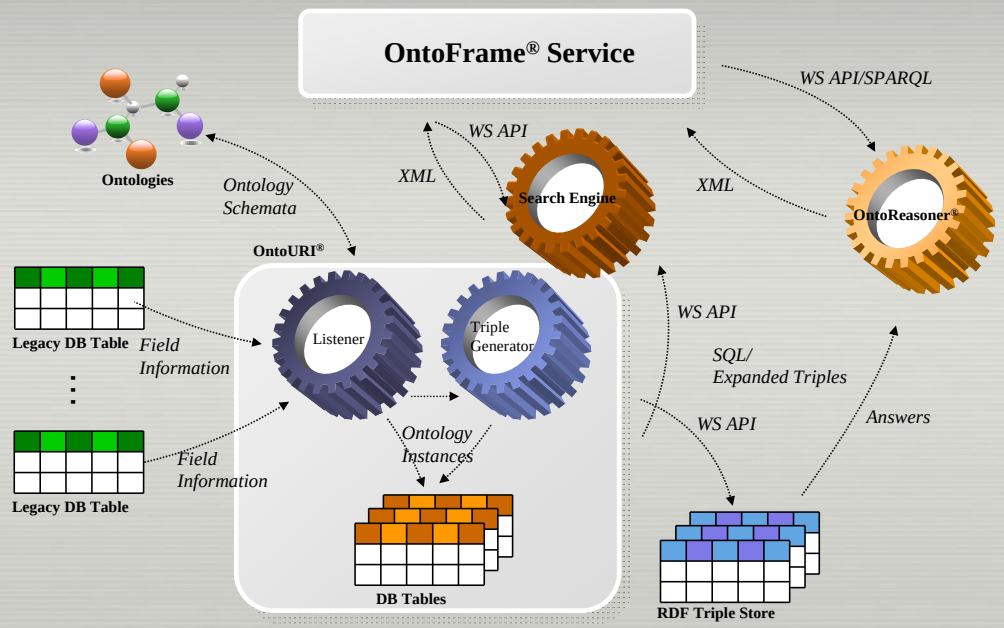
OntoFrame® - Past & Present

Dev. history

- *OntoFrame® 2006*
  - KISTI's *first semantic platform*
  - Running on ***K-REF*** *Ontology*, ***K***ISTI's S&T ***Ref***erence Ontology with over 1.6 millions of RDF instances
- *OntoFrame® 2007*
  - With *OntoReasoner®*, in-house developed inference system
  - Using multiple ontologies including over 30 millions of RDF instances
- *OntoFrame® 2008 / 2009 (S3)*
  - Running with new *OntoReasoner®* enhanced in terms of its reasoning speed
    - *QTPR(Query Time Per Result): 10ms / LUBM(8000)*
  - Capable of dealing with *over 1 billion RDF triples*

- 11 -

OntoFrame® - Modules



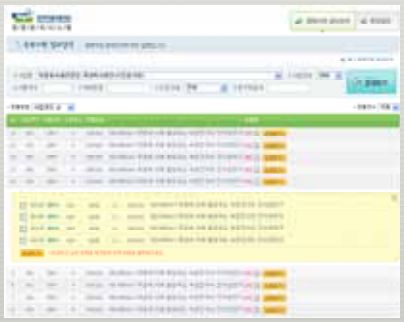
- 12 -

OntoFrame® - Services

- 13 -

OntoFrame® - Use Cases (1/3)

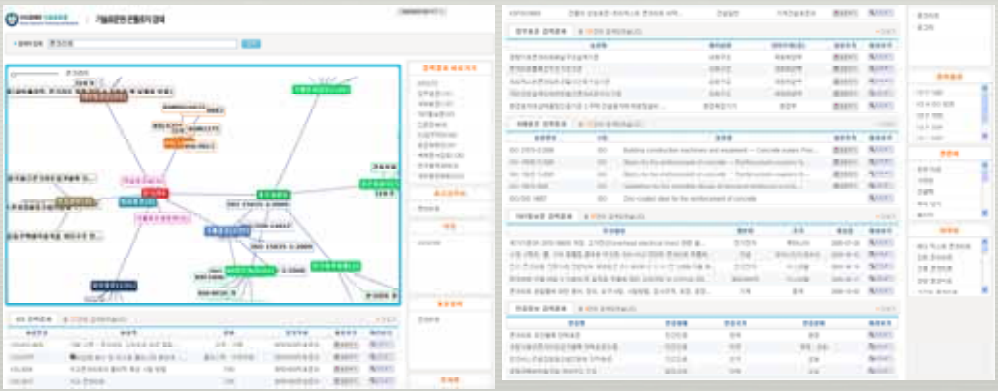
- **Korea Research Foundation (now NRF)**
  - Academic research information analysis system (2007)
    - Recommending experts
    - Filtering evaluation committee members
  - Text analysis system (2008)
    - Finding ethical violations in research



- 14 -

OntoFrame® - Use Cases (2/3)

- **KATS (Korean Agency for Technology & Standards)**
  - Standards Information Service (2008~2009)
    - Providing integrated view on different standards



OntoFrame® - Use Cases (3/3)

- **MOJ (Korean Ministry of Justice)**
  - Intelligent legislation support system (2007~2010)
    - Extracting legal information from full-texts
    - Providing legislative trends using information extracted from laws, cases, articles, petitions
    - Mining opinions expressed in articles

InScite® - Future

Dev. plan

- *Inscite®* (*IN*telligence in *SCI*ence & *TE*chnology)
  - A real-time service platform aiming *to capture & disseminate the technological information needed for strategic planning and decision making* during R&D activities
  - Will be based on
    - KISTI's semantic web technologies & in-house modules for linking different contents and navigating the grid of contents
    - NLP technologies to build structured knowledge from unstructured full-text of contents
  - Will be applied to NDSL at the end of 2010, but their complete integration in 2011

- 17 -

Smart Labs for Smart People – New Ways to Collect, Curate and Share Information

Jeremy Frey

Smart Labs for Smart People

New ways to collect, curate and share information

Jeremy Frey
School of Chemistry, University of Southampton

Talk Outline

- The Evolution of a Smart Lab
- Context for our Work
- Laboratory Blogs and Blog Books
- MyExperiment – Data & Workflows
- The Semantic Present & Future

This Year's (2010) Anniversaries

- 350th Founding of the Royal Society (Open)
  & Pepys began his diary (Closed)
- 100th Dorothy Hodgkin's birth (protein crystallography)
- 70th Discovery of penicillin
- 50th Discovery of the Laser
- 20th Launch of the Hubble Telescope
- 10th The Human Genome Project

- Recording of Scientific investigations and the data they produce

Problematic reproducibility, Lack of detail, Fraud?


editorial

Editorial

Structure Reports Online

William T. A. Harrison,* Jim Simpson[b] and Matthias Weil[c]

Factual Error Found On Internet

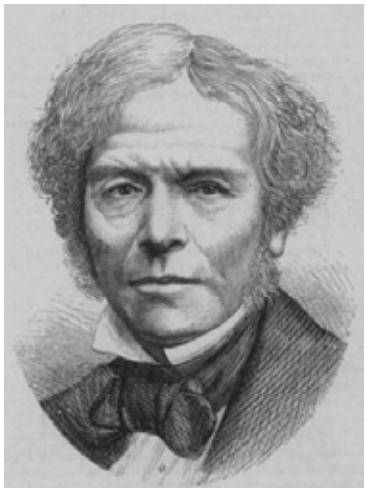
the ONION

Fraudulent manipulation of raw data to create apparently new structures

Detected by comparisons of detailed and raw data

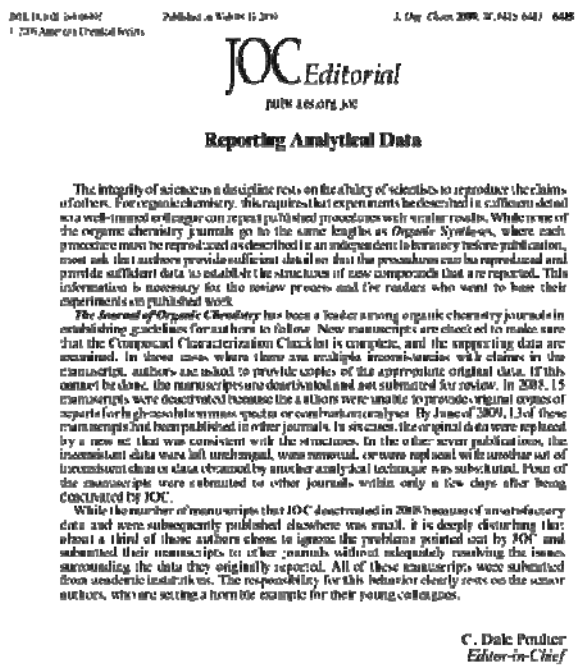
A risk of exposing raw data – makes it possible for more believable fraud

ON BEING
A SCIENTIST
A GUIDE TO RESPONSIBLE CONDUCT IN RESEARCH
THIRD EDITION



Faraday's laboratory notebooks are also remarkable in the amount of detail that they give about the design and setting up of experiments, interspersed with comments about their outcome and thoughts of a more philosophical kind. All are couched in plain language, with many vivid phrases of delightful spontaneity....

Peter Day, 'The Philosopher's Tree: A Selection of Michael Faraday's Writings'



JOC Editorial

pubs.acs.org/joc

Reporting Analytical Data

The integrity of science as a discipline rests on the ability of scientists to reproduce the claims of others. For organic chemistry, this requires that experiments be described in sufficient detail so a well-trained colleague can repeat published procedures with similar results. While none of the organic chemistry journals go to the same lengths as *Organic Syntheses*, where each procedure must be reproduced as described in an independent laboratory before publication, most ask that authors provide sufficient detail so that the procedures can be reproduced and provide sufficient data to establish the structures of new compounds that are reported. This information is necessary for the review process and for readers who want to base their experiments on published work.

The Journal of Organic Chemistry has been a leader among organic chemistry journals in establishing guidelines for authors to follow. New manuscripts are checked to make sure that the Compound Characterization Checklist is complete, and the supporting data are examined. In those cases where there are multiple inconsistencies with claims in the manuscript, authors are asked to provide copies of the appropriate original data. If this cannot be done, the manuscripts are downloaded and not submitted for review. In 2008, 15 manuscripts were deactivated because the authors were unable to provide original copies of spectra for high-resolution mass spectra or combustion analyses. By June of 2009, 13 of these manuscripts had been published in other journals. In several cases, the original data were replaced by a new set that was consistent with the structures. In the other seven publications, the inconsistent data were left unchanged, were removed, or were replaced with another set of inconsistent data or data obtained by another analytical technique was substituted. Four of the manuscripts were submitted to other journals within only a few days after being deactivated by JOC.

While the number of manuscripts that JOC deactivated in 2008 because of unsatisfactory data and were subsequently published elsewhere was small, it is deeply disturbing that about a third of these authors chose to ignore the problems pointed out by JOC and submitted their manuscripts to other journals without adequately resolving the issues surrounding the data they originally reported. All of these manuscripts were submitted from academic institutions. The responsibility for this behavior clearly rests on the senior authors, who are setting a horrible example for their young colleagues.

C. Dale Poulter
Editor-in-Chief

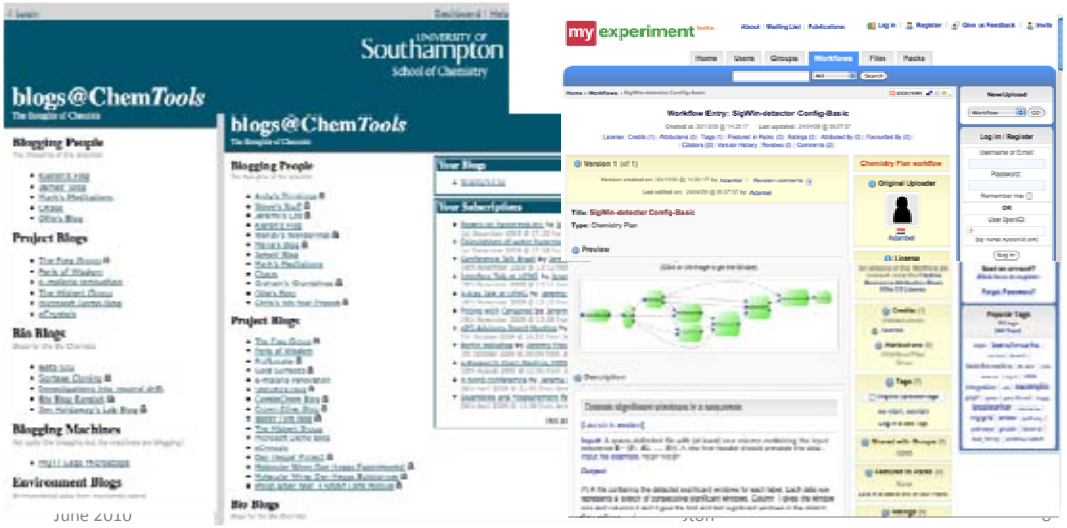
The integrity of science as a discipline rests on the ability of scientists to reproduce the claims of others.

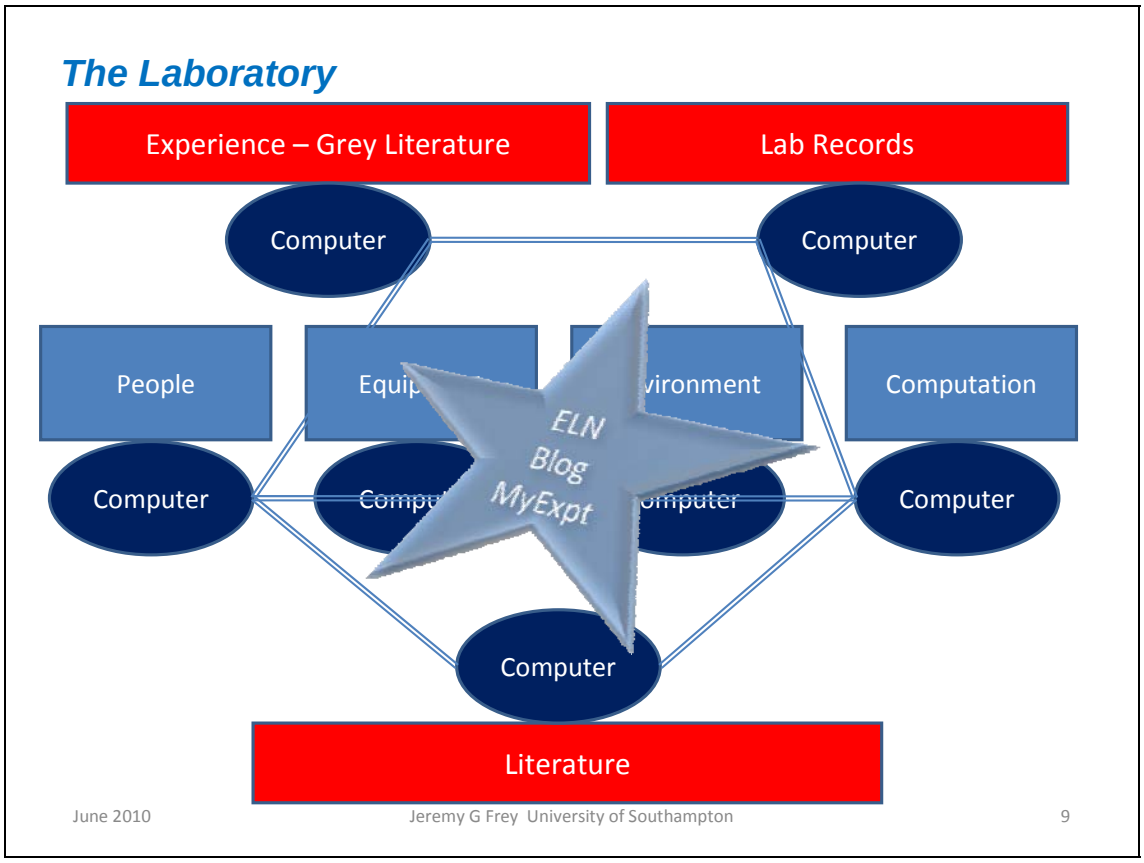
While none of the organic chemistry journals go to the same lengths as Organic Syntheses, where each procedure must be reproduced as described in an independent laboratory before publication, …….. sufficient detail so that the procedures can be reproduced and provide sufficient data to establish the structures …….

This information is necessary for the review process …… to base their experiments on published work.

11. ***It is worth remembering, a research notebook should present a diary not a data repository.***
    - Record your thoughts, ideas and theories, they may prove invaluable at some future date.

BUT – the data needs to be recorded somewhere! The data only lives if connected to the laboratory notebook to provide the context. This essential link is often fragile. Need a new approach!




The Laboratory
Experience – Grey Literature
Lab Records
Computer
Computer
People
Equip
vironment
Computation
ELN
Blog
MyExpt
Computer
Computer
Computer
Literature
June 2010
Jeremy G Frey University of Southampton
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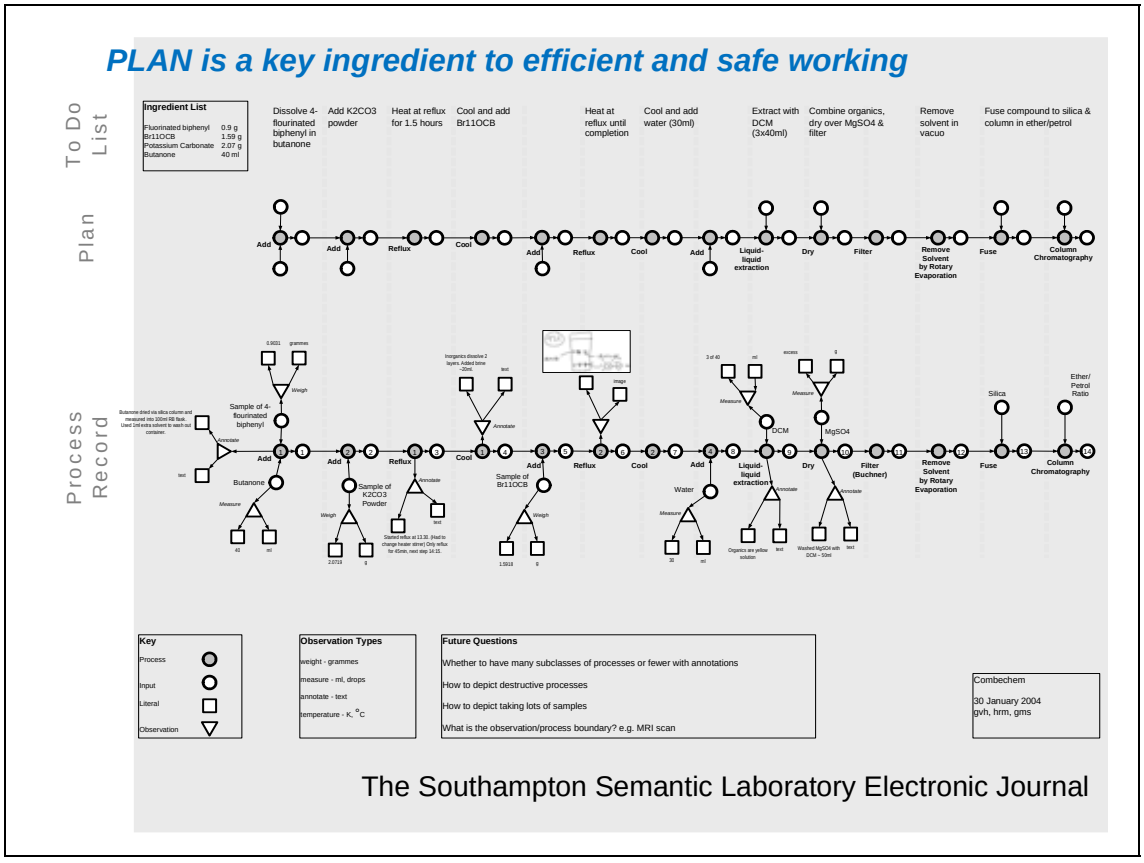
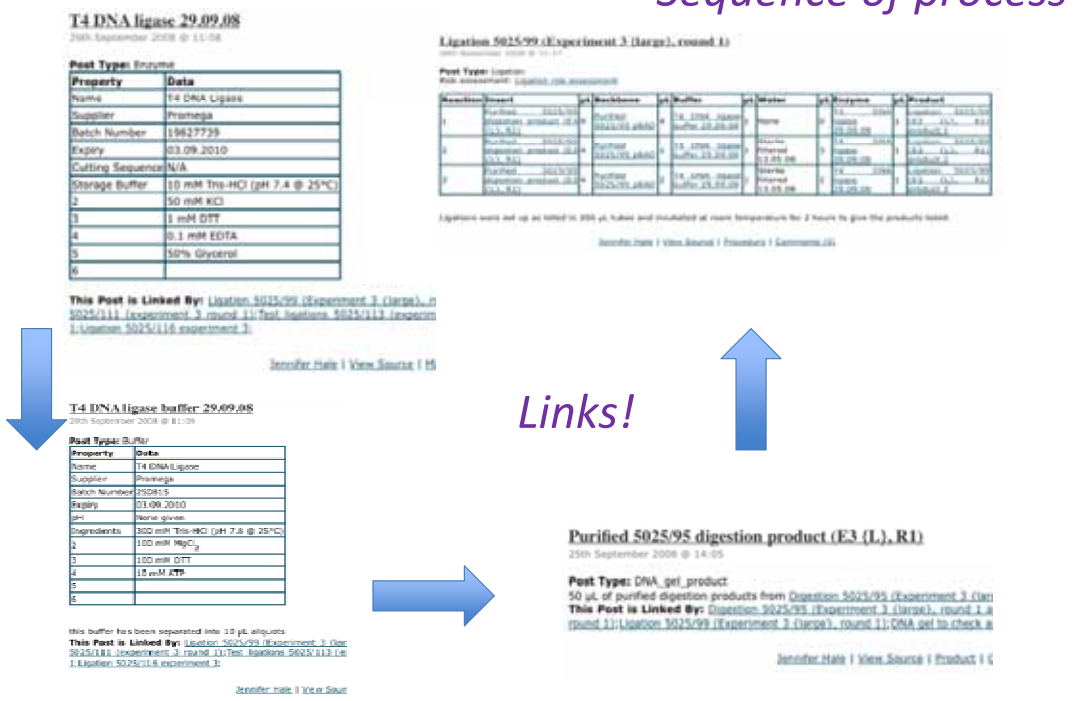
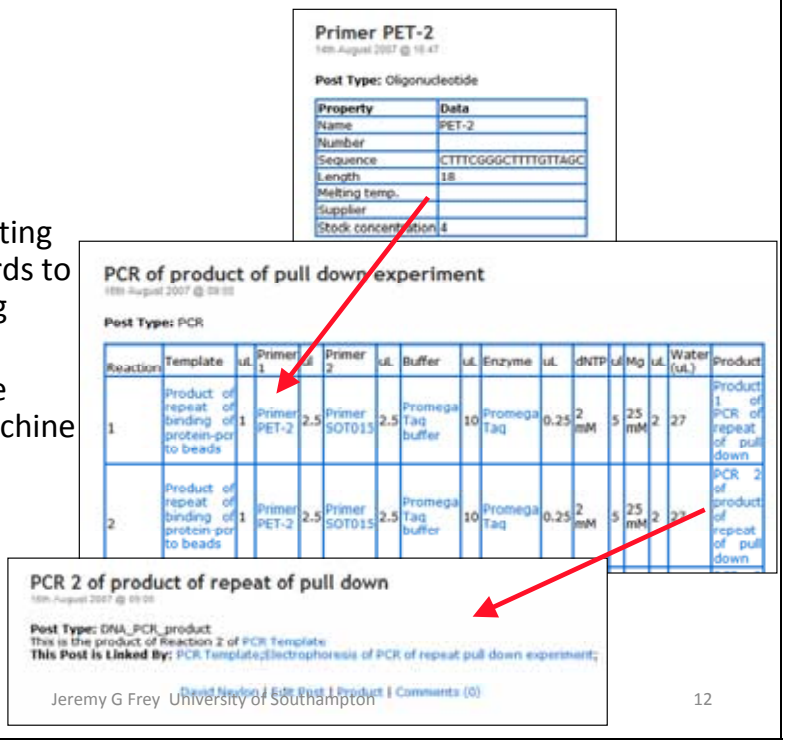

PLAN is a key ingredient to efficient and safe working
To Do List
Plan
Process Record
Ingredient List
Fluorinated biphenyl 0.9 g
Br11OCB 1.59 g
Potassium Carbonate 2.07 g
Butanone 40 ml
Dissolve 4-flourinated biphenyl in butanone
Add K2CO3 powder
Heat at reflux for 1.5 hours
Cool and add Br11OCB
Heat at reflux until completion
Cool and add water (30ml)
Extract with DCM (3x40ml)
Combine organics, dry over MgSO4 & filter
Remove solvent in vacuo
Fuse compound to silica & column in ether/petrol
Add
Reflux
Cool
Liquid-liquid extraction
Dry
Filter
Remove Solvent by Rotary Evaporation
Fuse
Column Chromatography
Sample of 4-flourinated biphenyl
Butanone
Sample of K2CO3 Powder
Sample of Br11OCB
Water
DCM
MgSO4
Filter (Buchner)
Silica
Ether/ Petrol Ratio
Key
Process
Input
Literal
Observation
Observation Types
weight - grammes
measure - ml, drops
annotate - text
temperature - K, °C
Future Questions
Whether to have many subclasses of processes or fewer with annotations
How to depict destructive processes
How to depict taking lots of samples
What is the observation/process boundary? e.g. MRI scan
Combechem
30 January 2004
gvh, hrm, gms
The Southampton Semantic Laboratory Electronic Journal

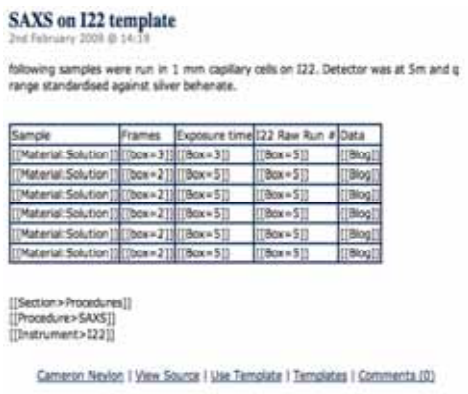
Sequence of process

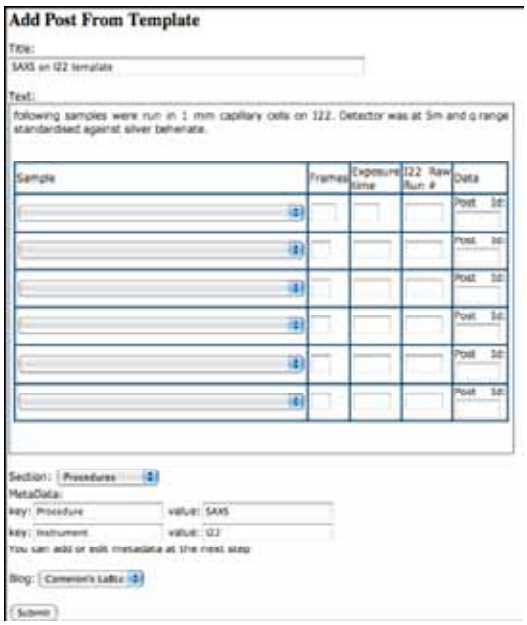


Implementation of e-lab book

- One post, one item approach
- Procedures can be tracked back to starting materials (or forwards to products) by clicking through
- Aim to ultimately be interpretable by machine and human



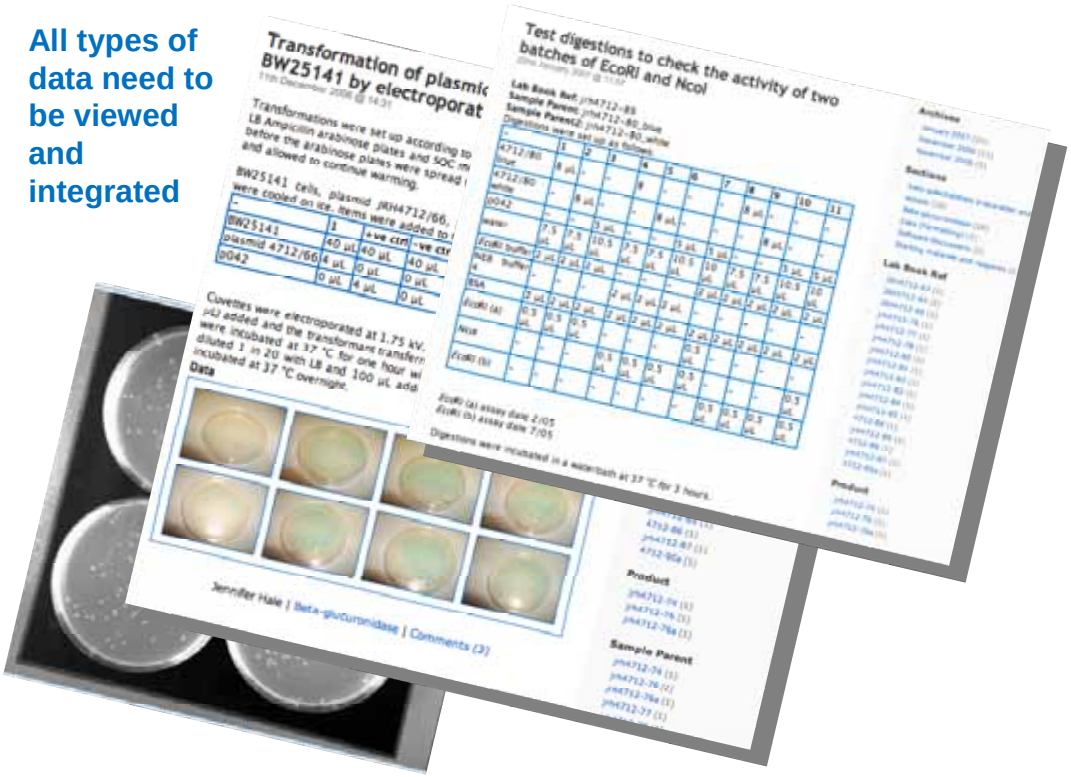




Filtered lists
drop down menu

Provides a simple approach to creating and using semantics.
Full ontology development enabled via the Blog Factory

All types of data need to be viewed and integrated



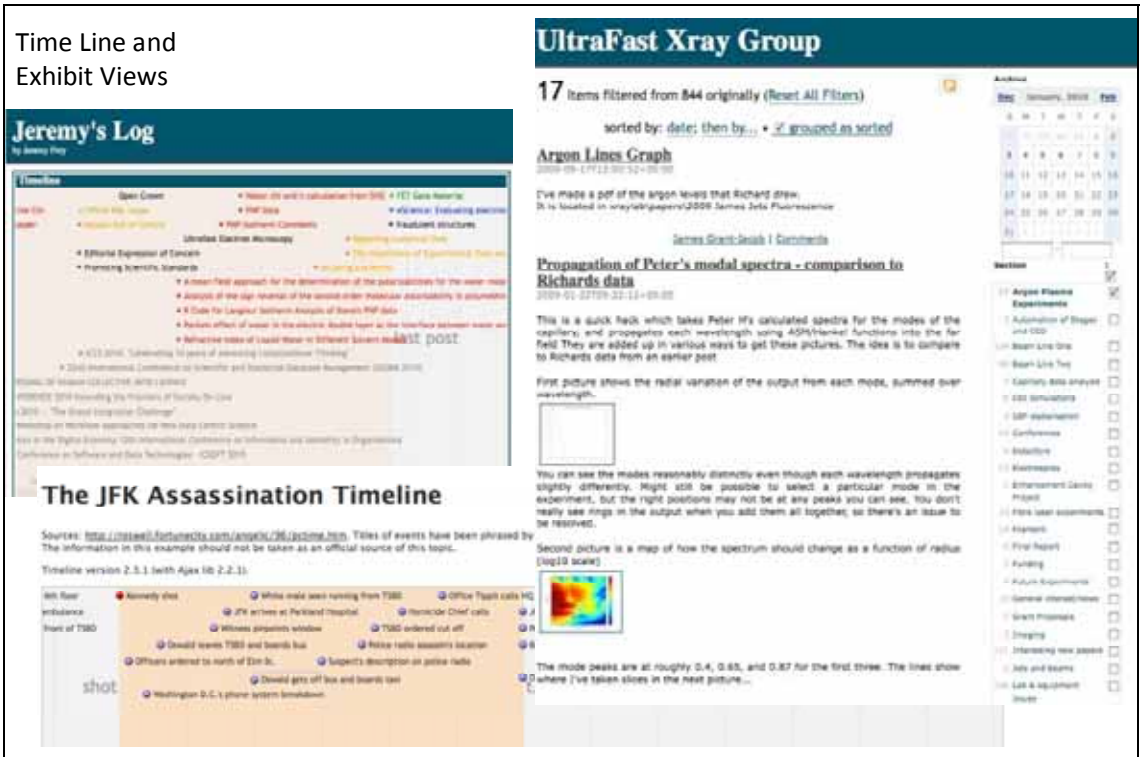
Core of Self describing data

- Store of data that can be viewed and manipulated in different ways
- User interfaces to suite user and occasion

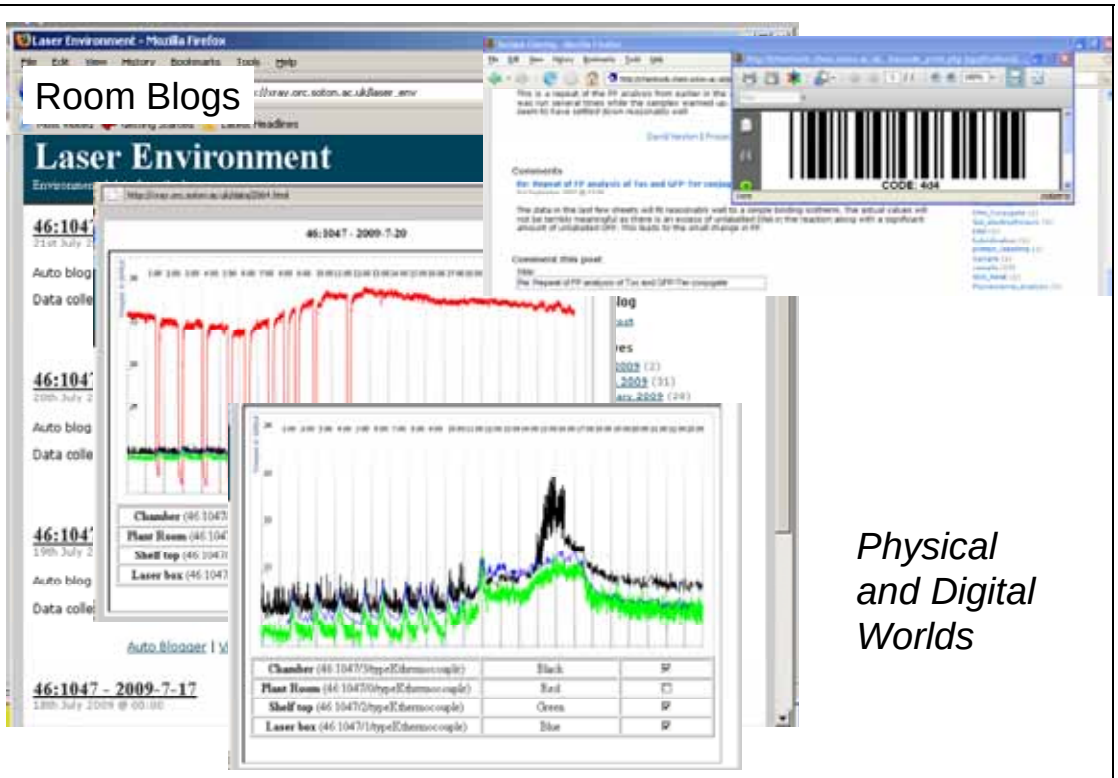
"He's charged with expressing contempt for data-processing."

He is charged with expressing contempt for meta-data

Time Line and Exhibit Views



Simile – Semantic Interoperability of Metadata and Information in unLike Environments



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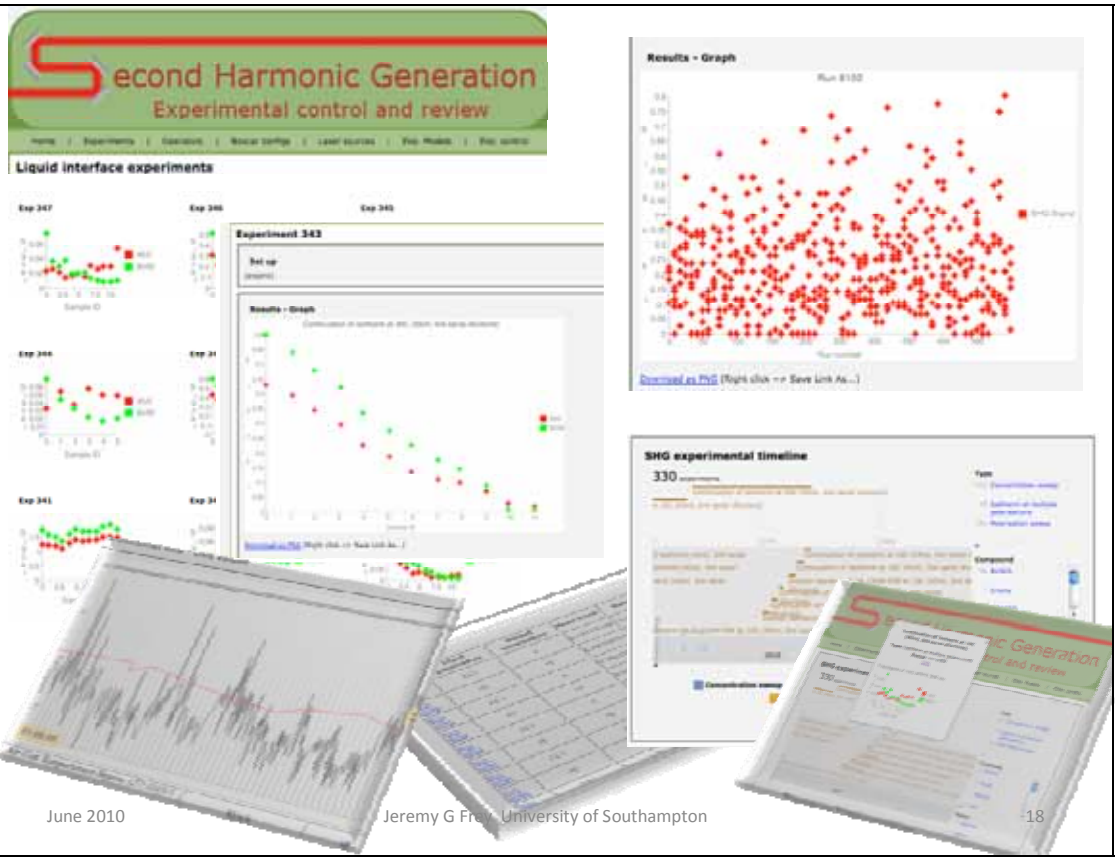

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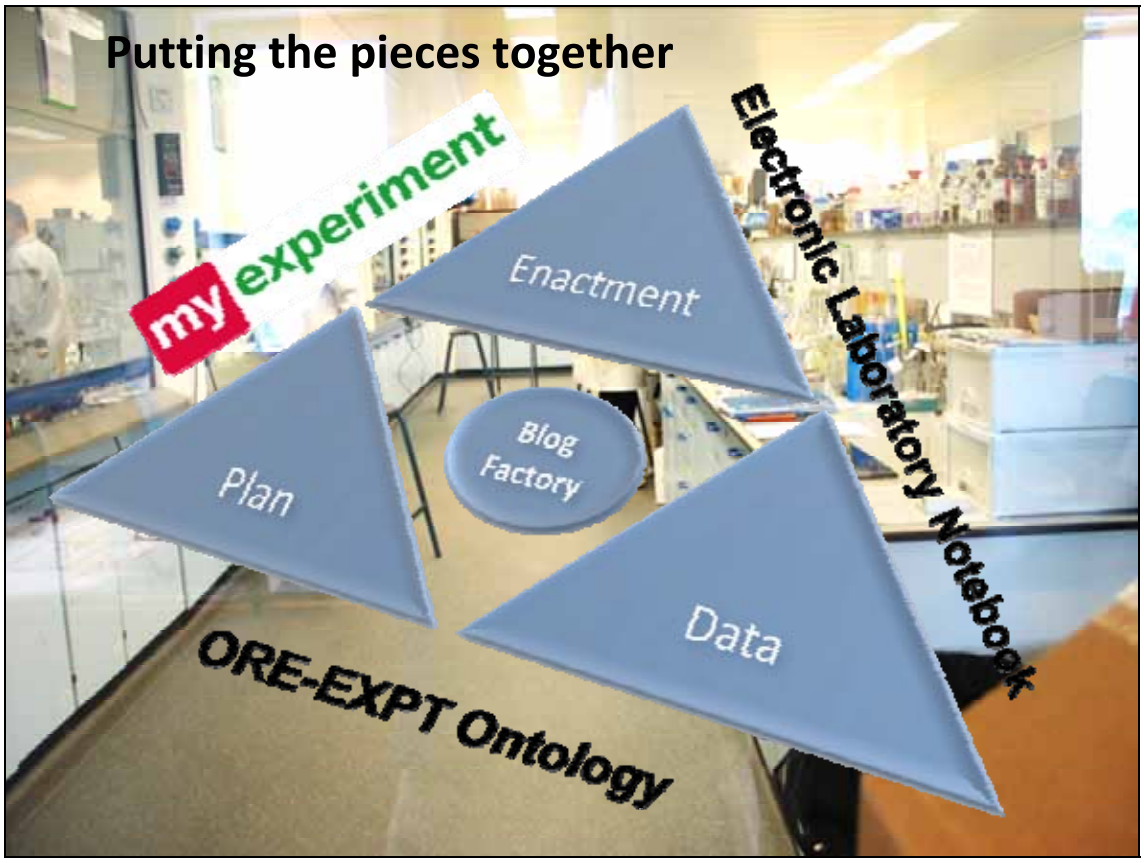
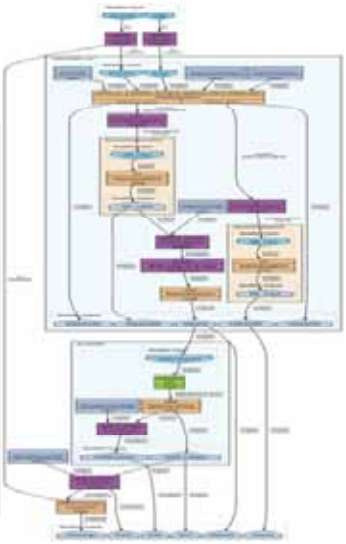


my experiment

- "Facebook for Scientists" ...but different to Facebook!
- A repository of research methods
- A community social network of people and things
- A Social Virtual Research Environment
- Open source (BSD) Ruby on Rails application with HTML, REST and SPARQL interfaces
- Machinery for coordinating the execution of (scientific) services and linking together (scientific) resources

Taverna Workflows

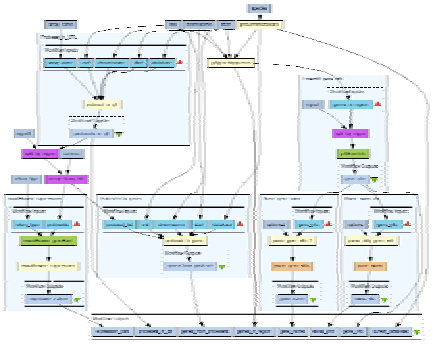


- The era of Service Oriented Applications
- Repetitive and mundane boring stuff made easier

Reuse, Recycling, Repurposing

- Paul writes workflows for identifying biological pathways implicated in resistance to Trypanosomiasis in cattle
- Paul meets Jo. Jo is investigating Whipworm in mouse.
- Jo reuses one of Paul's workflow without change.
- Jo identifies the biological pathways involved in sex dependence in the mouse model, believed to be involved in the ability of mice to expel the parasite.
- Previously a manual two year study by Jo had failed to do this.

Sharing pieces of process



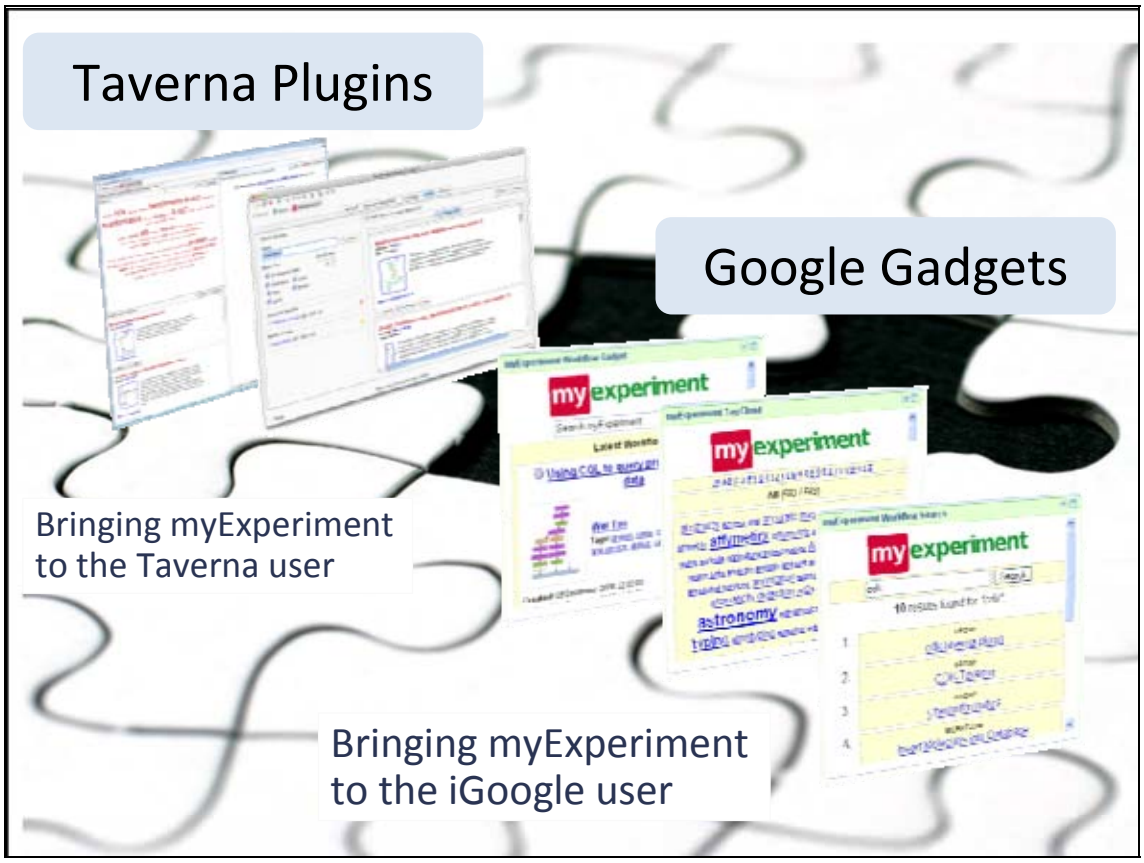
http://www.mygrid.org.uk/tools/taverna/

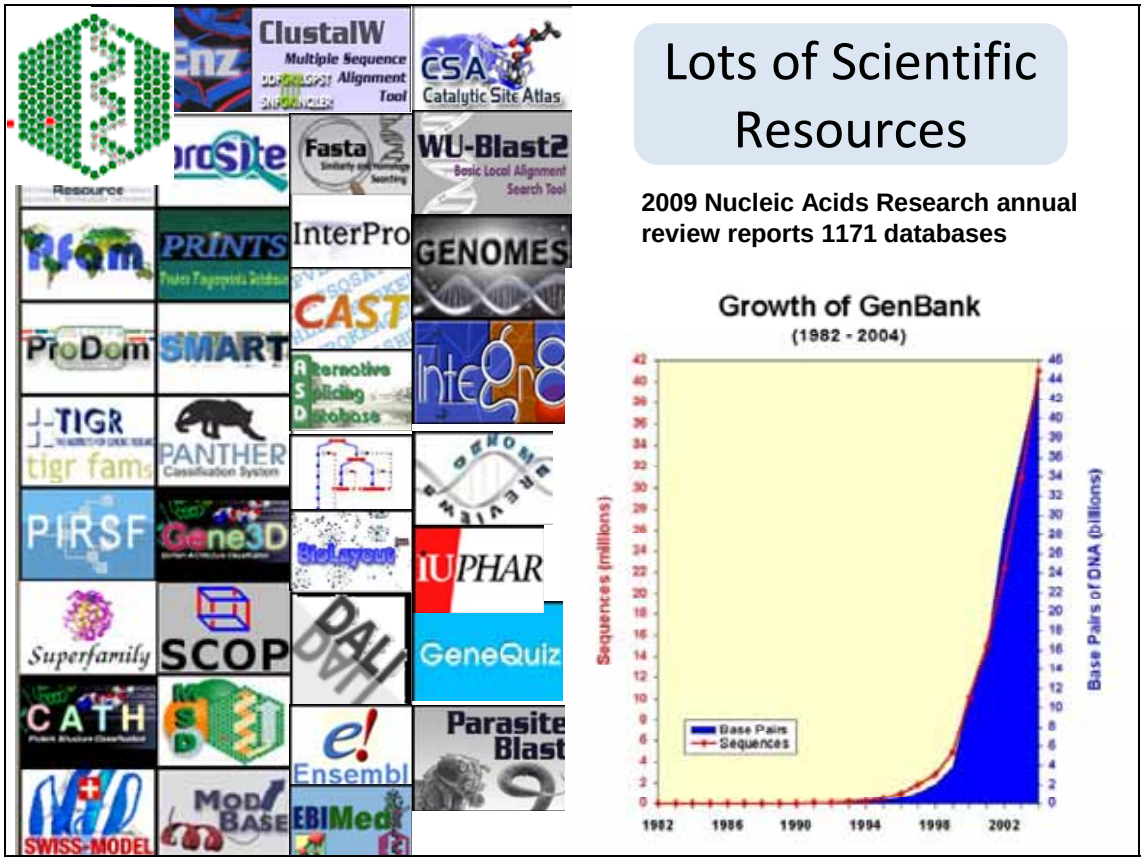
http://www.microsoft.com/mscorp/tc/trident.mspx

Monitor the formation of an aromatic imine by HMR and CMR in CDCl3

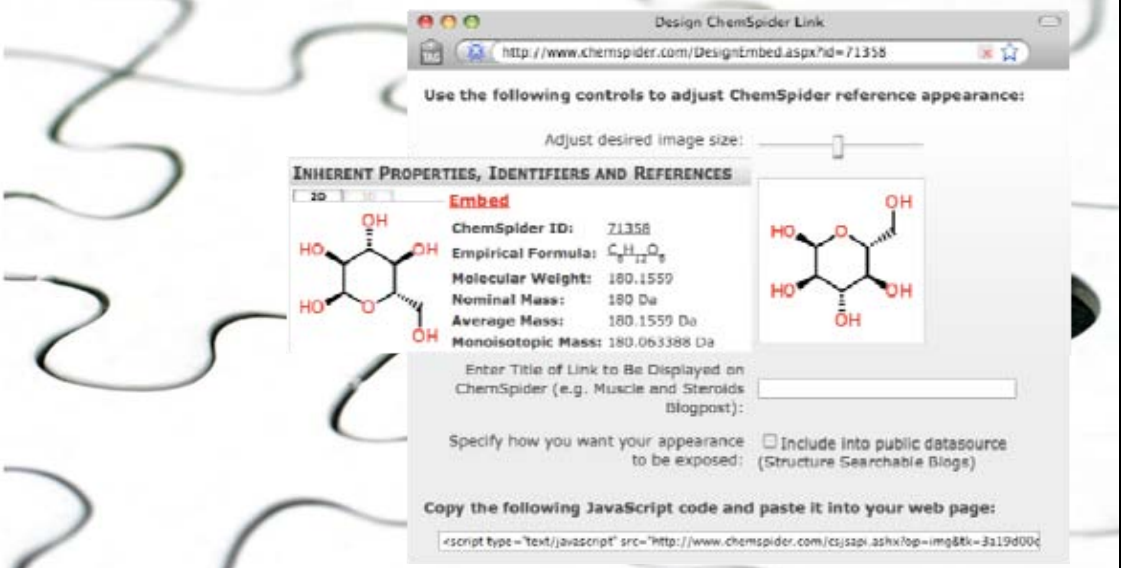
1. Make up separate 1 mL of 1M solutions of piperonal and 5-methylfurfurylamine in CDCl3.
2. Take HMRs and CMRs of the aldehyde and amine. Use 5 sec relaxation time and acquire for about 15 mins for the CMR. This should be good enough based on James' results at 1M in methanol.
3. Combine the two solutions into a 1 dram vial and shake vigorously then transfer to an NMR tube.
4. Take HMR at 5, 10 and 20 minutes after mixing.
5. Take CMR at 25 min after mixing.
6. Take HMR at 40 min after mixing.
7. Take CMR at 45 min after mixing.
8. Take HMR at 80 mins after mixing.
9. Take CMR at 85 mins after mixing.
10. Continue to take NMRs after interval doubling until no more change is observed.

http://usefulchem.wikispaces.com/page/code/EXPLAN001

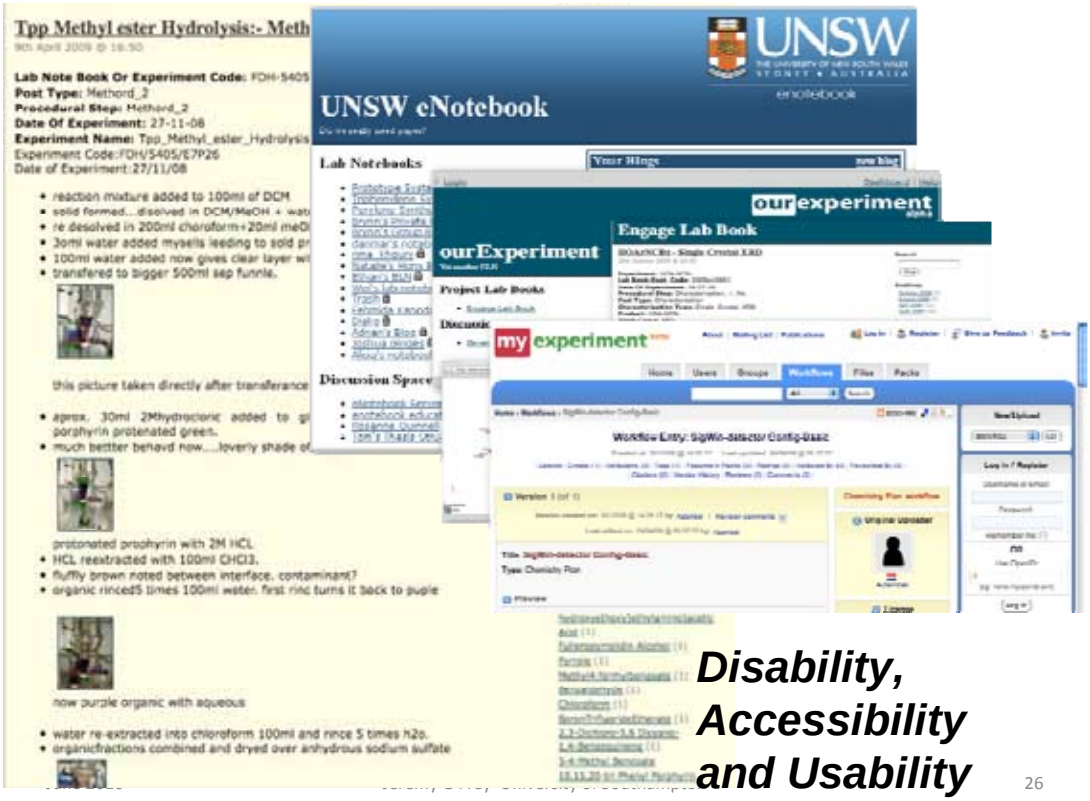

Taverna Plugins
Google Gadgets
Bringing myExperiment to the Taverna user
Bringing myExperiment to the iGoogle user
myexperiment


Lots of Scientific Resources
2009 Nucleic Acids Research annual review reports 1171 databases
Growth of GenBank
(1982 - 2004)
Sequences (millions)
Base Pairs of DNA (billions)
Base Pairs
Sequences
1982
1986
1990
1994
1998
2002
ClustalW
CSA
Catalytic Site Atlas
Fasta
WU-Blast2
InterPro
PRINTS
GENOMES
CAST
ProDom
SMART
TIGR
PANTHER
PIRSF
Gene3D
IUPHAR
Superfamily
SCOP
GeneQuiz
CATH
Parasite Blast
Ensembl
SWISS-MODEL
ModBase
EBIMed

Web services for Chemistry like those for Bioinformatics



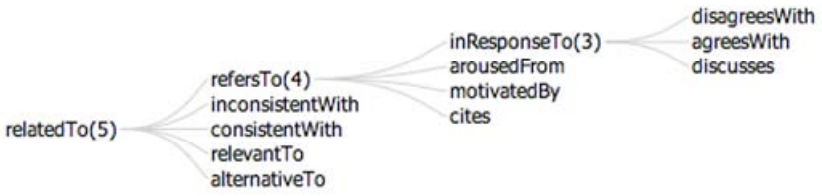
Chemspider now with the RSC



Disability, Accessibility and Usability

Impact on researchers

- Higher Quality Record
- Easier Collaboration
- Improved planning
- Improved discussions
- Efficiency gain in production of presentations/reports
- Change the nature of Professor/Student interactions



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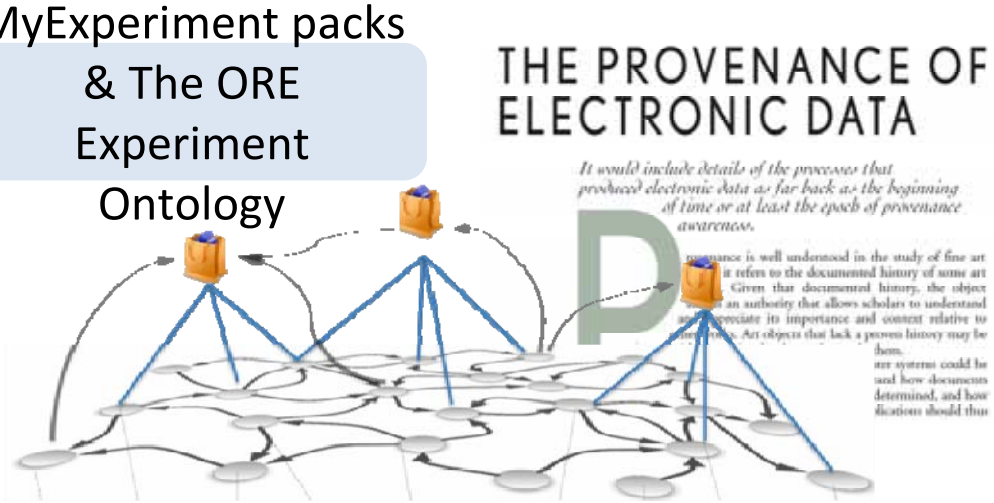
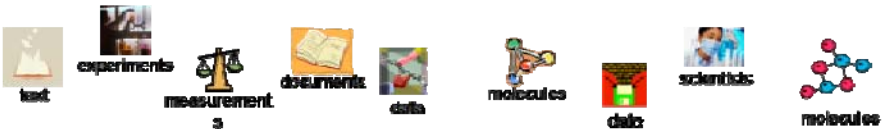
MyExperiment packs & The ORE Experiment Ontology





Open Archives Initiative Object Reuse and Exchange


Projects
A great many people who were and are part of the following projects
CombeChem
Smart Labs (Tea and Blog)
MyGrid
MyExperiment
Engage
*see web page for full list of people involved
Universities of Southampton and Manchester
CombeChem
e-Research South
EPSRC
engage
Microsoft
omii-uk
Software Solutions for e-Research
JISC
June 2010
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Virtual Workflow Tools to Enhance the Research Process

Lee-Ann Coleman

Virtual workflow tools to enhance the research process

Lee-Ann Coleman PhD
Head of Science, Technology & Medicine

Lee-Ann.Coleman@bl.uk

BRITISH LIBRARY

I do my research…

Making the connection…

Connecting researchers with relevant information and data, wherever it is and wherever they are

- Engage with and understand researchers and their research
- Identify ways in which we can add value
- Enhance ease of discovery and access
- Develop new ways to explore and use digital information
- Offer targeted services relevant to specific research domains

Provide:

Choice; Quality Assurance; Sustainable Discovery; Innovation

Times are changing – our users are changing

Producing new types of research outputs – digital and complex

Becoming more data-centric – content from diverse sources

Increasingly co-operative and distributed

Interact with the information – reviewing, rating, sharing

Need to stay up to date – articles, researchers increases ~3% pa

Role for libraries in finding, managing and preserving information

4

Evidence for the way researchers use information

Search/Discover

40% lack of knowledge
65% too many sources
87% literature from multiple sources
52% not effective at keeping

Gather

73% need help to store and manage
61% challenge to acquire data/paper
39% less than adequate methods for organizing materials

Create

39% not effective at keeping notes
82% rely on recommendations
76% share ideas through email
59% share results via hardcopy

Share

82% lack of trust to give data/paper
40% have unique collections
60% main obstacle is distance
56% not effective at dissemination

University of Minnesota Library, Mellon Report, 2007.

Understanding Researcher Information Use in the Environmental and Biomedical Sciences

- **Survey of 900 biomedical researchers on access to literature. Workshops and focus groups to redesign UK PubMed Central**
  They wanted integrated search, not siloes of information?
- **Focus Groups with 66 PhD Students in Bio and Env Sci across 4 UK Universities stratified by research income**
  Are early career researcher information behaviours influenced by different institutional environments?
- **In-depth case studies of patterns of information use by Life Science researchers**
  What influence does research discipline have on the patterns of information use across research teams?
- **Online discussion tracking, focus groups and interviews with 45 non-HEI users of Env Sci research information from Local and Central Government, Charities, Consultancies and Non-Governmental Organisations**
  What are the information behaviours and needs of Env Sci researchers who are not directly affiliated with UK Universities and how can we best support them?

BRITISH LIBRARY

Patterns of information use and exchange: case studies of researchers in the life sciences. *A report by RIN and the British Library 2009*

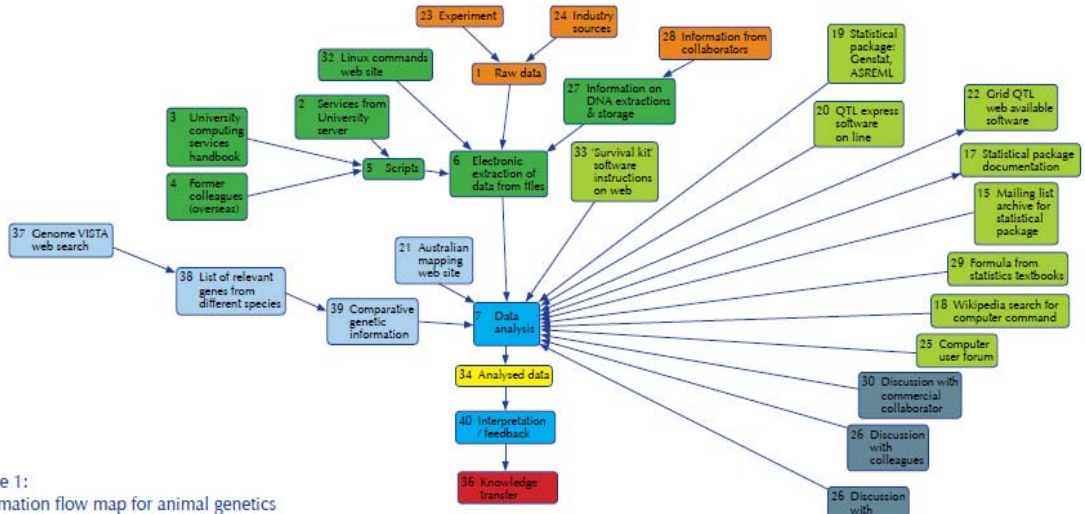


Figure 1:
Information flow map for animal genetics and animal disease genetics (case study 1)

BRITISH LIBRARY

Patterns of information use and exchange: case studies of researchers in the life sciences. *A report by RIN and the British Library 2009*

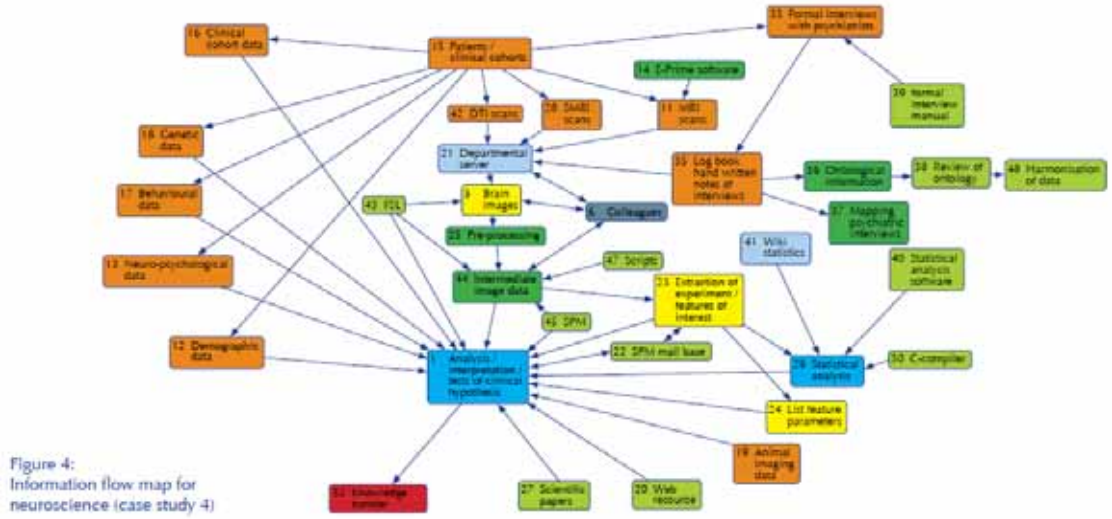


Figure 4:
Information flow map for neuroscience (case study 4)

BRITISH LIBRARY

Patterns of information use and exchange: case studies of researchers in the life sciences. *A report by RIN and the British Library 2009*

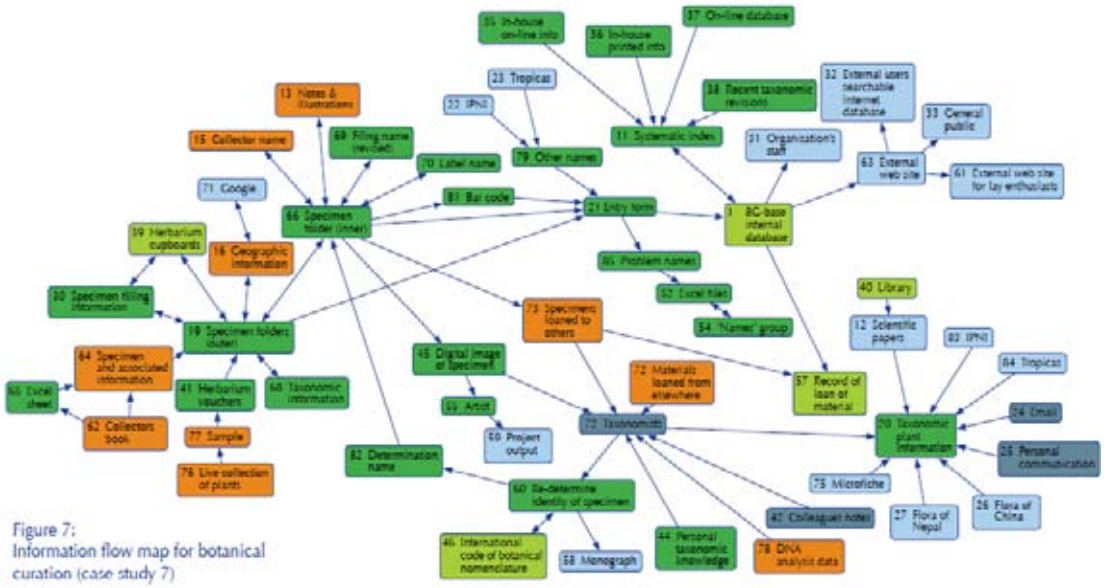
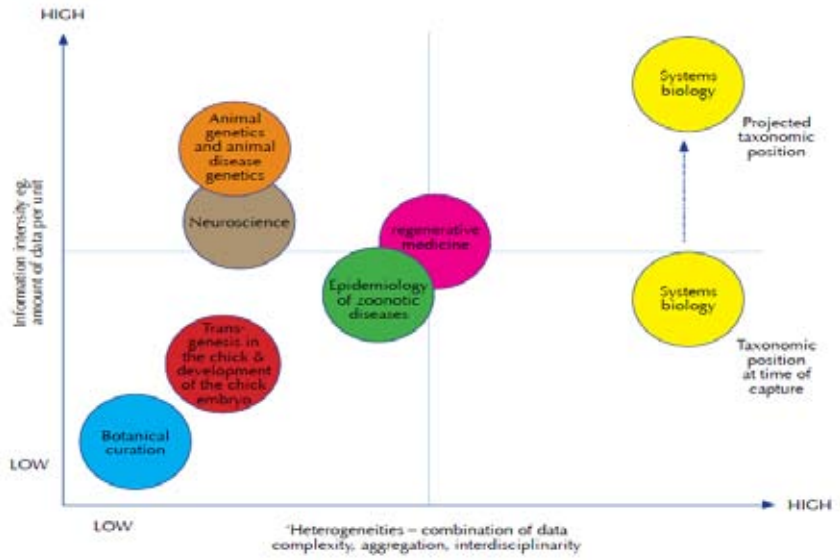


Figure 7:
Information flow map for botanical curation (case study 7)

BRITISH LIBRARY

'Impressionistic' taxonomy of case study research data



Patterns of information use and exchange: case studies of researchers in the life sciences. *A report by RIN and the British Library 2009*

BRITISH LIBRARY

Overarching themes emerging from the research

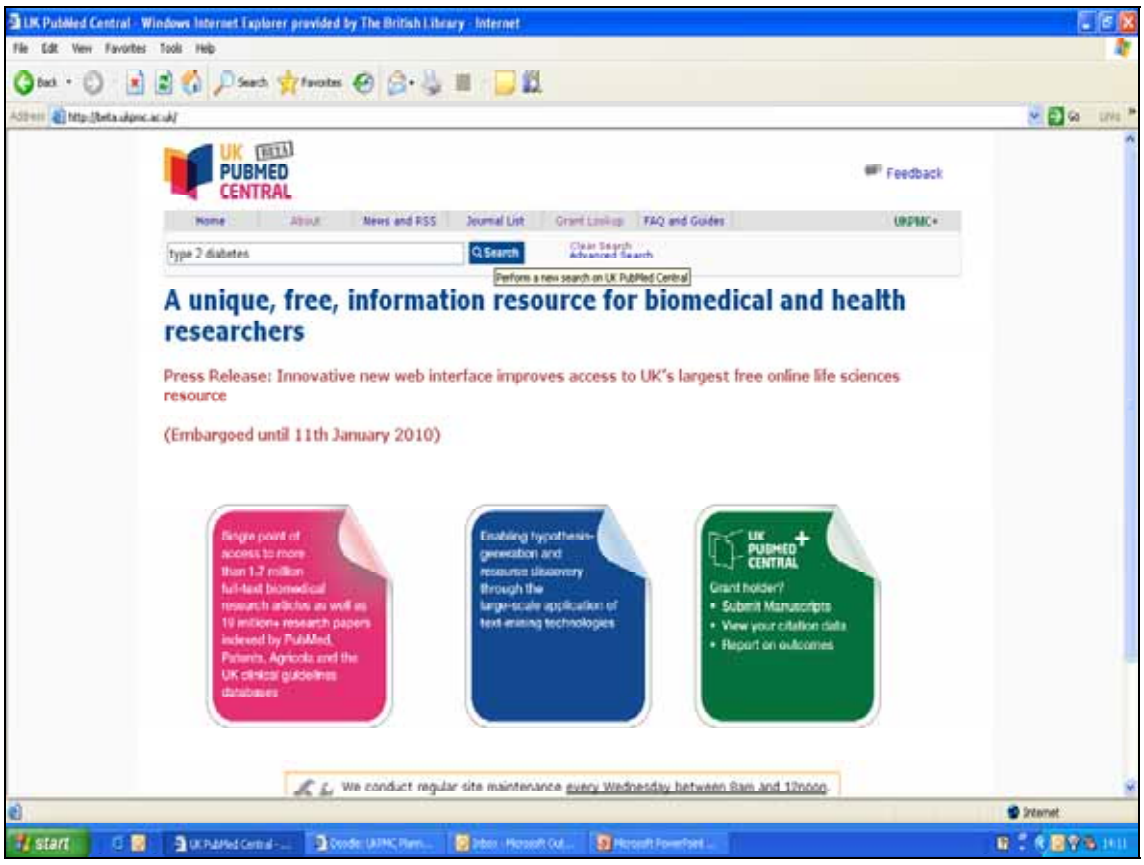
- Resource discovery - too many sources; literature from multiple sources

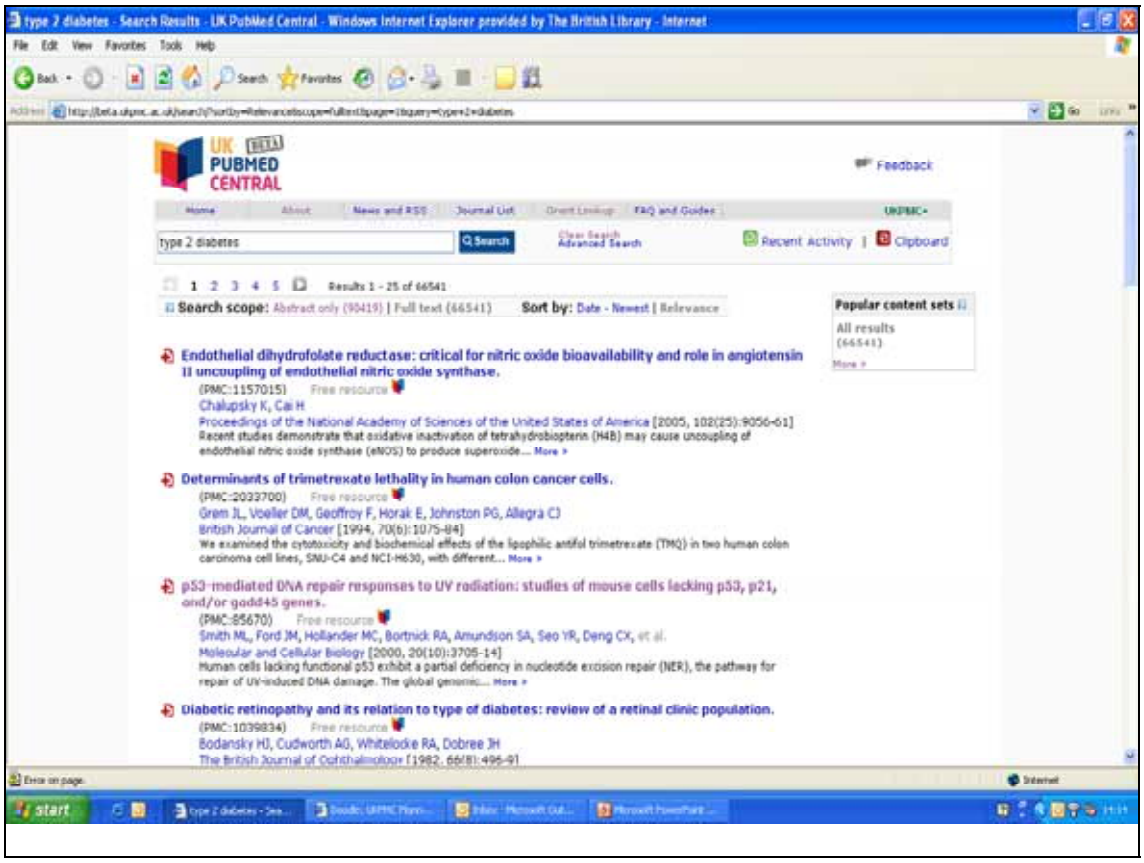
- Organising information – need help to store and manage

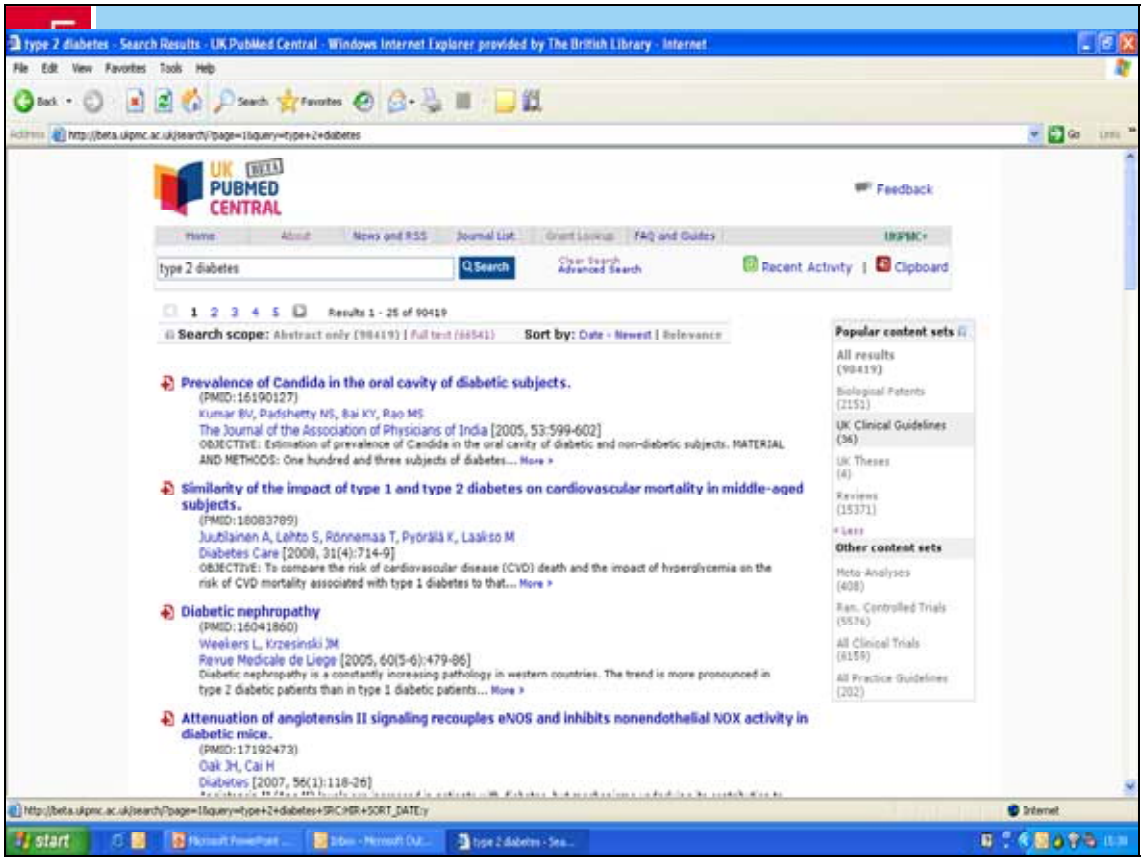
- Sharing information – 76% share ideas through e-mail; rely on recommendations
- Distributed teams - distance is a major obstacle

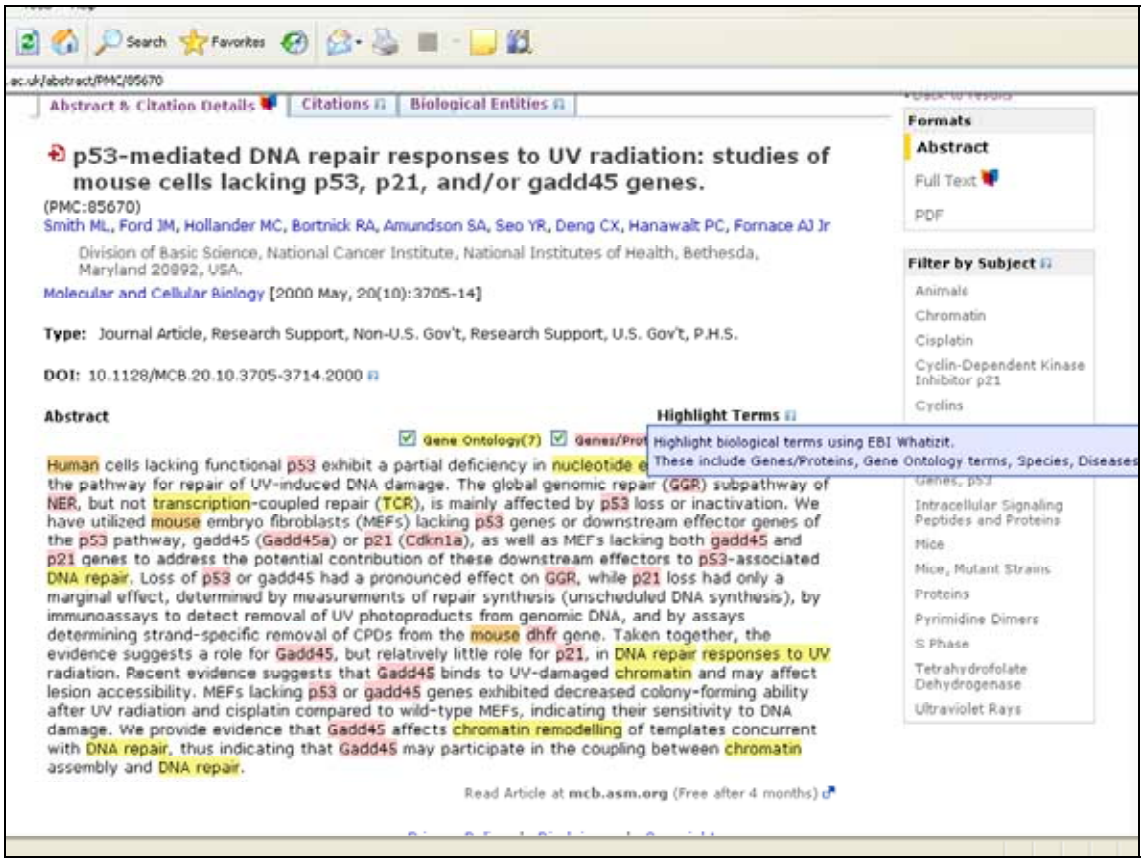
- Mandates - reporting and depositing

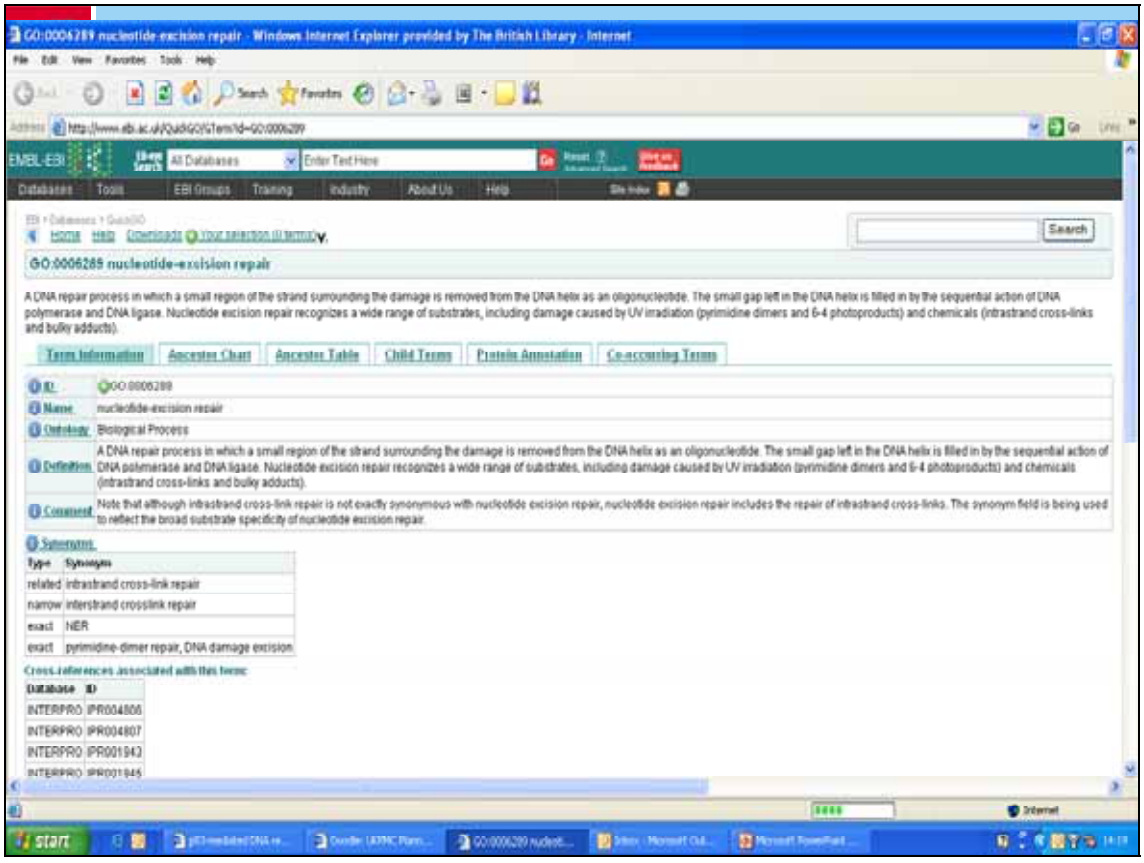
11




type 2 diabetes - Search Results - UK PubMed Central - Windows Internet Explorer provided by The British Library - Internet
UK PUBMED CENTRAL
Feedback
type 2 diabetes
Search
Recent Activity
Clipboard
Search scope: Abstract only (90419) | Full text (66541)
Sort by: Date - Newest | Relevance
Popular content sets
All results (66541)
Endothelial dihydrofolate reductase: critical for nitric oxide bioavailability and role in angiotensin II uncoupling of endothelial nitric oxide synthase.
Determinants of trimetrexate lethality in human colon cancer cells.
p53-mediated DNA repair responses to UV radiation: studies of mouse cells lacking p53, p21, and/or gadd45 genes.
Diabetic retinopathy and its relation to type of diabetes: review of a retinal clinic population.

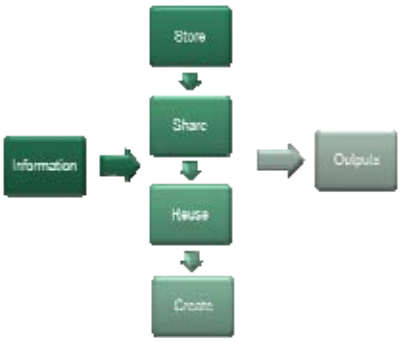

type 2 diabetes - Search Results - UK PubMed Central - Windows Internet Explorer provided by The British Library - Internet
UK PUBMED CENTRAL
Feedback
type 2 diabetes
Search
Recent Activity
Clipboard
Search scope: Abstract only (90419) | Full text (66541)
Sort by: Date - Newest | Relevance
Popular content sets
All results (90419)
UK Clinical Guidelines (36)
Other content sets
Prevalence of Candida in the oral cavity of diabetic subjects.
Similarity of the impact of type 1 and type 2 diabetes on cardiovascular mortality in middle-aged subjects.
Diabetic nephropathy
Attenuation of angiotensin II signaling recouples eNOS and inhibits nonendothelial NOX activity in diabetic mice.


Abstract & Citation Details
Citations
Biological Entities
p53-mediated DNA repair responses to UV radiation: studies of mouse cells lacking p53, p21, and/or gadd45 genes.
(PMC:85670)
Smith ML, Ford JM, Hollander MC, Bortnick RA, Amundson SA, Seo YR, Deng CX, Hanawalt PC, Fornace AJ Jr
Division of Basic Science, National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20892, USA.
Molecular and Cellular Biology [2000 May, 20(10):3705-14]
Type: Journal Article, Research Support, Non-U.S. Gov't, Research Support, U.S. Gov't, P.H.S.
DOI: 10.1128/MCB.20.10.3705-3714.2000
Abstract
Highlight Terms
Highlight biological terms using EBI Whatizit.
These include Genes/Proteins, Gene Ontology terms, Species, Diseases
Human cells lacking functional p53 exhibit a partial deficiency in nucleotide e
the pathway for repair of UV-induced DNA damage. The global genomic repair (GGR) subpathway of NER, but not transcription-coupled repair (TCR), is mainly affected by p53 loss or inactivation. We have utilized mouse embryo fibroblasts (MEFs) lacking p53 genes or downstream effector genes of the p53 pathway, gadd45 (Gadd45a) or p21 (Cdkn1a), as well as MEFs lacking both gadd45 and p21 genes to address the potential contribution of these downstream effectors to p53-associated DNA repair. Loss of p53 or gadd45 had a pronounced effect on GGR, while p21 loss had only a marginal effect, determined by measurements of repair synthesis (unscheduled DNA synthesis), by immunoassays to detect removal of UV photoproducts from genomic DNA, and by assays determining strand-specific removal of CPDs from the mouse dhfr gene. Taken together, the evidence suggests a role for Gadd45, but relatively little role for p21, in DNA repair responses to UV radiation. Recent evidence suggests that Gadd45 binds to UV-damaged chromatin and may affect lesion accessibility. MEFs lacking p53 or gadd45 genes exhibited decreased colony-forming ability after UV radiation and cisplatin compared to wild-type MEFs, indicating their sensitivity to DNA damage. We provide evidence that Gadd45 affects chromatin remodelling of templates concurrent with DNA repair, thus indicating that Gadd45 may participate in the coupling between chromatin assembly and DNA repair.
Read Article at mcb.asm.org (Free after 4 months)
Formats
Abstract
Full Text
PDF
Filter by Subject
Animals
Chromatin
Cisplatin
Cyclin-Dependent Kinase Inhibitor p21
Cyclins
Intracellular Signaling Peptides and Proteins
Mice
Mice, Mutant Strains
Proteins
Pyrimidine Dimers
S Phase
Tetrahydrofolate Dehydrogenase
Ultraviolet Rays


GO:0006289 nucleotide-excision repair - Windows Internet Explorer provided by The British Library - Internet
EMBL-EBI
GO:0006289 nucleotide-excision repair
A DNA repair process in which a small region of the strand surrounding the damage is removed from the DNA helix as an oligonucleotide. The small gap left in the DNA helix is filled in by the sequential action of DNA polymerase and DNA ligase. Nucleotide excision repair recognizes a wide range of substrates, including damage caused by UV irradiation (pyrimidine dimers and 6-4 photoproducts) and chemicals (intrastrand cross-links and bulky adducts).
Term Information
Ancestor Chart
Ancestor Table
Child Terms
Protein Annotation
Co-occurring Terms
ID GO:0006289
Name nucleotide-excision repair
Ontology Biological Process
Definition A DNA repair process in which a small region of the strand surrounding the damage is removed from the DNA helix as an oligonucleotide. The small gap left in the DNA helix is filled in by the sequential action of DNA polymerase and DNA ligase. Nucleotide excision repair recognizes a wide range of substrates, including damage caused by UV irradiation (pyrimidine dimers and 6-4 photoproducts) and chemicals (intrastrand cross-links and bulky adducts).
Comment Note that although intrastrand cross-link repair is not exactly synonymous with nucleotide excision repair, nucleotide excision repair includes the repair of intrastrand cross-links. The synonym field is being used to reflect the broad substrate specificity of nucleotide excision repair.
Synonyms
Type Synonym
related intrastrand cross-link repair
narrow interstrand crosslink repair
exact NER
exact pyrimidine-dimer repair, DNA damage excision
Cross-references associated with this term
Database ID
INTERPRO IPR004806
INTERPRO IPR004807
INTERPRO IPR001943
INTERPRO IPR001945

Research Information Centre – the research lifecycle

- Supports full research life-cycle
- Accessible by web browser
- Configured for biosciences but flexible
- Designed for collaboration and to manage information flow



- Based on Microsoft's Sharepoint product
- Developed with Microsoft External Research Team
- Beta tested by 25 bioscience research teams (academia & commercial) in UK & US

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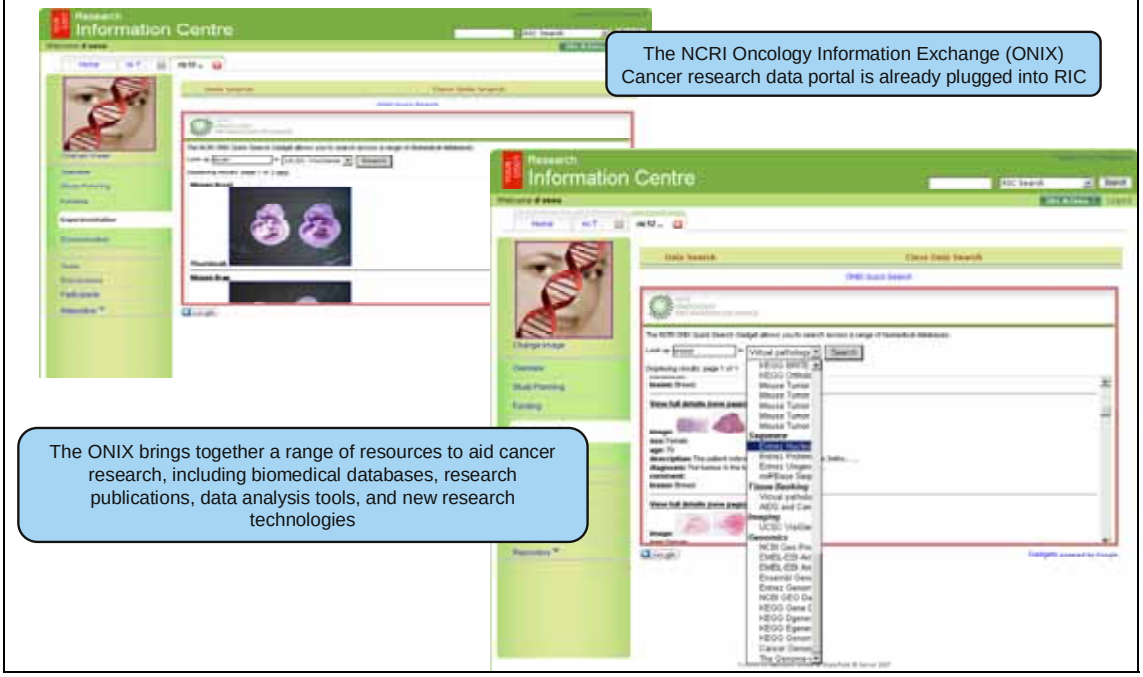
Personalised home page

RIC Experimentation Tool



User evaluation

"I was a **bit sceptical** *about the 'research lifecycle' concept when you first mentioned it in your email,* **but having seen it in the context of the RIC I really liked it.** *It is a sensible framework for organising the sorts of information that you use around a research project." [researcher: neuropharmacology].*

Can see potential for the system being **a great resource for researchers working together at different locations.** *Security must be ensured; researchers will not upload information unless security is guaranteed [researcher: oncology]*

The RIC **needs to be pre-populated** *with key resources pertinent to the researcher's domain. The current sample set is generic to biomedicine, but more specifics are required to make it a useful tool [e-research, clinical researcher]*

If RIC is to be accepted quickly it needs to offer tools etc that people are already familiar with and **won't require too much learning** *[researcher: cell biology]*

Key messages

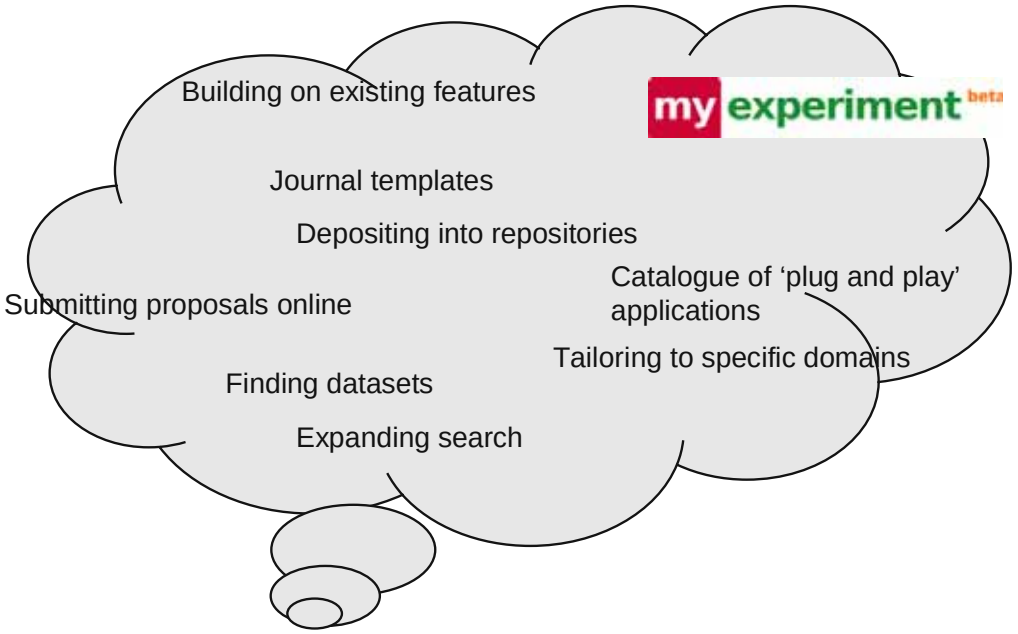
- Security
- Service must be intuitive
- Pre-populate with useful resources but let me add others
- Search must lead to access to content
- Web 2.0 – what's that?
- I won't use it but my postdocs would…

'Spin-offs' - Research management

- Need to get researchers on board – hence RIC is researcher-focused
- Information could be derived either actively or passively
- Information can be provided throughout the lifecycle

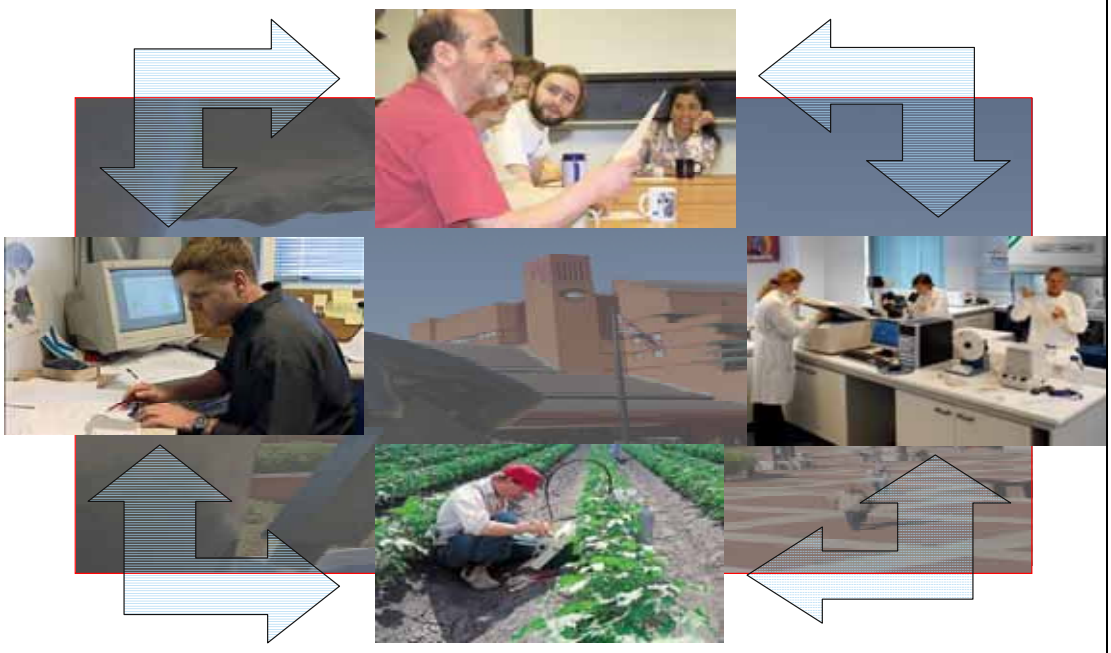
22

In the pipeline…



24

I do my research…



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Thanks to:

Stephen Andrews
Allan Sudlow
Simon Hughes
Karen Walshe
Sarah Kemmitt

Innovations in Multimedia Search and Retrieval

Behrooz Chitsaz

Microsoft Research

Innovations in multimedia search and retrieval

ICSTI 2010, Helsinki Finland
June 10, 2010

Behrooz Chitsaz
Director, IP Strategy
Microsoft Research
behroozc@microsoft.com

Frank Seide
Lead Researcher
Microsoft Research
fseide@microsoft.com

Kit Thambiratnam
Researcher
Microsoft Research
kit@microsoft.com

Microsoft Research

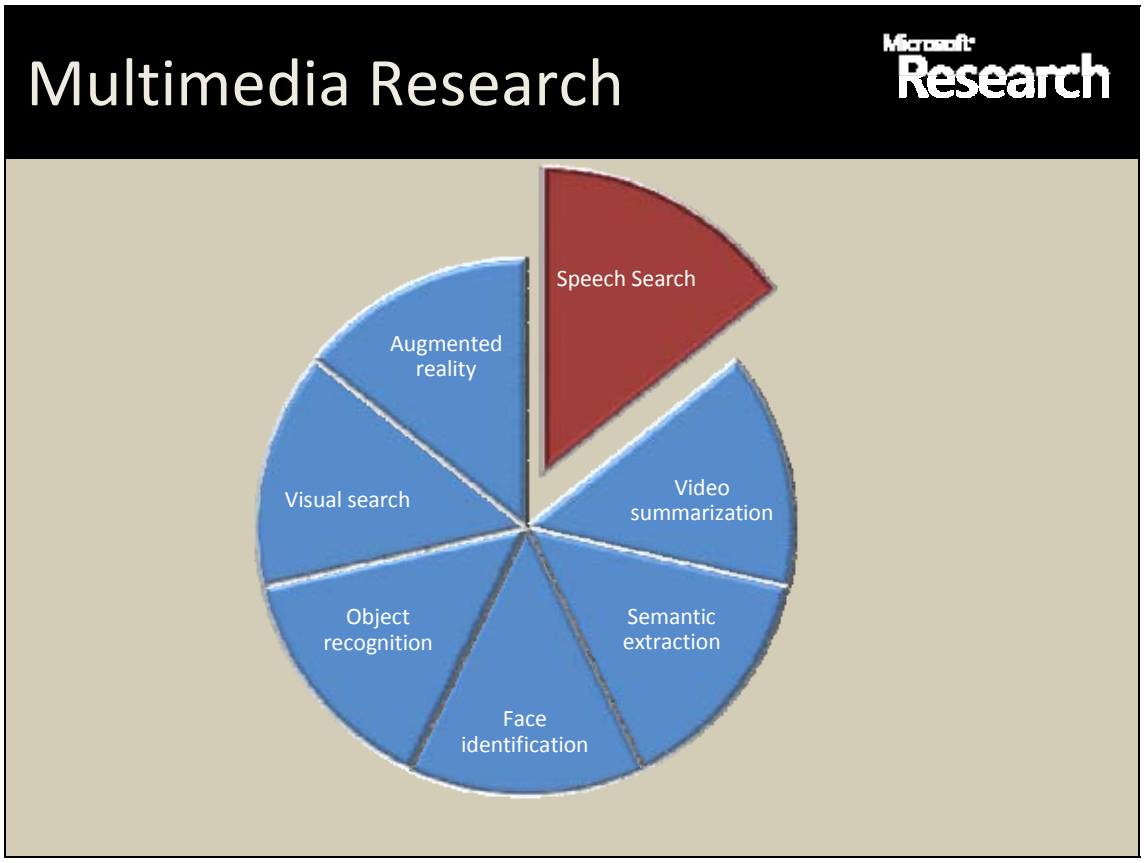
Microsoft Research

Windows 7 Office 2010

- Division established in 1991
- 900+ Researchers in 2010
- 50+ areas of computing
- Open Research culture
- Impact on most Microsoft products

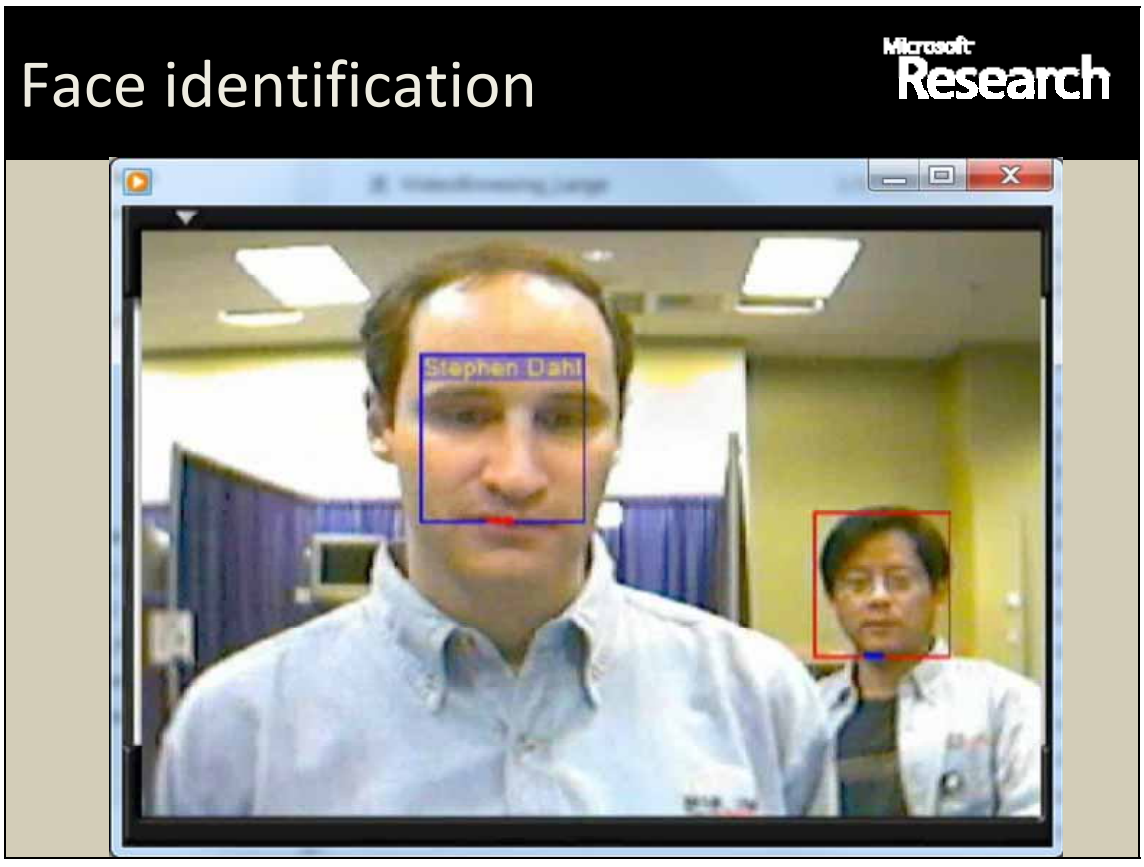
SharePoint XBOX 360 bing

Microsoft Research


Multimedia Research
Microsoft Research
Speech Search
Video summarization
Semantic extraction
Face identification
Object recognition
Visual search
Augmented reality


Video summarization
Microsoft Research
Pleneptica


Semantic extraction
Microsoft Research
Filter
Ball in the left court
Still : 0.00
Offense (to Left): 164.00
Ball in the left court: 301.00
Layup (Left court): 436.00
Shot (Left court): 484.00
Layup (Left court): 526.00
Ball in the left court: 555.00
End of Clip (1)
Layup (Left court): 605.00
End of Clip (2)
Close-up: 644.00
Tracking (to Right): 682.00
End of Clip (3)
Close-up: 757.00
End of Clip (4)
Offense (to Right): 832.00
Ball in the right court: 921.00
Shot (Right court): 1150.00
Offense (to Left): 1223.00
Ball in the left court: 1313.00
Layup (Left court): 1439.00
End of Clip (5)
Tracking (to Right): 1472.00
End of Clip (6)
Tracking (to Right): 1556.00
Close-up: 1607.00
Paused
09:12 / 15:30
Ball in the left court
<-- Voice Volume
Exit

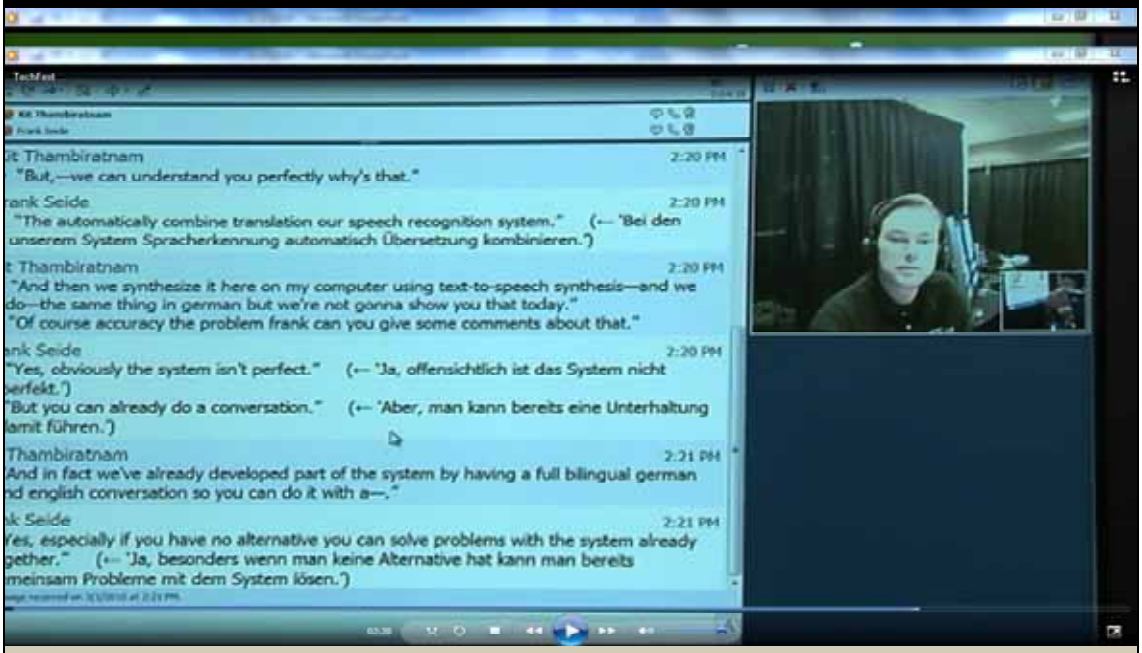

Face identification
Microsoft Research
Stephen Dahl


Object recognition
Microsoft Research
pen
watch
scissors
stapler


Augmented reality
Microsoft Research

Translating phone

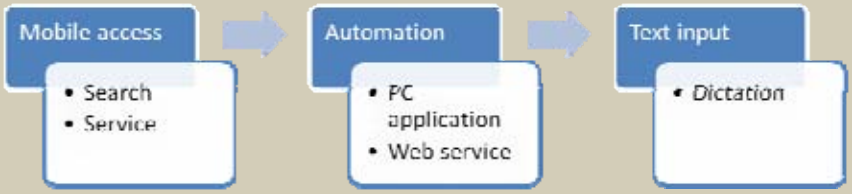
Microsoft Research



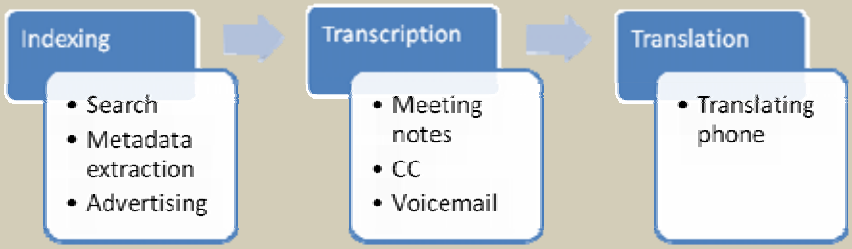
Speech Applications

Microsoft Research

- Speech as interface



- Speech as 1st class content



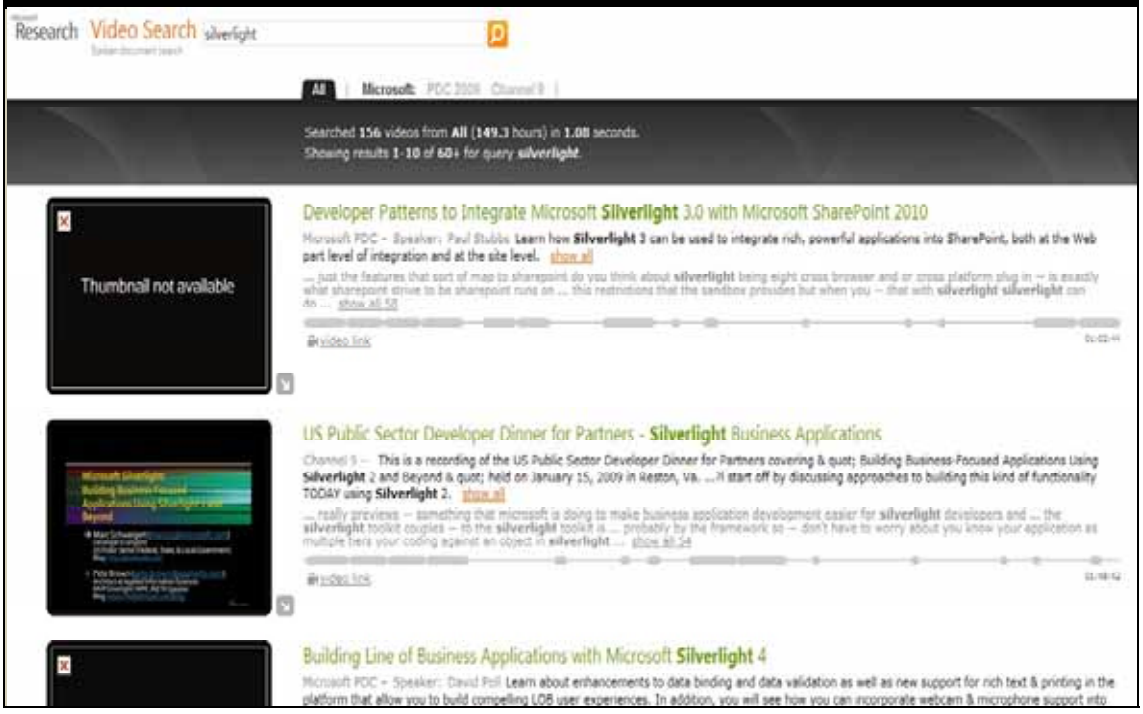
Searching Media Today

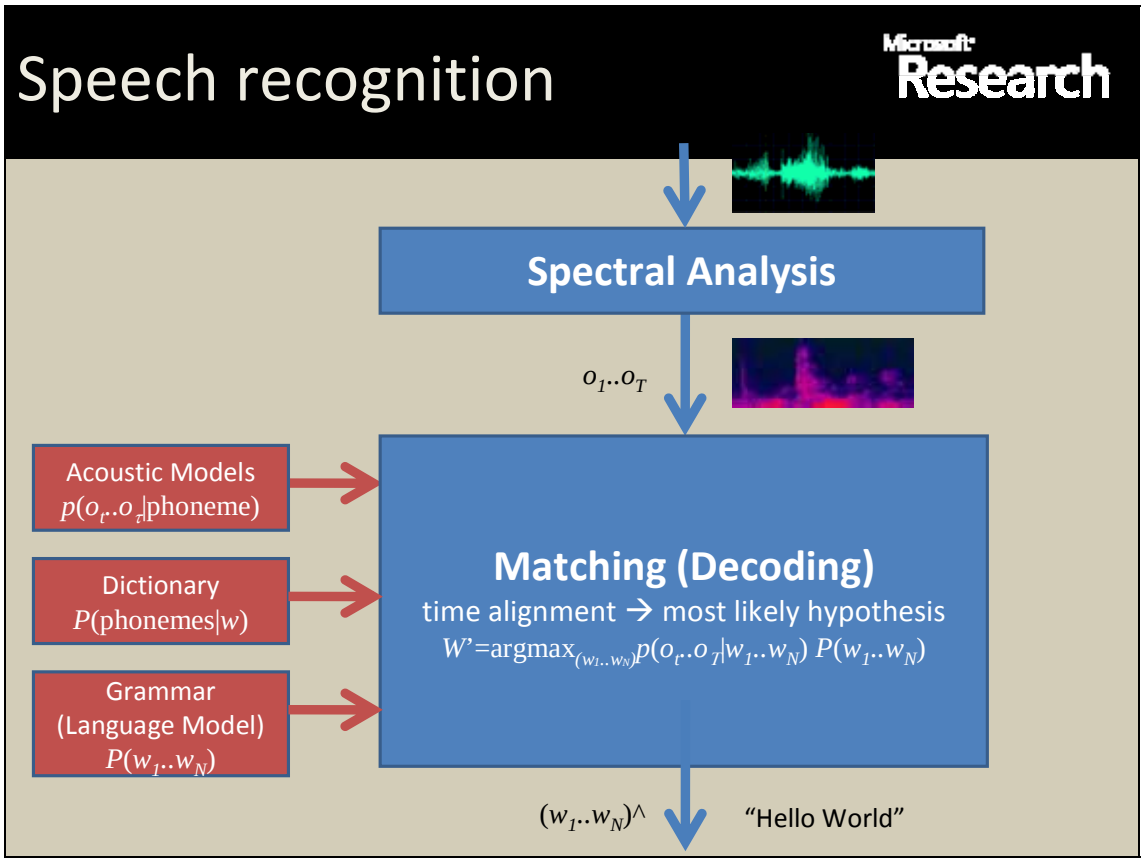
Microsoft Research

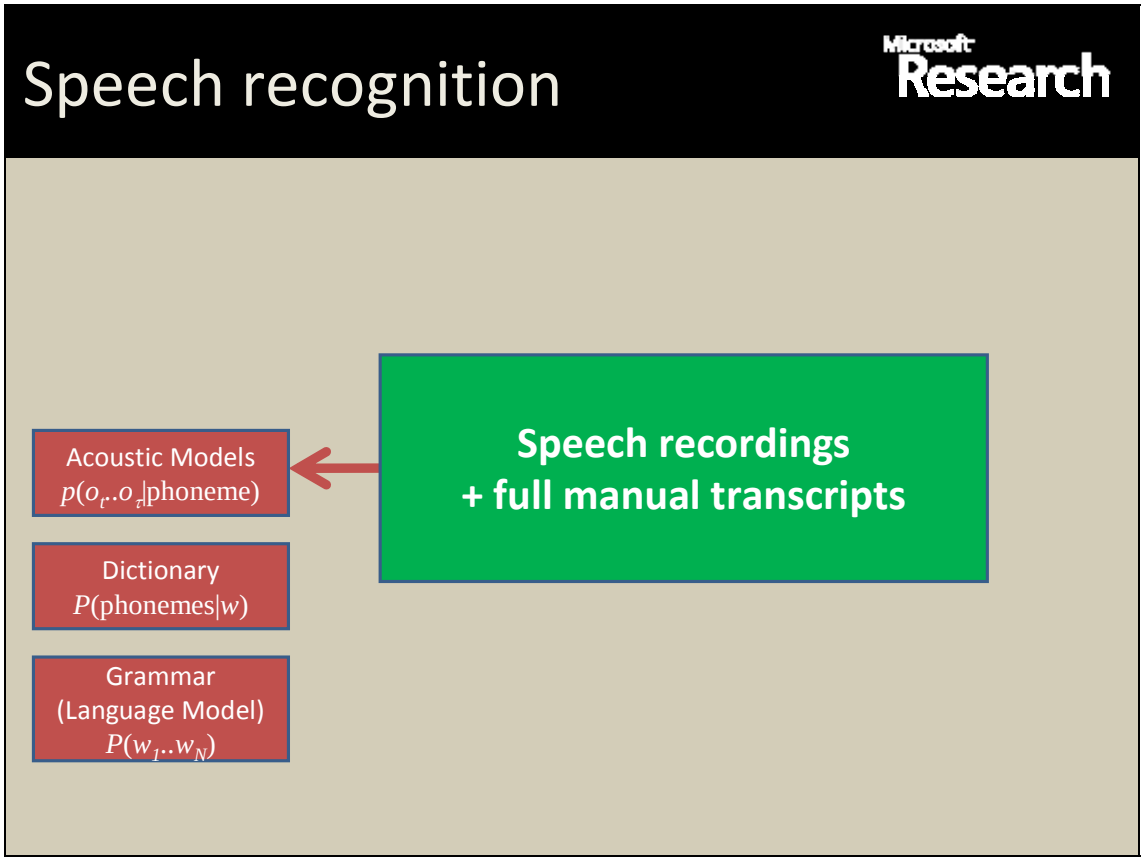
- meta-data
  - surrounding & anchor text, URL
  - top-N lists, collaborative filtering
  - editorial meta-data
- file content itself
  - keyword search in audio track using speech recognition

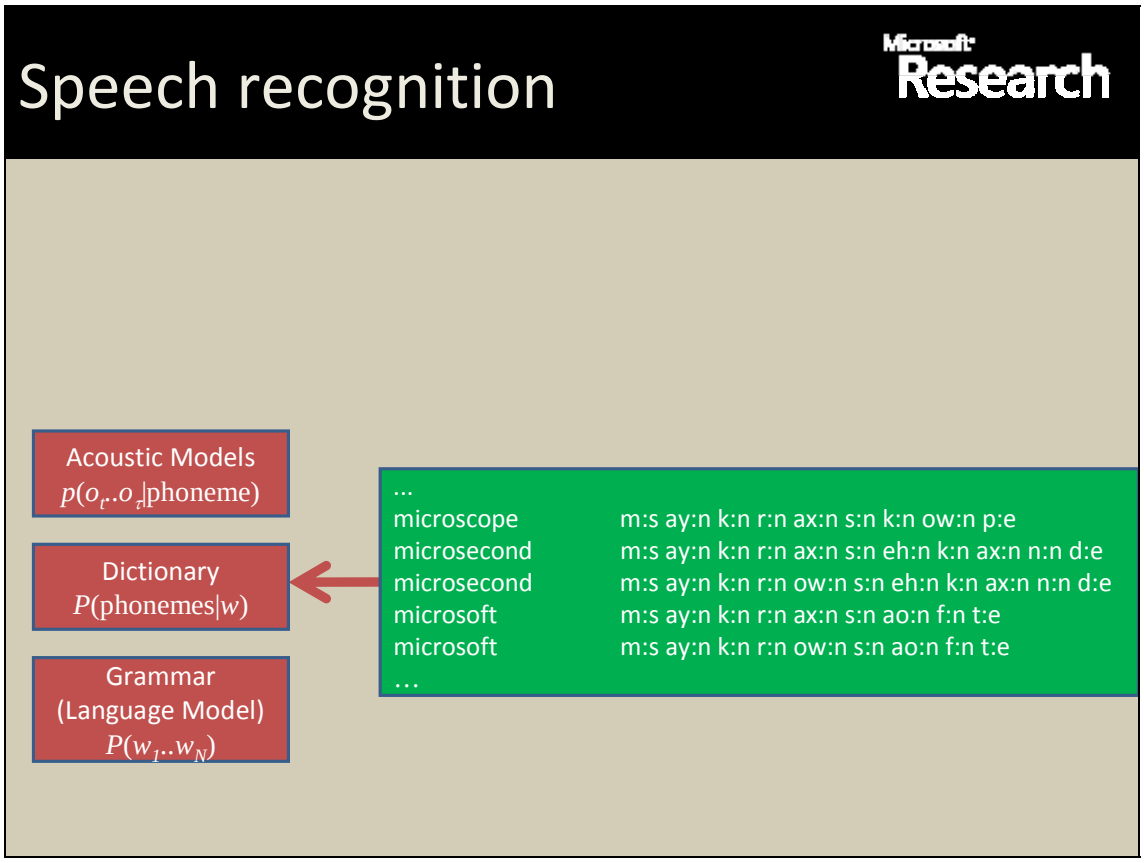
Demo

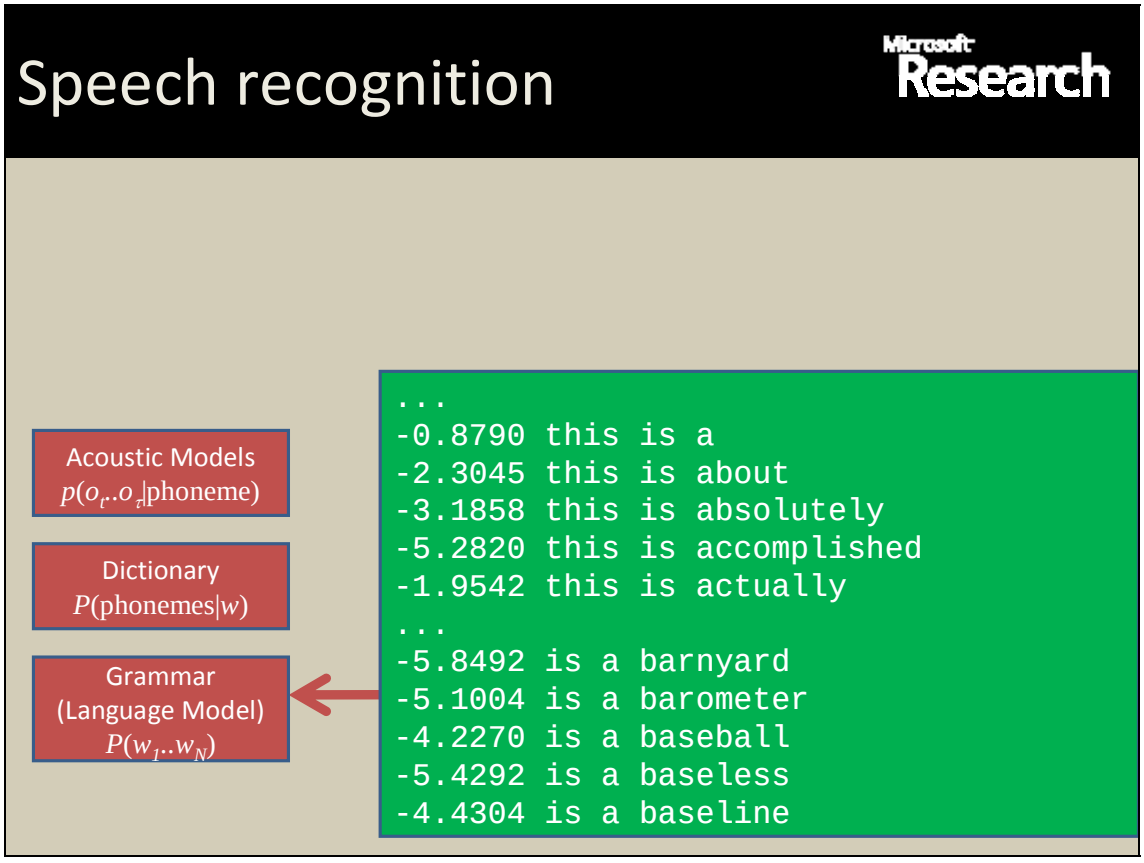
Microsoft Research




Speech recognition
Microsoft Research
Spectral Analysis
$o_1..o_T$
Acoustic Models
$p(o_t..o_t|\text{phoneme})$
Dictionary
$P(\text{phonemes}|w)$
Grammar
(Language Model)
$P(w_1..w_N)$
Matching (Decoding)
time alignment → most likely hypothesis
$W'=\text{argmax}_{(w_1..w_N)} p(o_t..o_T|w_1..w_N)\ P(w_1..w_N)$
$(w_1..w_N)^\wedge$
"Hello World"


Speech recognition
Microsoft Research
Speech recordings
+ full manual transcripts
Acoustic Models
$p(o_t..o_t|\text{phoneme})$
Dictionary
$P(\text{phonemes}|w)$
Grammar
(Language Model)
$P(w_1..w_N)$


Speech recognition
Microsoft Research
Acoustic Models
$p(o_t..o_t|\text{phoneme})$
Dictionary
$P(\text{phonemes}|w)$
Grammar
(Language Model)
$P(w_1..w_N)$
...
microscope m:s ay:n k:n r:n ax:n s:n k:n ow:n p:e
microsecond m:s ay:n k:n r:n ax:n s:n eh:n k:n ax:n n:n d:e
microsecond m:s ay:n k:n r:n ow:n s:n eh:n k:n ax:n n:n d:e
microsoft m:s ay:n k:n r:n ax:n s:n ao:n f:n t:e
microsoft m:s ay:n k:n r:n ow:n s:n ao:n f:n t:e
...


Speech recognition
Microsoft Research
Acoustic Models
$p(o_t..o_t|\text{phoneme})$
Dictionary
$P(\text{phonemes}|w)$
Grammar
(Language Model)
$P(w_1..w_N)$
...
-0.8790 this is a
-2.3045 this is about
-3.1858 this is absolutely
-5.2820 this is accomplished
-1.9542 this is actually
...
-5.8492 is a barnyard
-5.1004 is a barometer
-4.2270 is a baseball
-5.4292 is a baseless
-4.4304 is a baseline

Challenges

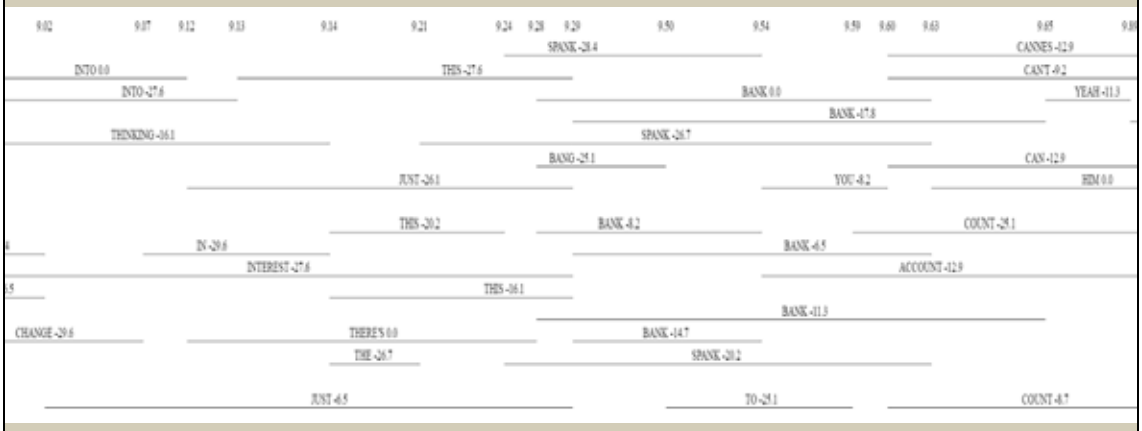
Microsoft Research

- Speaker accent
- Background noise
- Reverberation
- Vocabulary
- Language

lattice-based indexing

Microsoft Research

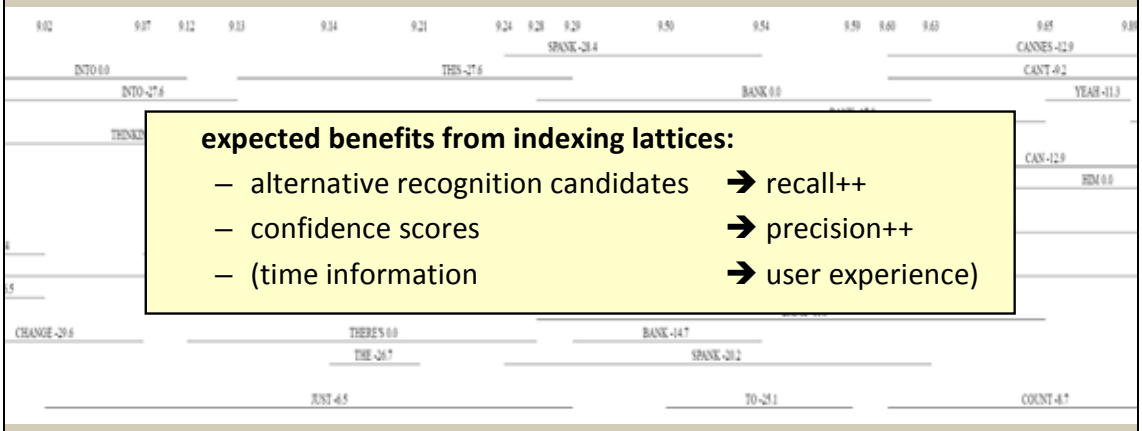
"into this bank account"



lattice-based indexing

Microsoft Research

"into this bank account"

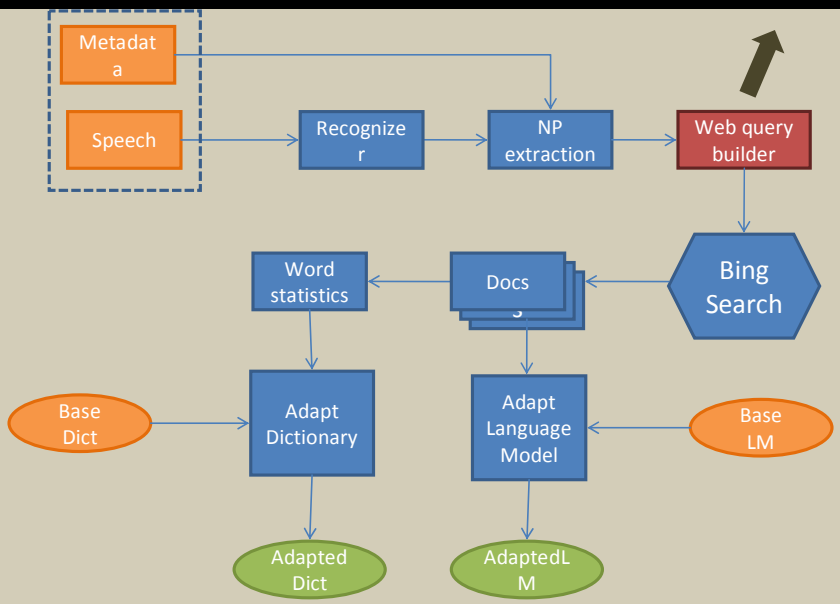


expected benefits from indexing lattices:

- alternative recognition candidates → recall++
- confidence scores → precision++
- (time information → user experience)

Vocabulary Adaptation

Microsoft Research



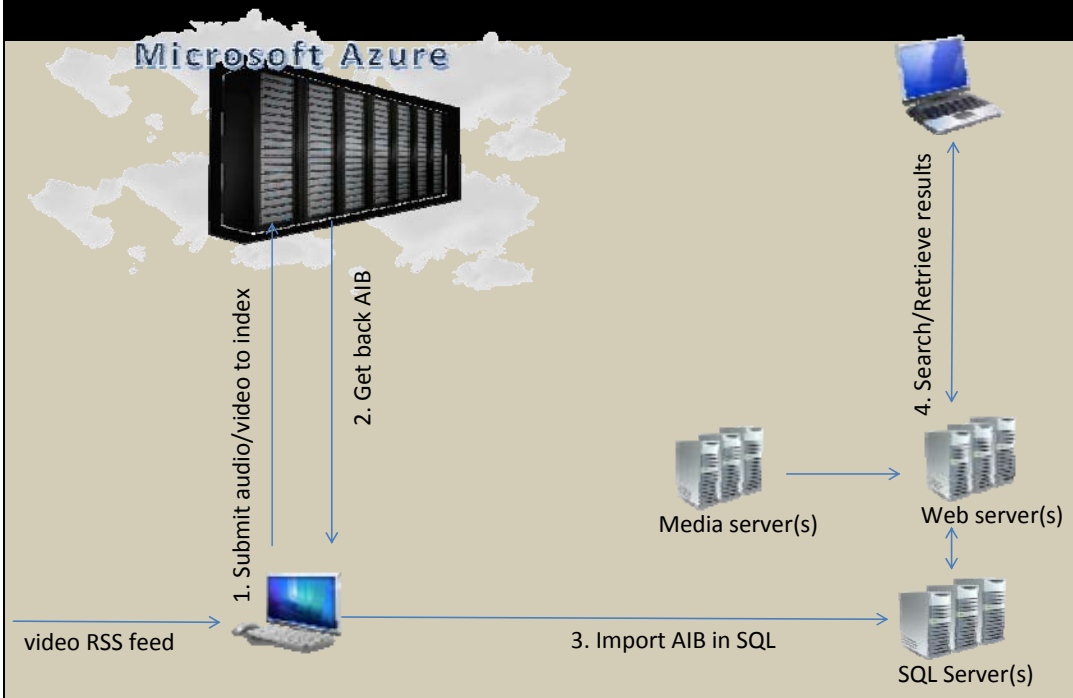
Architectural decisions

Microsoft Research

- High quality Speech Recognition is compute intensive
  - Ideal application for cloud computing (Azure) for indexing
- Media content could be anywhere
  - PowerShell tools to upload content
- Customer should be able to own search experience
- Easy integration with text search infrastructure
  - Integrate with SQL Server/Sharepoint/FAST
- Must support click to play
  - Silverlight supports accurate seeking

Azure integration

Microsoft Research



Cloud computing made simple

Microsoft Research

Windows Azure + Power shell

=

Cloud computing at your fingertips

Demo media content submission

Microsoft Research

Microsoft Research

- Tell us if you are interested
  - mmms@microsoft.com
- Visit us:
  - http://research.microsoft.com/mavis
  - http://research.microsoft.com
  - http://twitter.com/MSFTResearch
  - http://www.facebook.com/microsoftresearch#
  - http://www.flickr.com/photos/msr_redmond/

Thank you!

Microsoft Research

Thank You!

rmx10
THE NEXT WEB NOW

Microsoft
Your potential. Our passion.™

Sovereign within a Sovereign –
Library of Congress On-line:
Classification for Gateway to Web Resources?

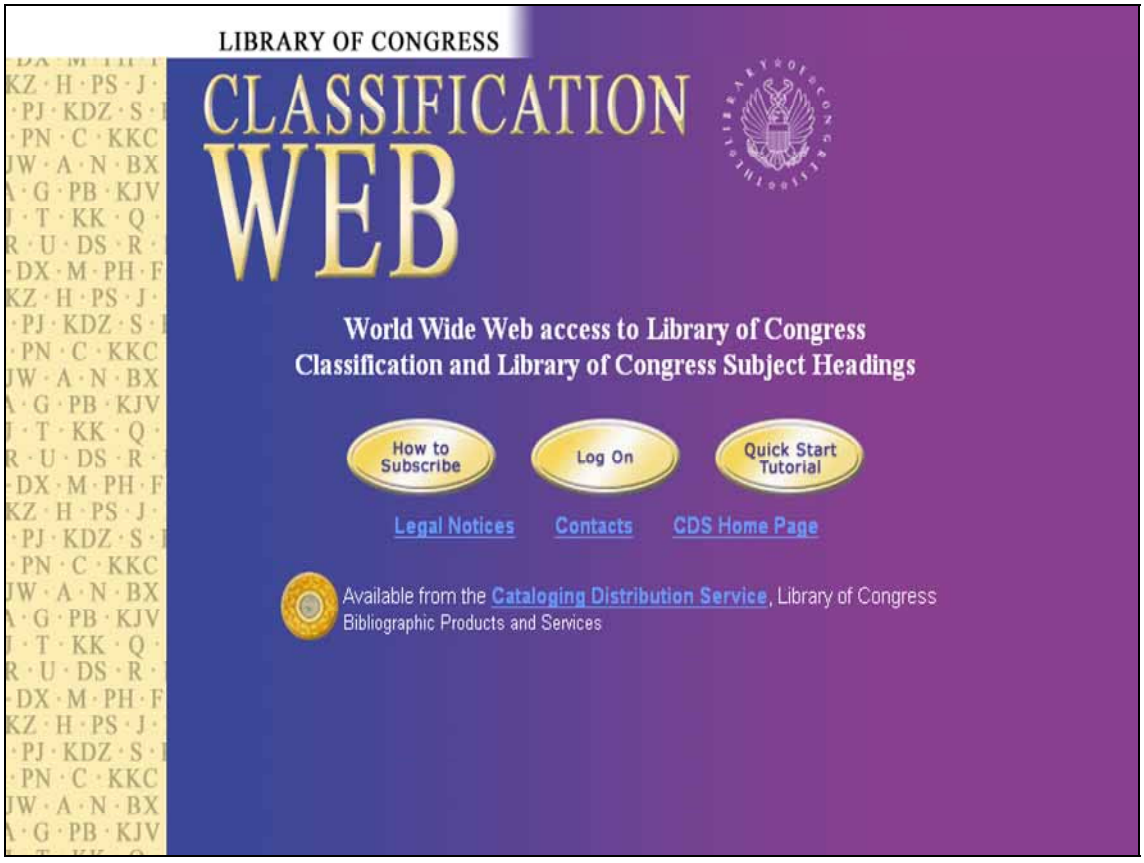
Jolande E. Goldberg

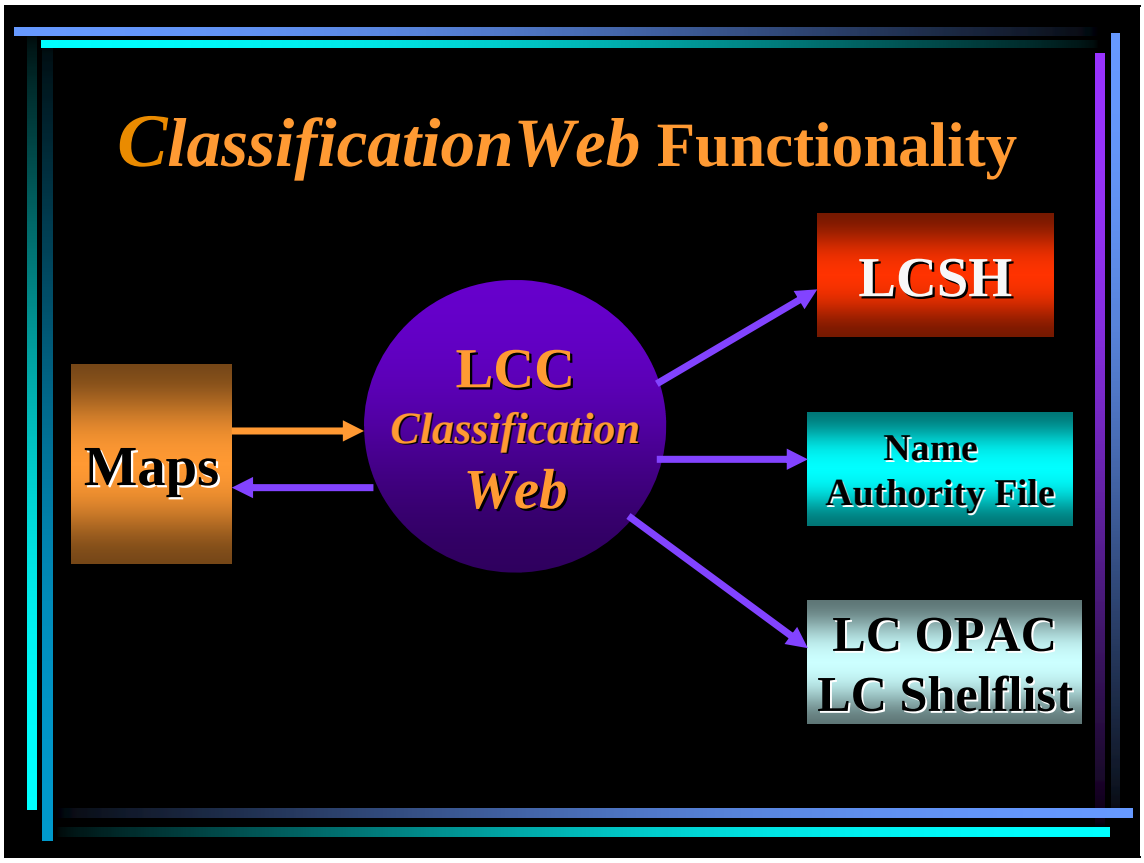
Sovereign within a Sovereign

Library of Congress on-line:
Classification for a Gateway to Web Resources?

Jolande E. Goldberg
The Library of Congress

Helsinki June 2010





CLASSIFICATION WEB — LIBRARY OF CONGRESS

KIA-KIX Law of Indigenous Peoples in the Americas -

Outline (Regions)

KIA North America
Arctic and sub-Arctic
Greenland, see KDZ
Northern Canada
Alaska

KIB-KIC Canada
Eastern Canada
KID-KIE Western Canada

KIE-KIK United States
Indian Territory

North America – Clickable Diagram

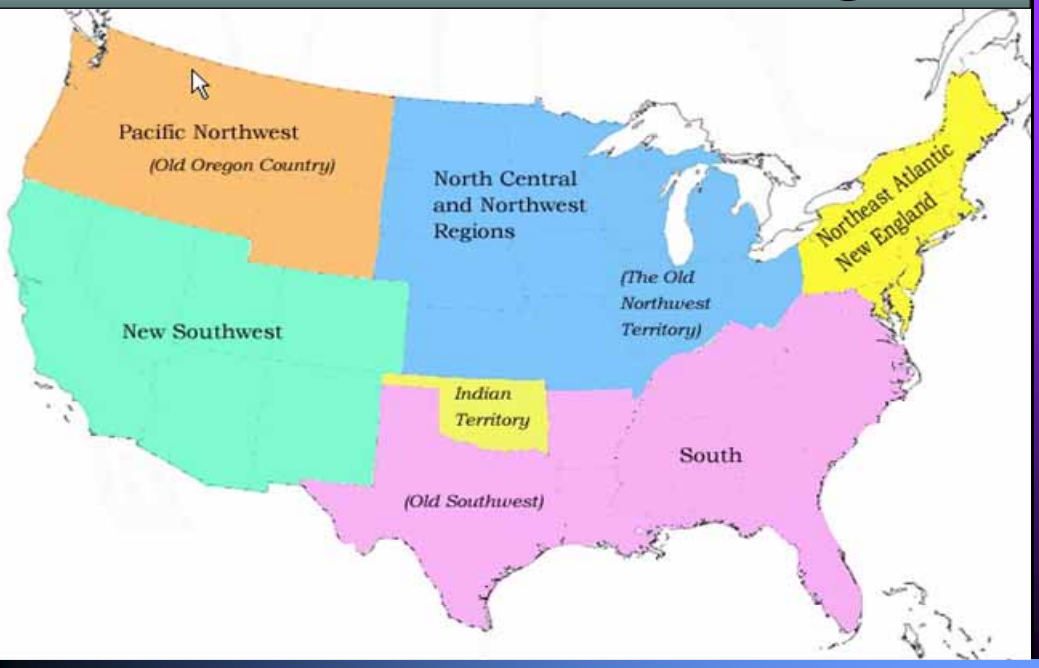
http://www.loc.gov/loc/classweb/demo/map/mmap.html

Select a region by clicking on the map

CLASSIFICATION WEB — LIBRARY OF CONGRESS

KIA-KIX	Law of Indigenous Peoples in the Americas North America
KIF	**United States**
	Electronic resource: United States Diagram
	Cf. E78.A-Z Indians of North America
	Cf. KF8201-8228 Law of the United States
	General (Comparative)
	Bibliography
KIF1	General
KIF1.G37	Laura N. Gasaway, James L. Hoover, and Dorothy Warden. American Indian Legal Materials: A Union List (1980)
KIF1.H37	Lester Hargret (1902-1962). A Bibliography ot the constitutions and laws of the American Indians (1947)
KIF1.S23	Joseph D. Sabatini. American Indian law: a bibliography of books, law review articles, and Indian periodicals (American Indian Law Center,1973)
KIF2	Guides to law collections. Tribal law gateways
	Electronic resource: National Indian Law Library
	Electronic resource: University of Oklahoma Digitization Project
KIF3	Indexes. Lists of Web sites. Web directories. Portals
	Including national and regional tribal directories
	Electronic resource: Bureau of Indian Affairs
	Electronic resource: U.S. Dept. of Justice (Tribal Justice)
	Electronic resource: Native Web directory: Law
	Electronic resource: Manataka American Indian Council
	Electronic resource: First Gov.
	Electronic resource: American Indian Library Assoc. (AILA)

United States – Clickable Diagram



CLASSIFICATION WEB — LIBRARY OF CONGRESS

KIA-KIX Law of Indigenous Peoples in the Americas
North America
KIF United States

Indian Territory. Proposed State of Sequoyah. To 1907

Including the period of partition (Indian Territory and Oklahoma Territory, 1890 to 1907

Electronic resource: IT 1889
Cf. E78.I5 Indians of North America
Cf. F697-701 United States local history
Cf. KF5660-5662 United States (Indian lands)
General (Comparative)
KIF3381 Bibliography
KIF3384 Maps
Prepared or published between 1898-1903 under supervision orauthority of the U.S. Geological Survey and the U.S. Indian Inspectoror Commissioner for the Indian Territory, concerning land allotment, progress of township appraisements, and the developingrailroad system
Electronic resource: Indian Territory 1898
Electronic resource: Indian Territory 1898 (Subdivision)
Electronic resource: 1899 Creek Nation (Allotments)
Electronic resource: Indian Territory 1902 (Townsites)
Electronic resource: Indian Territory 1903 (Railroads)
Electronic resource: Cherokee Nation (Allotments)
Periodicals see KIA2-15
KIF3385 Encyclopedias. Law dictionaries
For language vocabularies, e.g. Cherokee, see Class P

Indian Territory ca. 1889

CLASSIFICATION WEB — LIBRARY OF CONGRESS

F United States Local History

Oklahoma

Previously Indian Territory (to 1907)

F697	Early to 1890
	Including the "Indian country," that part of the Louisiana purchase west of Arkansas, Missouri and the Missouri River. Indian Territory before division in 1890.
	Biography: Davis Lewis Payne
	1890-1907
F698	Indian Territory
F699	Oklahoma Territory
F700	1907-1950
	Including acmission as a state, November 16, 1907
	Biography: William Henry Murray
	Cf. D570.85.O5-.O51 World War I, 1914-1918
	Cf. D769.85.O5-.O51 World War II, 1939-1945
F701	1951-

LC OPAC

◄ Previous Next ►

Call Number	Name: Main Author, Creator, etc.	Full Title	Date
F697 .B745	Boudinot, Elias C. (Elias Cornelius), 1835-1890.	Oklahoma.	1878
F697 .B752	Boudinot, Elias C. (Elias Cornelius), 1835-1890.	Speech of Elias C. Boudinot, of the Cherokee nation, delivered before the House Committee on territories, March 5, 1872, on the question of a territorial government for the Indian Territory, in reply to the second argument of the Indian delegations in opp	1872
F697 .B752	Boudinot, Elias C. (Elias Cornelius), 1835-1890.	Speech of Elias C. Boudinot, of the Cherokee nation, delivered before the House Committee on territories, March 5, 1872, on the question of a territorial government for the Indian Territory, in reply to the second argument of the Indian delegations in opp	1872
F697 .B753 2006	Parins, James W.	Elias Cornelius Boudinot : a life on the Cherokee border / James W. Parins.	2006
F697 .B753 2006	Parins, James W.	Elias Cornelius Boudinot : a life on the Cherokee border / James W. Parins.	2006
F697 .B87	Burright, Orrin Ulysses, 1866-	Sun rides high [by] Orrin Ulysses Burright, as told to his daughters, Gailys Burright Stewart [and others.	1973
F697 .C73 1998	Collins, Hubert E. (Hubert Edwin), 1872-1932.	Storm and stampede on the Chisholm / Hubert E. Collins ; foreword by Hamlin Garland ; illustrated by Paul Brown ; introduction to the Bison books edition	1998

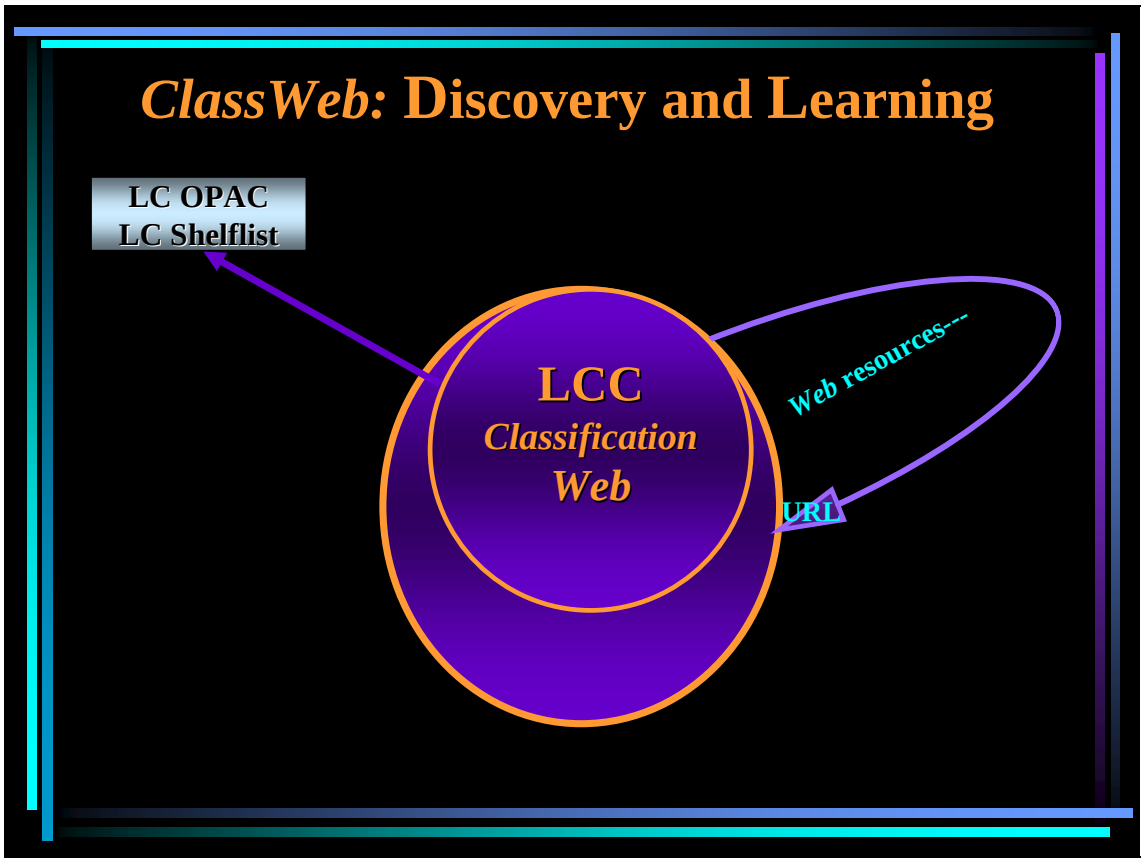
CLASSIFICATION WEB — LIBRARY OF CONGRESS

Indians of North America--Oklahoma
NT Cherokee Indians
Chiricahua Indians
Five Civilized Tribes
Kickapoo Indians
Peoria Indians
Piankashaw Indians
Seminole Indians
Tawakoni Indians
Tonkawa Indians
Wea Indians
Wichita Indians
Wyandot Indians

Indians of North America--Oklahoma--Antiquities
NT Panhandle culture

Indians of North America--Oklahoma--Legal status, laws, etc
USE Indians of North America--Legal status, laws, etc.--Oklahoma

Indians of North America--Oklahoma--Reservations
USE Indian reservations--Oklahoma



CLASSIFICATION WEB — LIBRARY OF CONGRESS

KIA-KIX Law of Indigenous Peoples in the Americas -

Outline (Regions)

KIA North America

Arctic and sub-Arctic

Greenland, see KDZ

Northern Canada

Alaska

KIB-KIC Canada

Eastern Canada

KID-KIE Western Canada

KIE-KIK United States


North America – Clickable Diagram
http://www.loc.gov/loc/classw/bdunn/mapdemo.html
•Regions
• States/ Territories
• Peoples
• Topics
• Maps
• LCC
RUSSIA
Arctic Ocean
ARCTIC & SUB-ARCTIC
GREENLAND
ALASKA
NORTH
CANADA
WEST
EAST
UNITED
STATES
MEXICO
North Pacific Ocean
North Atlantic Ocean
Gulf of Mexico
Caribbean Sea
THE BAHAMAS
CUBA
JAMAICA
HONDURAS
BELIZE


Arctic and Sub-Arctic Regions
ArcticStat map
Nunavut
Alaska
Yukon Territory
Northwest Territories
Greenland
Iceland
Faroe Islands
Svalbard
Finnmark
Magadan Oblast
Republic of Sakha (Yakutia)
Chukchi Autonomous Okrug
Taimyr (Dolgan-Nenets) Autonomous Okrug
Yamal-Nenets Autonomous Okrug
Republic of Komi
Republic of Karelia
Murmansk Oblast
Troms
Nordland


North America – Arctic/Sub-Arctic
Go
advanced search
Regions
States/Provinces
Peoples
Topics
Maps
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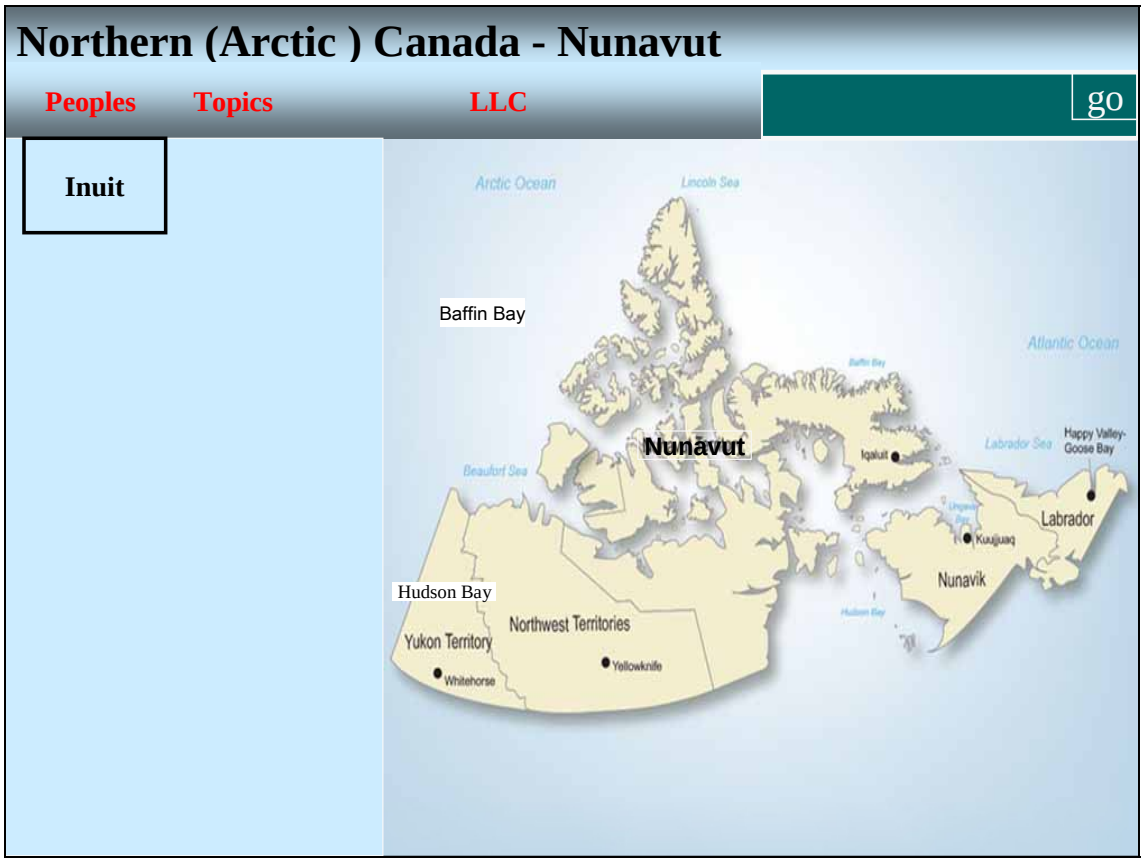
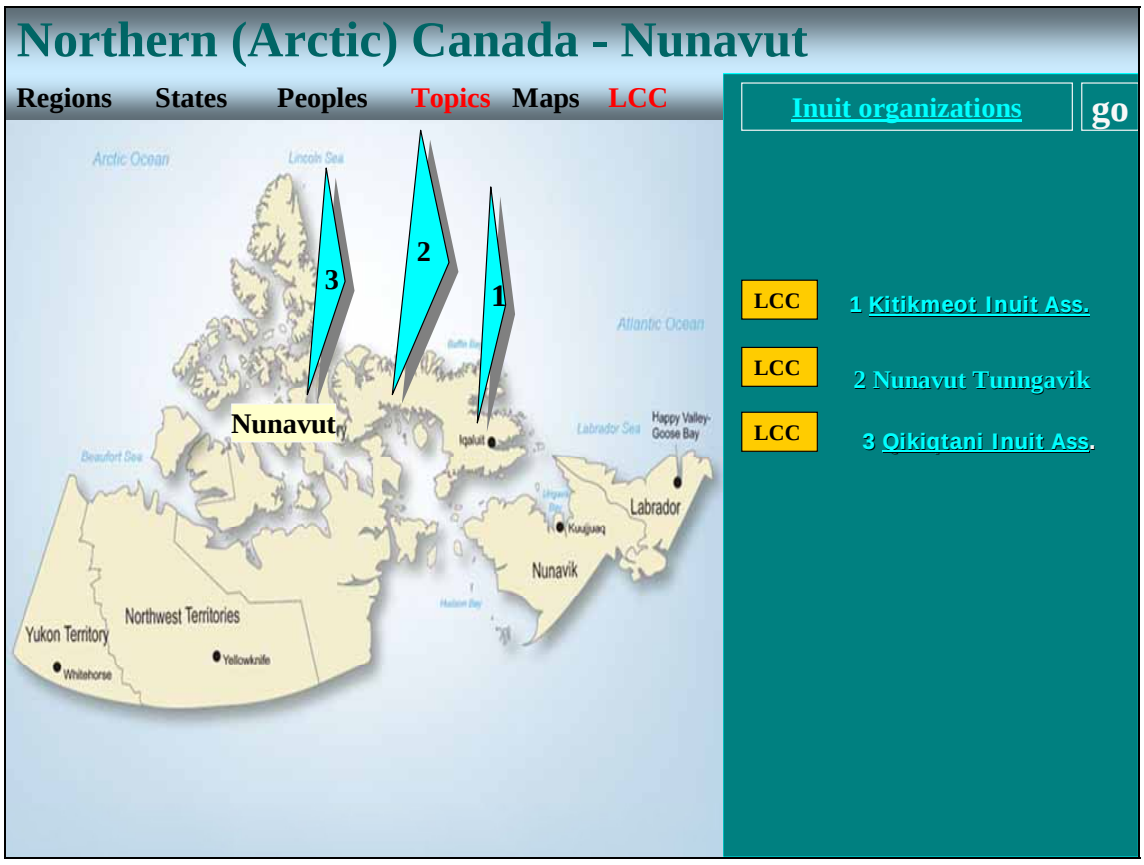
Alaska Natives
Aleuts
Indians-
Canada
US
Inuit-
Alaska
Canada, North
Greenland


North America
Inuit
Go
advanced search
Regions
States/Provinces
Peoples
Topics
Maps
LCC
Canada, North


Northern (Arctic) Canada - Nunavut
Peoples
Topics
LLC
go
Inuit
Arctic Ocean
Lincoln Sea
Baffin Bay
Atlantic Ocean
Nunavut
Iqaluit
Labrador Sea
Happy Valley-Goose Bay
Labrador
Kuujjuaq
Nunavik
Beaufort Sea
Hudson Bay
Northwest Territories
Yukon Territory
Yellowknife
Whitehorse


Northern (Arctic) Canada - Nunavut
Regions
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Maps
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Inuit organizations
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Arctic Ocean
Lincoln Sea
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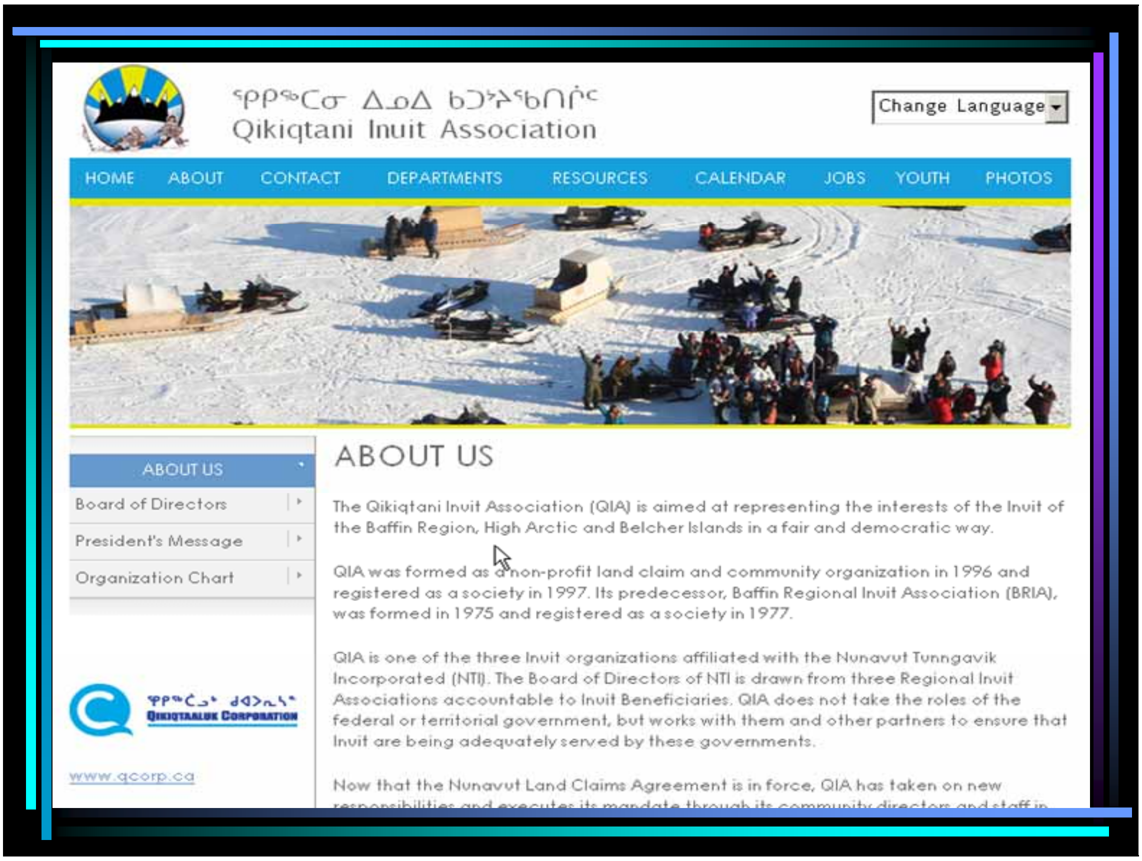
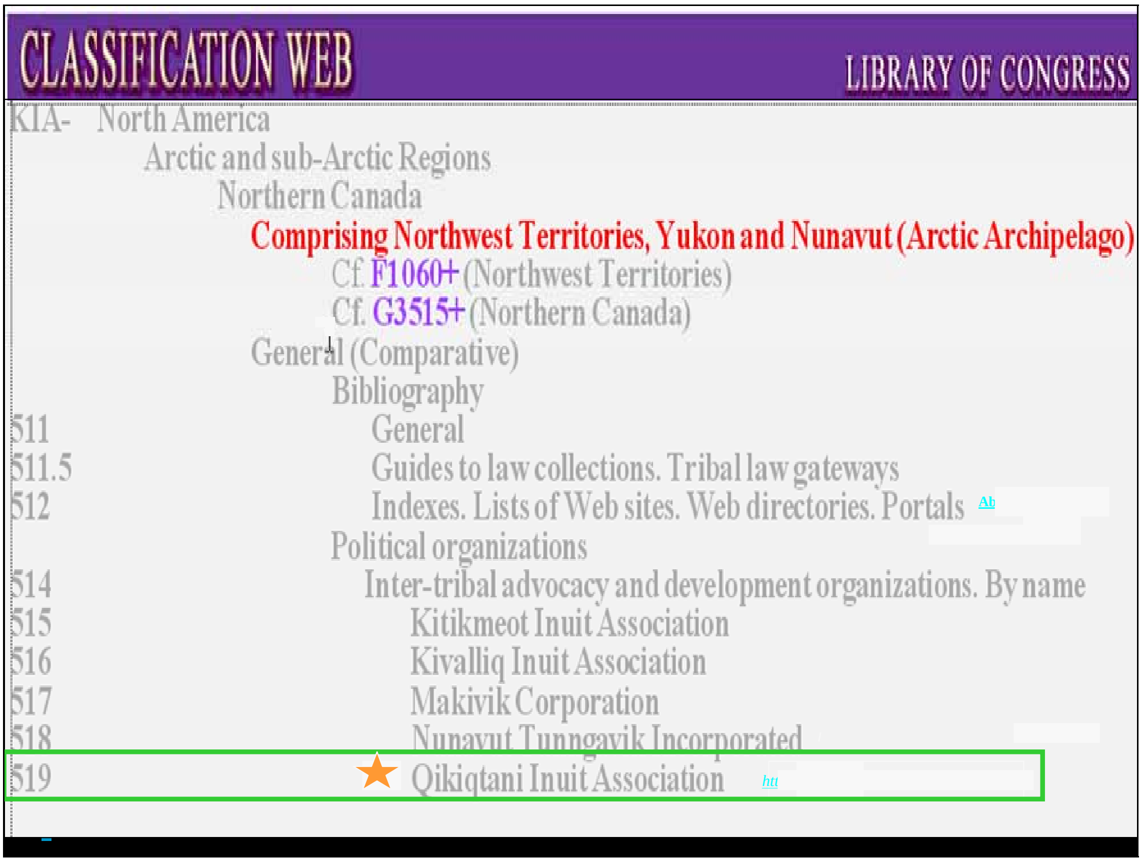
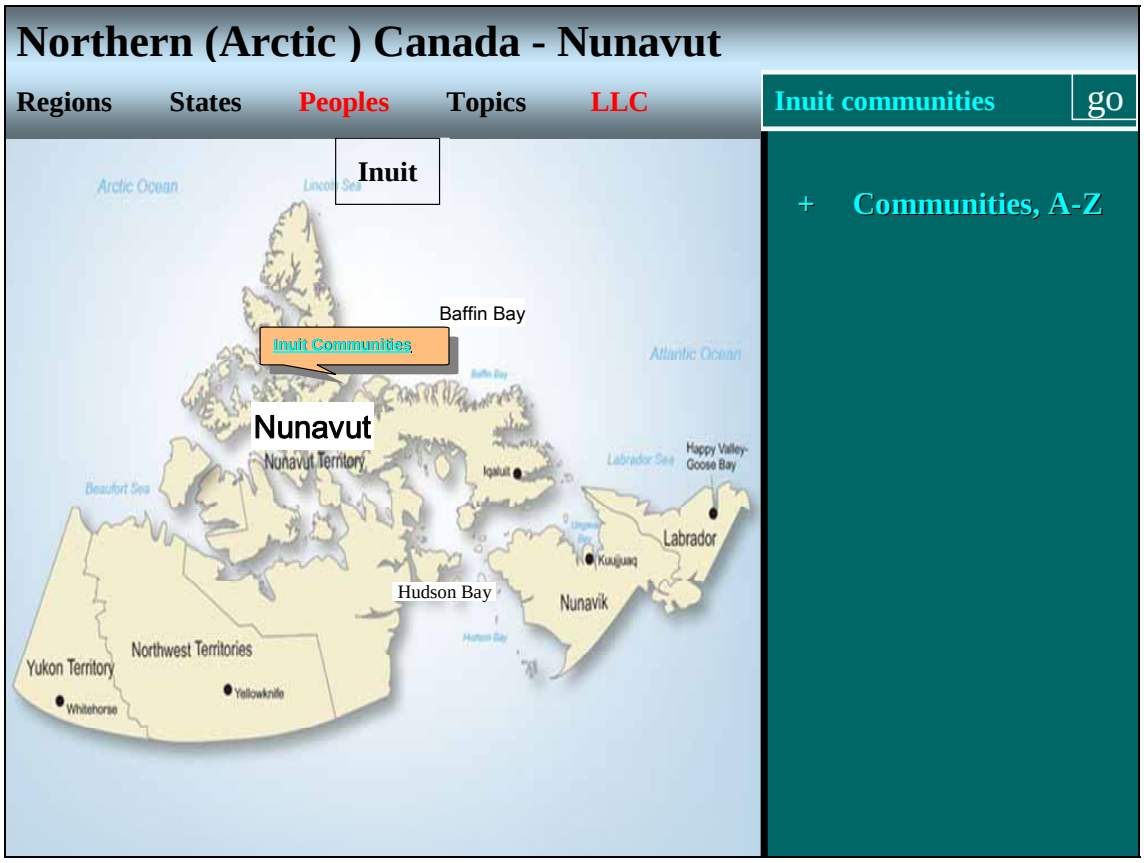
1
Atlantic Ocean
Nunavut
Iqaluit
Labrador Sea
Happy Valley-Goose Bay
Labrador
Kuujjuaq
Nunavik
Beaufort Sea
Northwest Territories
Yukon Territory
Yellowknife
Whitehorse
LCC
1 Kitikmeot Inuit Ass.
LCC
2 Nunavut Tunngavik
LCC
3 Qikiqtani Inuit Ass.


Qikiqtani Inuit Association
Change Language
HOME
ABOUT
CONTACT
DEPARTMENTS
RESOURCES
CALENDAR
JOBS
YOUTH
PHOTOS
ABOUT US
Board of Directors
President's Message
Organization Chart
QIKIQTAALUK CORPORATION
www.qcorp.ca
ABOUT US
The Qikiqtani Inuit Association (QIA) is aimed at representing the interests of the Inuit of the Baffin Region, High Arctic and Belcher Islands in a fair and democratic way.
QIA was formed as a non-profit land claim and community organization in 1996 and registered as a society in 1997. Its predecessor, Baffin Regional Inuit Association (BRIA), was formed in 1975 and registered as a society in 1977.
QIA is one of the three Inuit organizations affiliated with the Nunavut Tunngavik Incorporated (NTI). The Board of Directors of NTI is drawn from three Regional Inuit Associations accountable to Inuit Beneficiaries. QIA does not take the roles of the federal or territorial government, but works with them and other partners to ensure that Inuit are being adequately served by these governments.
Now that the Nunavut Land Claims Agreement is in force, QIA has taken on new


CLASSIFICATION WEB
LIBRARY OF CONGRESS
KIA- North America
Arctic and sub-Arctic Regions
Northern Canada
Comprising Northwest Territories, Yukon and Nunavut (Arctic Archipelago)
Cf. F1060+ (Northwest Territories)
Cf. G3515+ (Northern Canada)
General (Comparative)
Bibliography
511 General
511.5 Guides to law collections. Tribal law gateways
512 Indexes. Lists of Web sites. Web directories. Portals
Political organizations
514 Inter-tribal advocacy and development organizations. By name
515 Kitikmeot Inuit Association
516 Kivalliq Inuit Association
517 Makivik Corporation
518 Nunavut Tunngavik Incorporated
519 Qikiqtani Inuit Association


Northern (Arctic) Canada - Nunavut
Regions
States
Peoples
Topics
LLC
Inuit communities
go
Inuit
Arctic Ocean
Lincoln Sea
Baffin Bay
Inuit Communities
Atlantic Ocean
Nunavut
Nunavut Territory
Beaufort Sea
Iqaluit
Labrador Sea
Happy Valley-Goose Bay
Labrador
Kuujjuaq
Hudson Bay
Nunavik
Northwest Territories
Yukon Territory
Whitehorse
Yellowknife
+ Communities, A-Z


Government of Canada
Gouvernement du Canada
Canada
Aboriginal Canada Portal
Français
Home
Contact Us
Help
Search
canada.gc.ca
Home > Aboriginal Communities in Canada > Nunavut > Inuit Communities in Nunavut
Browse By:
Province or Territory
Nunavut
Community Type
Inuit
Go
Search By Name
>>
Other Links
All Aboriginal Communities of Canada in Google Earth
Give Us Your Feedback
Proactive Disclosure
Inuit Communities in Nunavut
Arctic Bay
Arviat
Baker Lake
Bathurst Inlet
Cambridge Bay
Cape Dorset
Chesterfield Inlet
Clyde River
Coral Harbour
Gjoa Haven
Grise Fiord
Hall Beach

Northern (Arctic) Canada - Nunavut

Peoples Topics LLC

Inuit healing go

Inuit

Northern (Arctic) Canada - Nunavut

Regions States Peoples Topics Maps LCC

Inuit healing go

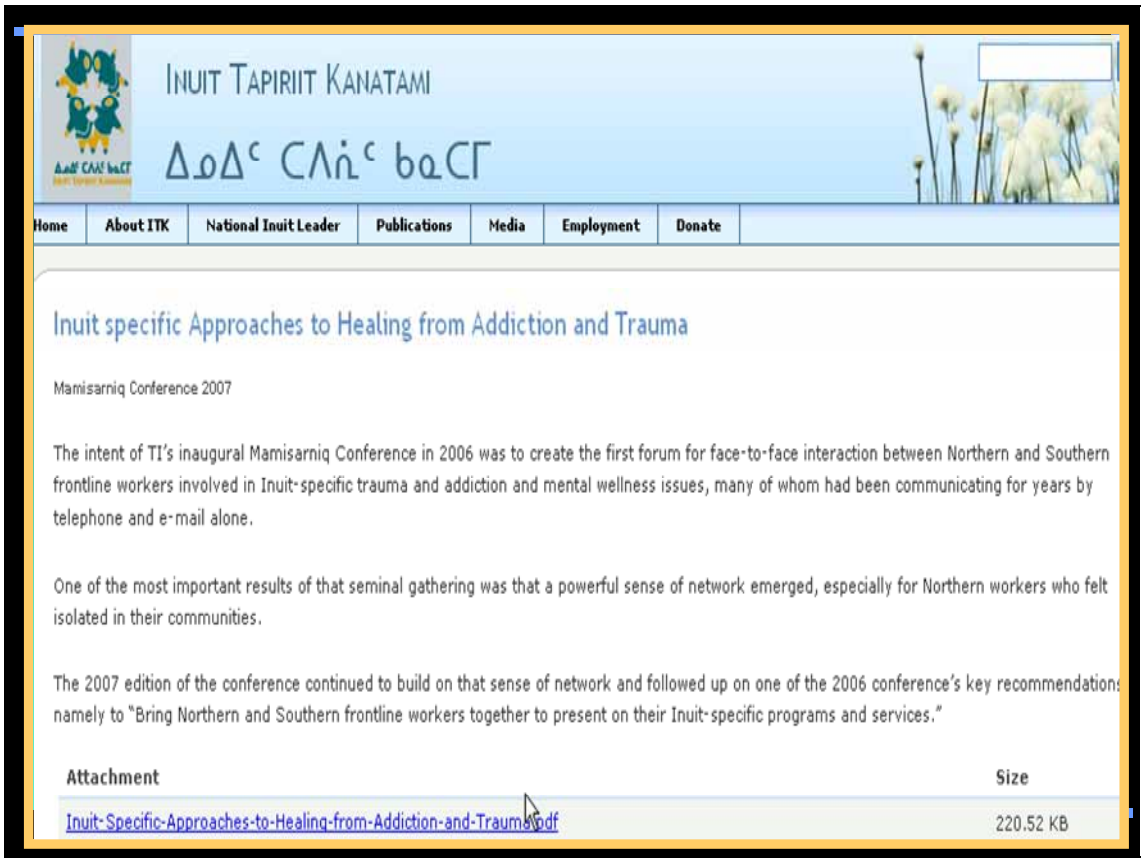
+ Health measures . A-Z

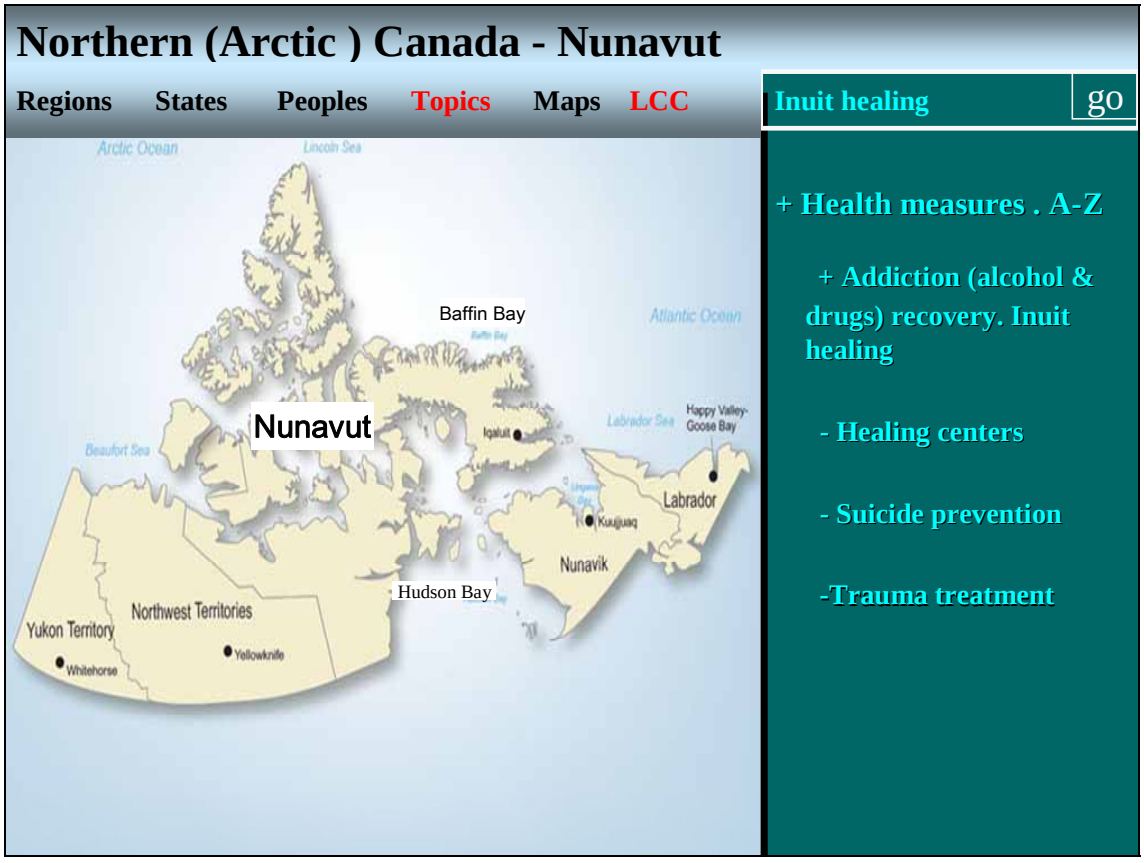
+ Addiction (alcohol & drugs) recovery. Inuit healing

- Healing centers

- Suicide prevention

-Trauma treatment


Inuit Tapiriit Kanatami
ᐃᓄᐃᑦ ᑕᐱᐃᓕᑦ ᑲᓇᑕᒥ
Home
About ITK
National Inuit Leader
Publications
Media
Employment
Donate
Inuit specific Approaches to Healing from Addiction and Trauma
Mamisarniq Conference 2007
The intent of TI's inaugural Mamisarniq Conference in 2006 was to create the first forum for face-to-face interaction between Northern and Southern frontline workers involved in Inuit-specific trauma and addiction and mental wellness issues, many of whom had been communicating for years by telephone and e-mail alone.
One of the most important results of that seminal gathering was that a powerful sense of network emerged, especially for Northern workers who felt isolated in their communities.
The 2007 edition of the conference continued to build on that sense of network and followed up on one of the 2006 conference's key recommendations namely to "Bring Northern and Southern frontline workers together to present on their Inuit-specific programs and services."
Attachment
Size
Inuit-Specific-Approaches-to-Healing-from-Addiction-and-Trauma.pdf
220.52 KB


Northern (Arctic) Canada - Nunavut
Regions
States
Peoples
Topics
Maps
LCC
Inuit healing
go
+ Health measures . A-Z
+ Addiction (alcohol & drugs) recovery. Inuit healing
- Healing centers
- Suicide prevention
-Trauma treatment
Arctic Ocean
Lincoln Sea
Baffin Bay
Atlantic Ocean
Nunavut
Iqaluit
Labrador Sea
Happy Valley-Goose Bay
Beaufort Sea
Labrador
Kuujjuaq
Nunavik
Hudson Bay
Northwest Territories
Yukon Territory
Yellowknife
Whitehorse

CLASSIFICATION WEB LIBRARY OF CONGRESS

KIA-KIX Law of Indigenous Peoples in the Americas
Arctic and sub-Arctic Regions
Northern (Arctic) Canada
Public health

228	**General work**
30.2.A-Z	**Particular public health measures, A-Z**
230.2.A+	**Addiction (Alcohol and drugs) recovery** **Including Inuit-specific approaches to healing addiction and trauma** **http://www.itk.ca/publications/** **For rehabilitation of alcoholics in general, see HV5199+ and HV 5303+**
230.2.H4	**Healing Centers for addicts**
230.2.S+	**Suicide prevention**
230.T+	**Trauma. Multi-generational trauma treatment**

Northern (Arctic) Canada. Arctic Archipelago

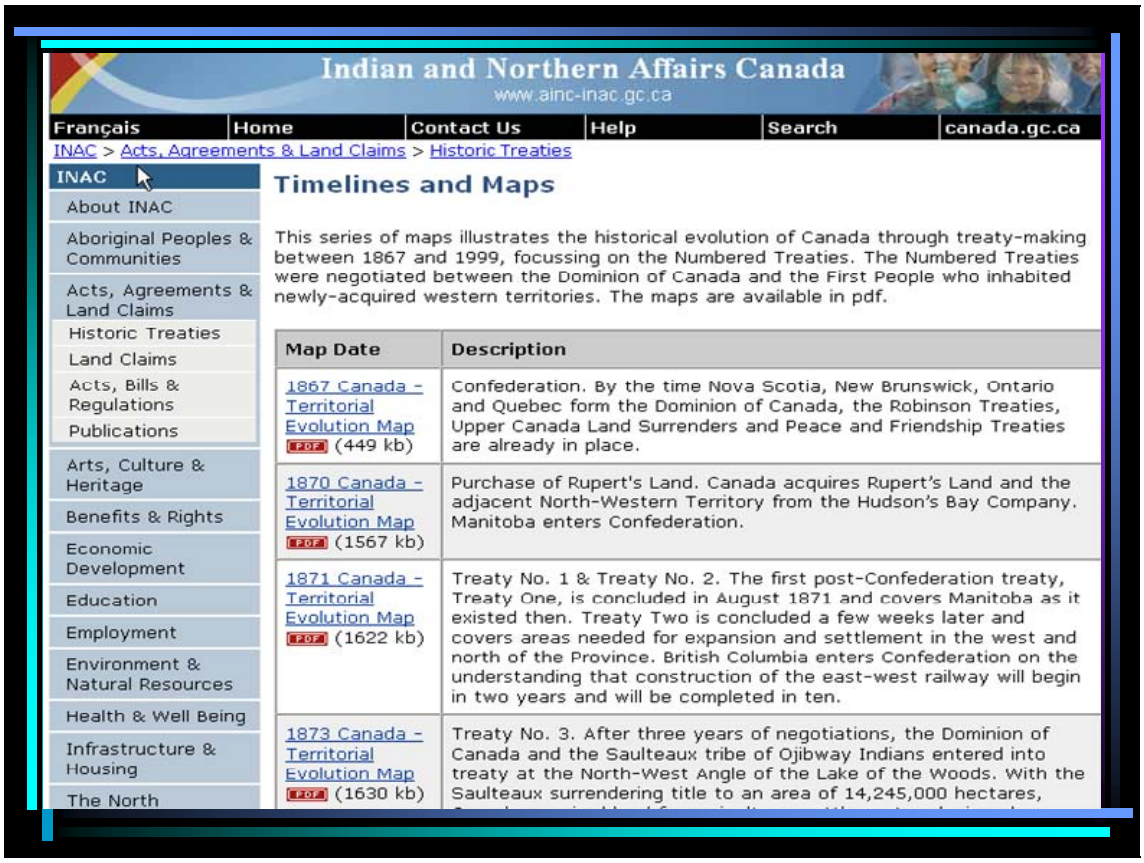
+ Northern Canada

Claims and Treaties go

+ Land Claims

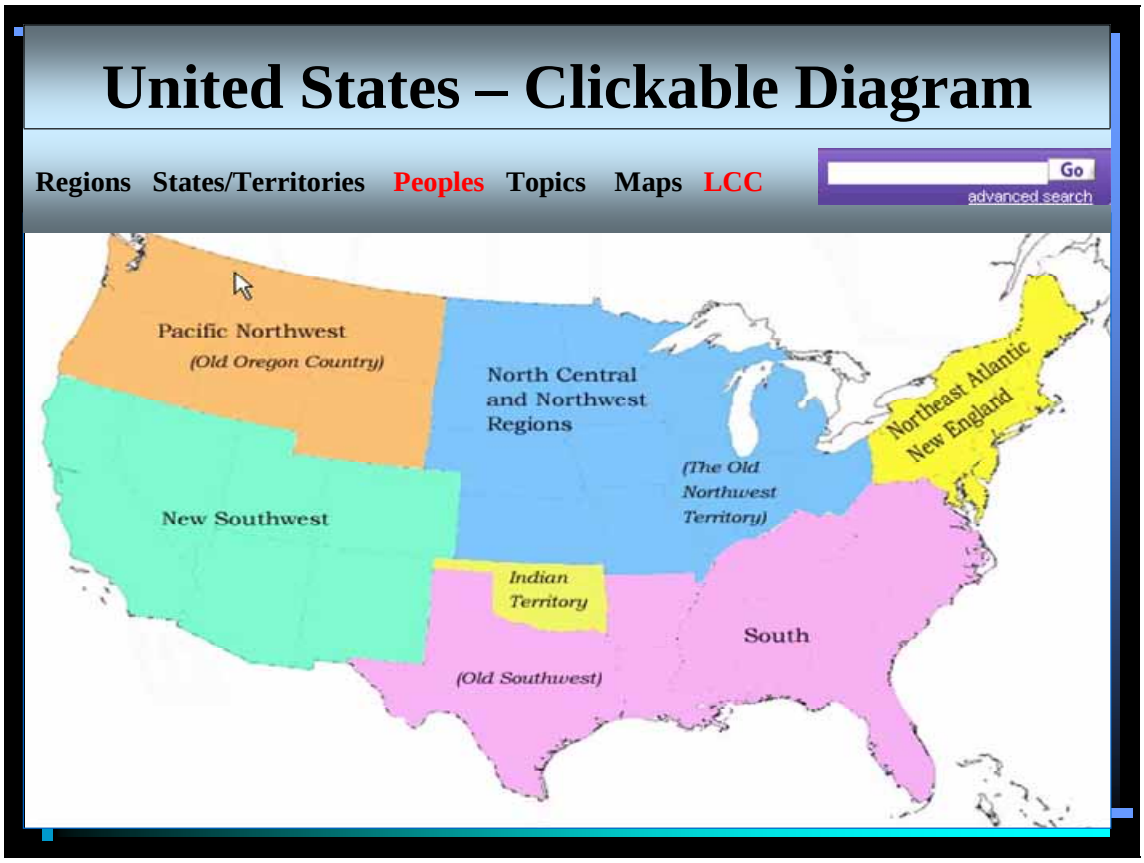
LCC + Treaties

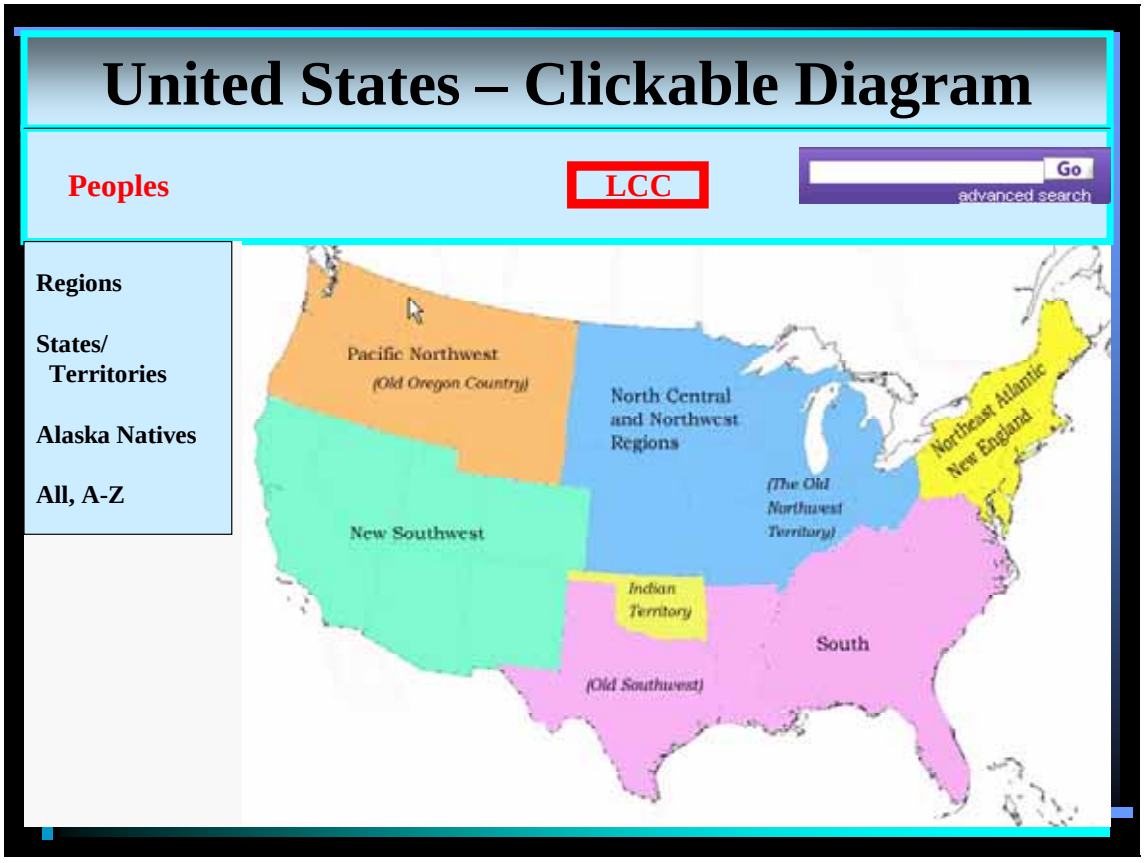
LCC Historic Treaties



CLASSIFICATION WEB — LIBRARY OF CONGRESS

KIA- North America
Canada. Northern Canada
Indigenous laws and treaties
Collections. Compilations. Selections
Treaties and other agreements
24 Indexes and tables
Including indexes/bibliographies for historical treaties
Aboriginal Canada Portal
http
Historical Indian treaties
Including both pre-confederation (to 1867) and post- confederation (1867-) treaties, and including digital resources
Cf. KE7702.7
25 General
25.5 ★ Indian & Northern Affairs Canada (INAC)
http
26 Atlas of Canada (Territorial evolution)


United States – Clickable Diagram
Regions States/Territories Peoples Topics Maps LCC
Go
advanced search
Pacific Northwest
(Old Oregon Country)
North Central
and Northwest
Regions
(The Old
Northwest
Territory)
Northeast Atlantic
New England
New Southwest
Indian
Territory
South
(Old Southwest)


United States – Clickable Diagram
Peoples
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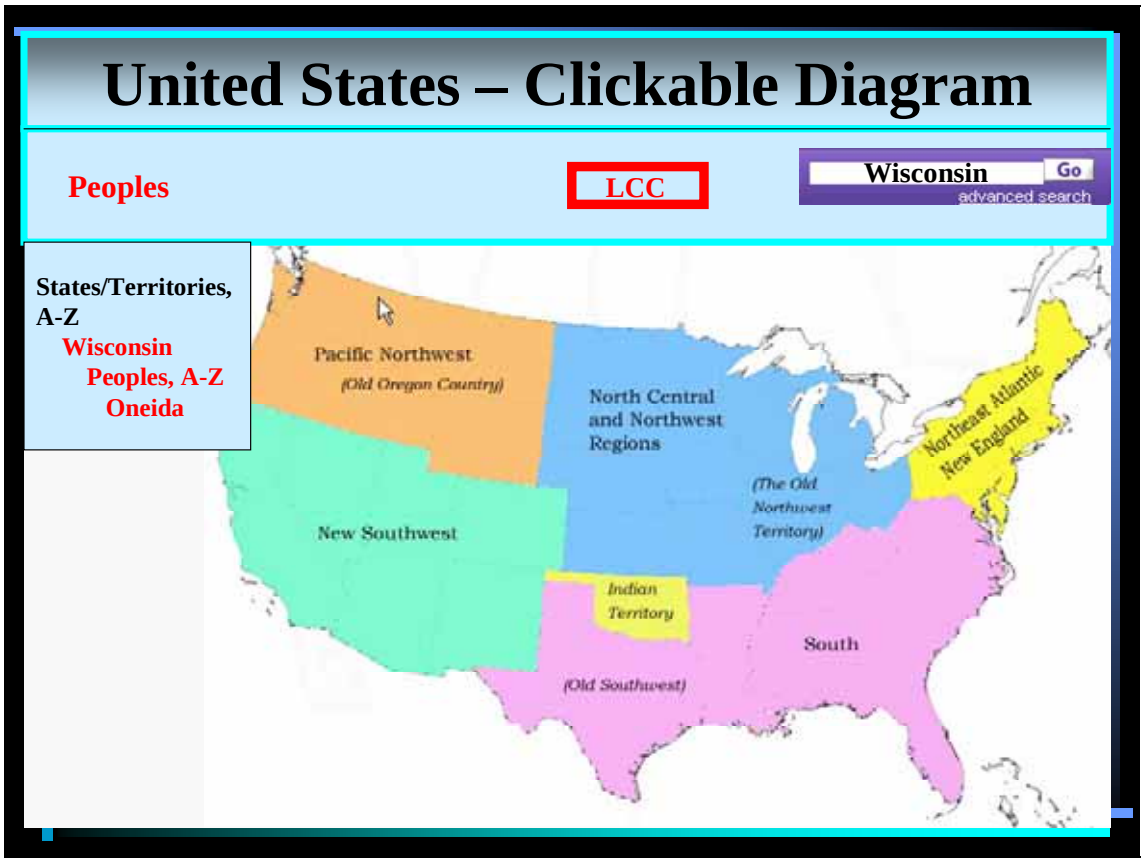
New Southwest
Indian
Territory
South
(Old Southwest)


United States – Clickable Diagram
Peoples
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States/Territories, A-Z
Wisconsin
Peoples, A-Z
Oneida
Pacific Northwest
(Old Oregon Country)
North Central and Northwest Regions
(The Old Northwest Territory)
Northeast Atlantic New England
New Southwest
Indian Territory
South
(Old Southwest)


ONEIDA TRIBE OF INDIANS OF WISCONSIN
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Maps
LCC
Laws and Policies
Legislative Operating Committee
Oneida Code of Laws
– Policies
Tribal Justice
-Judicial Code

CLASSIFICATION WEB — LIBRARY OF CONGRESS

KIA-KIX Law of Indigenous Peoples in the Americas
United States
North Central Region. The Old Northwest

Oneida Tribe of Indians of Wisconsin

Cf. E 99.O45 Indians of North America

871-970 General
Tribal statutes. Codes. Tribal council resolutions. Regulations.
By date

872 ★ Oneida Code of Laws 2003

Constitutional law

874 Constitutions. By date
★ Oneida Constitution 1936
★ Oneida Constitution 1969

Sources other than constitutions. Corporate charters. By-laws

875 Corporate Charter, 1937

http://www.aboriginalcanada.gc.ca/acp/site.nsf/en/ao20997.html


The Atlas of Canada
Since 1906
Discover Canada
through National Maps and Facts
Home » Explore Our Maps » History » Territorial Evolution » Animation of The Territorial Evolution of Canada
Search Our Site
Enter your keywords
Advanced Search
Explore Our Maps
Environment
People & Society
Economy
History
Climate Change
Freshwater
Health
Reference Maps
Map Archives
Topographic Maps
Learning Resources
Lesson Plans
Facts About Canada
All Resources
Data & Services
Wall Maps
Free Data
Web Services
Animation of The Territorial Evolution of Canada
British Possession
Districts and Territories
Provinces
1901

Sovereign within a Sovereign: A projected Native American Web Portal at the Library of Congress (*USA*)

Jolande E. Goldberg
Policy & Standards Division
The Library of Congress
Washington DC 20540 USA

The background story. Tribal law together with tribal sociology is – beyond the folkloric appeal of the subject – not common knowledge, although the Indigenous gained more visibility over the last decades as their pursuit for recognition of political and cultural rights grew more passionate and aggressive. International events- such as the *UN Declaration on the Rights of Indigenous Peoples* in 2007 – highlighted the global struggle for acknowledgment of Indigenous rights by the international political community. Efforts led by both intergovernmental Indigenous organizations and local tribal groups, and international advocacy organizations, brought increasingly national awareness of this Sovereign. In the US, such affairs as the long running Indian Trust mismanagement suit (Cobell vs. Salazar), had at one point forced the *US Department of the Interior/Bureau of Indian Affairs* to take temporarily their web sites down. And inter-institutional collection development projects aimed at increased visibility of tribal law in the academic or public library, heightening the awareness of an important component of the family of laws: Indigenous law.

The often contentious debate surrounding the struggle for Indigenous autonomy and rights has produced – and continues to produce – an unprecedented amount of materials relating to the subject – dispersed, unorganized, and for that: obscure.

The rising interest and marked increase in studies on current Native law, environment, an Indigenous rights over the past few years, as evidenced by additional course offerings in U.S. and Canadian universities, generated an unusual demand for bibliographic keys to the varied and hard to find materials on the subject, especially to the amassment of information on the Web.

To this date, however, both information seekers and information providers are hard pressed byan uneasy reality: the obvious gap between ***availability*** and ***accessability*** of information. Search and research is still confronted with problems, such as

- paucity of (commercial) printing/publishing, in particular of primary sources;
- collections on law and sociology of the Indigenous, one of a kind and mostly littlepublicized, are held only by a few *bona fide* and specialist institutions;
- programs with limited access; or
- information on the subject which may be buried in relevant anthropological, archeological, or ethnological sources, usually in older collections on the *History of the Americas*.

Emerging project. For these reasons, LC took the lead with a new classification schedule for *Indigenous Peoples in the Americas* (KIA-KIX) in order to provide *first*, the organization, i.e., the categories/rubrics for Aboriginal sociology and laws, and *secondly*, for broad, easy, and effective access, addressing in particular the information needs of America's *First Citizens.*

This schedule (KIA-KIX *Law of the Indigenous Peoples in the Americas)* will form a component of the Library of Congress (LC) online classification system, known as *ClassificationWeb*. The online schedule will be lodged within the regional comparative and international law classification schedule written for the Americas*(see appended Outline).*

Goal for the next generation of on-line classification: Adding value. The current development caused a renewed investigation of the enormous, not fully exploited potential of the LC online classification, in particular the powerful linking and accessing functionality.

During the various stages of the subject classification of KIA-KIX, the "sifting" of the deepWeb had revealed that the critical mass of information, i.e., primary and secondary sources, the output of major tribal organizations or inter-operational institutions, are largely to be found on the Web. Thus, the development work targeted, and utilized extensively, Webresources for content structure and terminology of the schedules, in particular electronic portals and the gateways to a large body of information on culture, ecology, constitutional status, and sociology of Indigenous Peoples in the Americas.

Re-tooling for discovery and education. Technique. The linking and correlation functionality of *ClassificationWeb* was already fully employed for multilateral linking to areas in related disciplines in the LC Classification, which provides rich information on anthropology, local history, ethno-geography, etc., expanding the new class for a broad and varied user community.

a) As a further step, electronic access points (Universal Resource Locators) to digital content and repositories of digitized collections anywhere (in-house and elsewhere) were embedded in the schedule, usually by creating a hyperlink from the subject, document (e.g., treaties, laws), organization, and from the list of tribes to tribal Websites. This way, the classification presents itself as a new *bibliographic implement.*

b) The last logical step is to enable the online classification itself to be the "intelligent" discovery and access tool, that is, a portal to repositories of digitized materials everywhere, or to other electronic portals and gateways. The direct content search on the Web would be supported by metadata (content and terminology of the classification) which was derived originally from Web sources and introduced in the classification. The online classification KIA-KIX *Law of the Indigenous Peoples in the Americas,* is envisioned to be used as the first class for the experimental development of a classification portal.

Sovereign within a Sovereign Portal

The collections made available through this portal will consist initially of Native American, Alaskan, and Hawaiian materials and law related issuances by Native governments, including agreements between tribal Nations and other sovereigns (collected or individual), eventually broadened to other indigenous sources.

These collections represent – besides Library of Congress' own collections – works published by the United States Government, Native governments, academic institutions, and consortia that allow the Library either to digitize or to access and make available through this portal their digital collections.

	LAW OF THE AMERICAS
	America. North America
KDZ	General (Comparative)
KDZ3001+	Greenland
KE	Canada
KF	United States
KG-KGH	Mexico and Central America
KGJ-KGZ	West Indies. Caribbean Area
KH-KHW	**South America**
KIA-KIX	**LAW OF INDIGENOUS PEOPLES IN THE AMERICAS**
KIA-KIP	**North America**
KIA1-15.8	General
KIA15.9-19	History
KIA21-9151	**Arctic and sub-Arctic Regions**
	Greenland, see KDZ3001+
KIA21-100	**Regional Comparative Indigenous Law**
	Northern Canada. Nunavut
KIA111-300	General (Comparative)
KIA351-1745	Indigenous jurisdictions
	Alaska
KIA1741-2050	General (Comparative)
KIA2101-9151	Indigenous jurisdictions
KIB-KID	**Canada**
KIB1-1000	**Regional comparative Indigenous Law**
	Northern Canada, see KIA511+
	Eastern Canada
KIB1101-1129.2	General (Comparative.)
KIB1131-9511	Indigenous jurisdictions
	Western Canada
KIC2001-2043.2	General (Comparative)
KIC2081-KID6031	Indigenous jurisdictions

	LAW OF THE AMERICAS
KIA-KIX	LAW OF INDIGENOUS PEOPLES IN THE AMERICAS
	North America - Continued
KIE-KIK	**United States**
KIE1-3925	**Regional comparative Indigenous law**
	Northeast Atlantic
	Including New England
KIF221-293	General (Comparative)
KIF301-3251	Indigenous jurisdictions
	South
	Including the **Old Southwest**
KIF3301-3451	General (Comparative)
KIF3381-3454	Indian Territory (Proposed) State of Sequoya
KIF3501-7400	Indigenous jurisdictions
	North Central
	Including the old **Northwest Territory**
KIG1-112	General (Comparative)
KIG201-7440	Indigenous jurisdictions
	Pacific Northwest
	Also known as the **Old Oregon Country**
KIH1-112	General (Comparative)
KIH401-7100	Indigenous jurisdictions
	New Southwest
KIJ1-93	General (Comparative)
KIJ101-9220	Indigenous jurisdictions
KIL-KIP	***Mexico and Central America*** *(under development)*
KIL1+	*General comparative Indigenous law*
	Countries
	Indigenous jurisdictions
KIS-KIX	***South America*** *(under development)*
	General
	Countries
	Indigenous jurisdictions
KVJ	***Hawai'i (to 1959)*** *(under development)*

Closing keynote address: Elsevier – Open to Accelerate Science

Jay Katzen

Elsevier - Open to Accelerate Science

ICSTI Annual Conference 2010

Presented by Jay Katzen,
Managing Director,
Academic & Government Products

Date : June 10, 2010

Research more exciting but also more challenging

Q How many hours per week searching and gathering information?

A 6.5

Q How many hours per week organizing, analyzing and applying information?

A 5.8

Researchers spend more time looking for information than analyzing and applying it.

Source: 2007 Survey by Outsell Inc. on 6,300 knowledge workers

"It is quite depressive to think that we are spending millions in grants for people to perform experiments, produce new knowledge, hide this knowledge in an often badly written text and then spend some more millions trying to second guess what the authors really did and found."

A.Bairoch, 2009
Swiss Institute of Bioinformatics

Other forces that shape research

Trend exacerbated by economic downturn

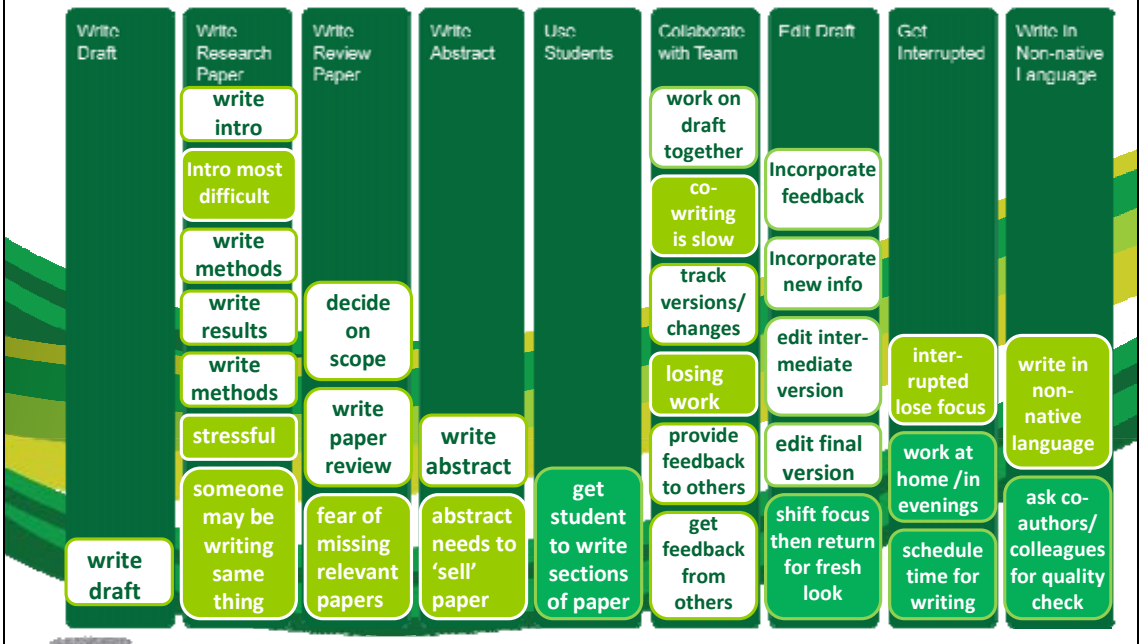
We conducted 3,000 interviews with librarians and researchers

"….Twenty years ago there were one-third as many journals in my field. Now it would take one day each week just to keep up . . ."

"….In a very popular topic, you may hit 500 articles. I try different queries and get 50-100, but only 20% are useful. It's about the efficiency of the time you spend vs. the output…."

"….I've got 5,000 *pdf* files that I've downloaded on my computer, seriously. I've tried renaming them so that I can find the right one when I need it, but it hasn't worked…."

Determining the workflow – researcher tasks



Key web trends defining the future

Openness & Interoperability

Personalization

Collaboration & Trusted Views

Openness and Interoperability

PubMed facebook salesforce.com GOV 2.0 BBC

"Give me your data, my way"

Access to APIs and creating an ecosystem that brings together core base of users and tools to build applications


Personalization
amazon.com
NETFLIX
last·fm
"Know who I am and what I want"
Deliver recommendations based on behavior
and what might be of interest to them


Collaboration and trusted views
Collexis
StemBook
SciLink
"The right contacts at the right time"
Provide a professional networking platform
for research scientists

Information Overload?

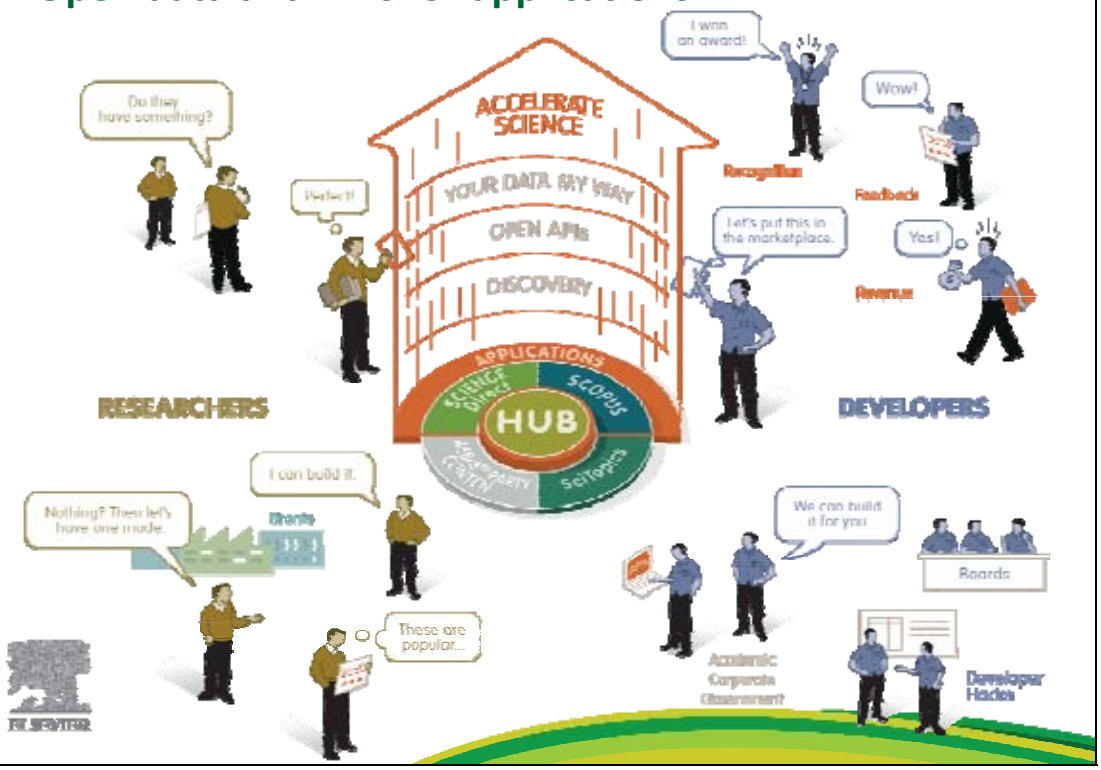
"As we go from grade school to high school we learn only a billionth of what there is to learn. There is enough scientific information written every day to fill seven complete sets of Encyclopaedia Britannica; there is enough scientific information written every year to keep a person busy reading day and night for 460 years."

B.L Siegel,
"Knowledge with commitment: Teaching is the central task of the universtity." 1984

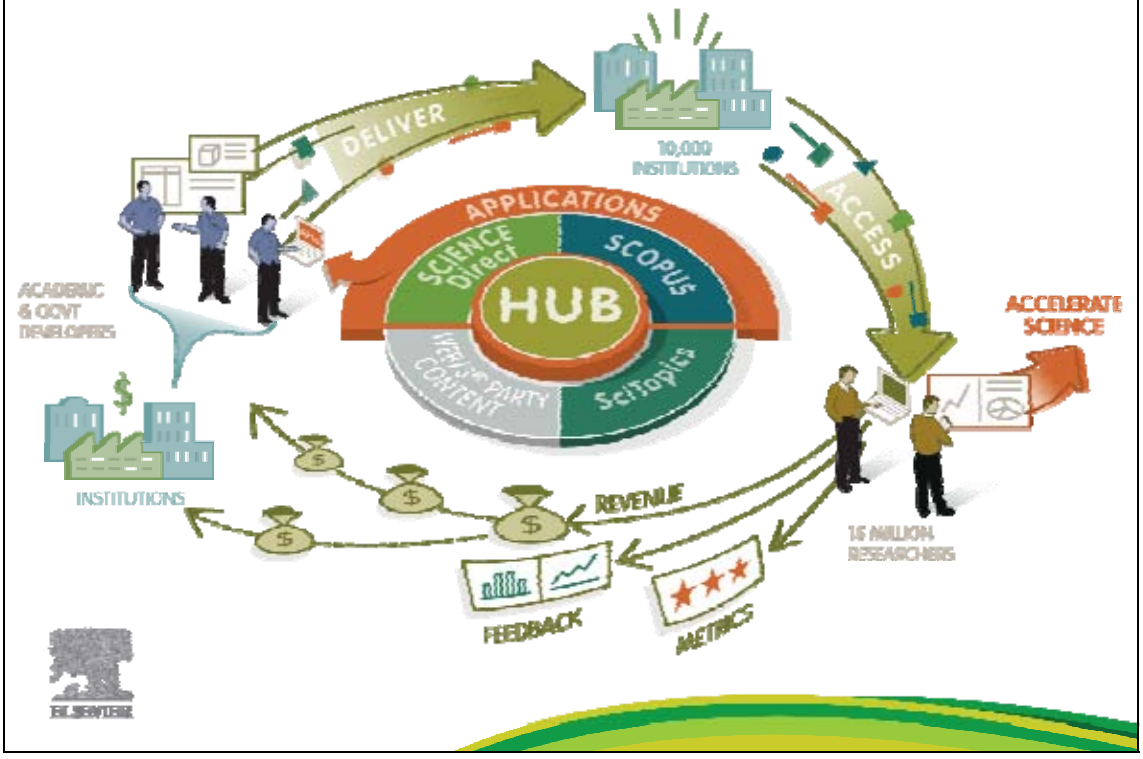
The problem isn't having too much information…

…It's about accessing the right information in an efficient and effective way

Open data and APIs for applications

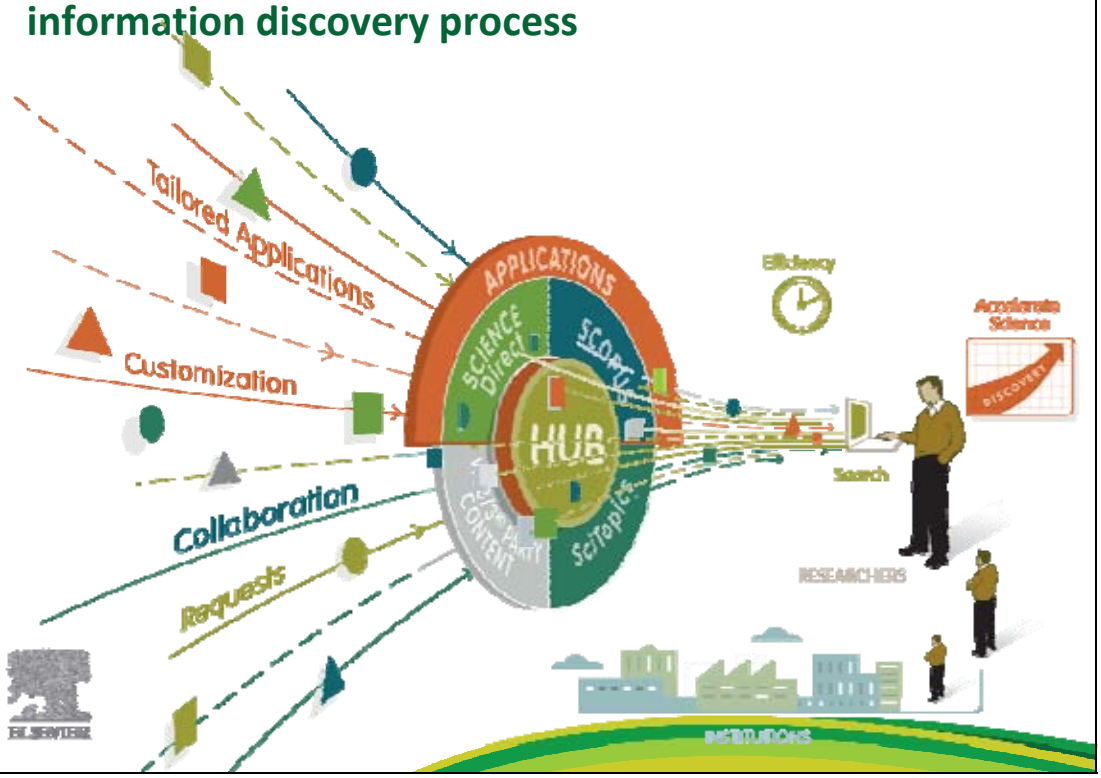


Institutions can gain recognition and revenues

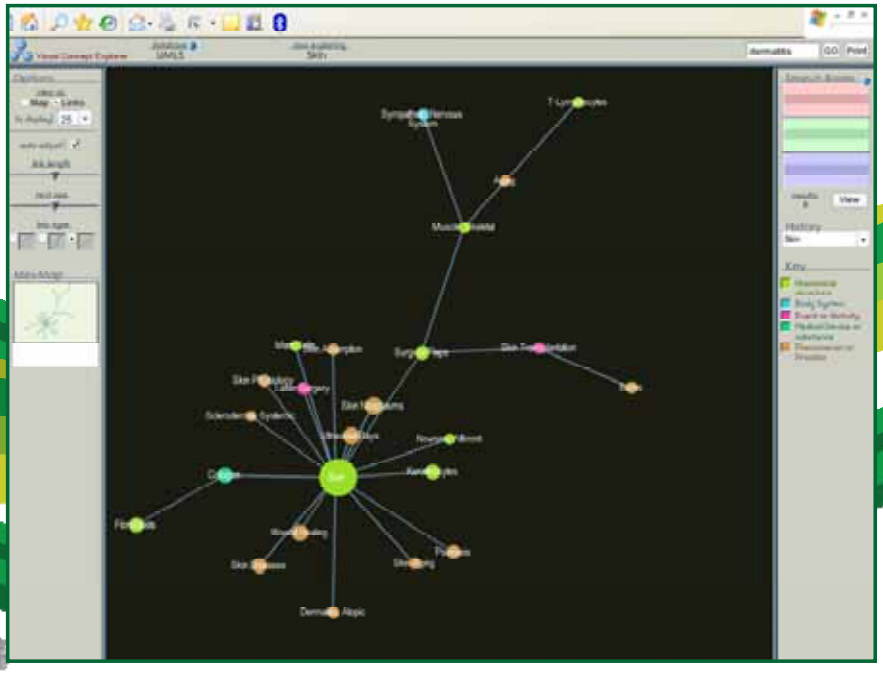


Libraries can become focal point for applications

Researchers can save time and improve their information discovery process



Visualization application



Source: http://faculty.cis.drexel.edu/~xlin/index.html

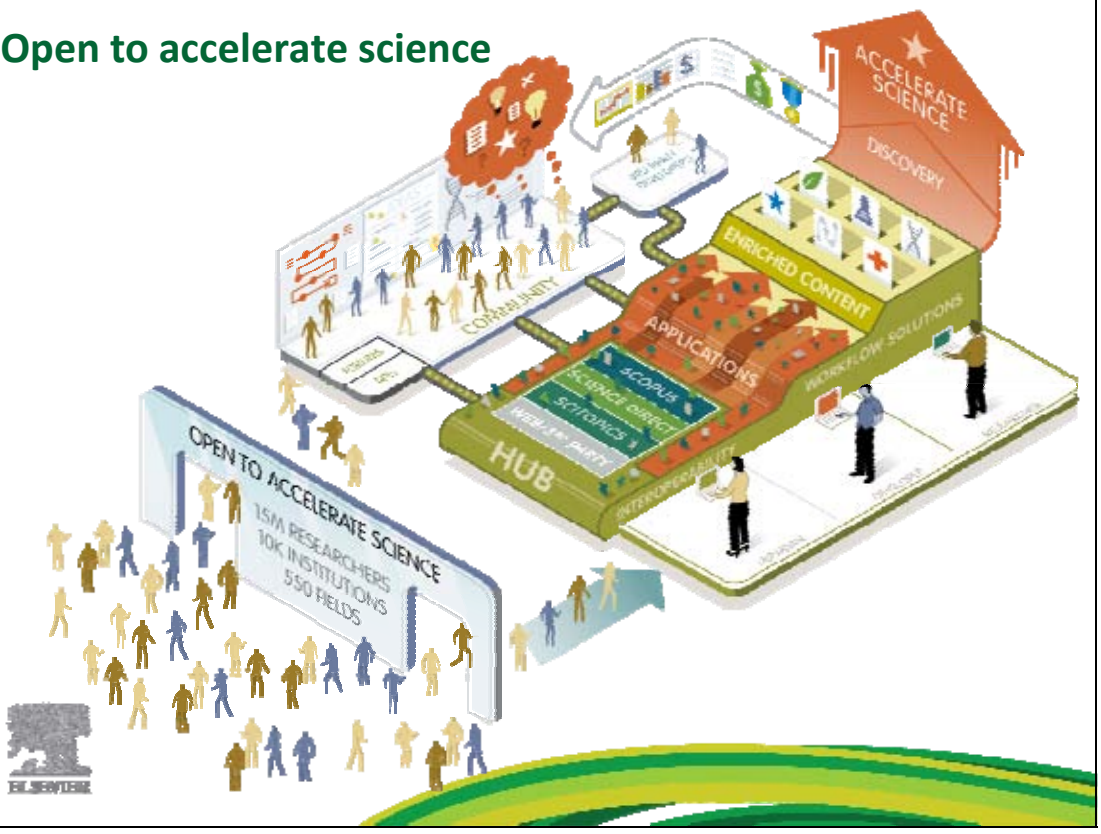
Researcher feedback

"Apps (interacting) with results are very important to help some time... apps integrated into article such as the pop-up example is also very interesting..."

Librarian feedback

"This is just amazing. What faculty is really after is for something that ties this altogether, so it's all in one place. This makes it really easy for them."

Open to accelerate science



In Summary

Through open APIs and data, you can…

- **Become the resource that researchers can rely on to tell them about applications that make their research faster, more efficient**
- **Collaborate with the research community to foster enhancement and availability of valuable applications**
- **Raise the value of your existing licensed content to your researchers**

Thank You

Closing Address of the Day

Wendy Warr

"Closing Address of the Day"

Dr. Wendy A. Warr
http://www.warr.com

Wendy Warr & Associates

Adding value

Wendy Warr & Associates

Research Invention Innovation

Wendy Warr & Associates

Move to human and solution centric service society

Wendy Warr & Associates

Strategic agility

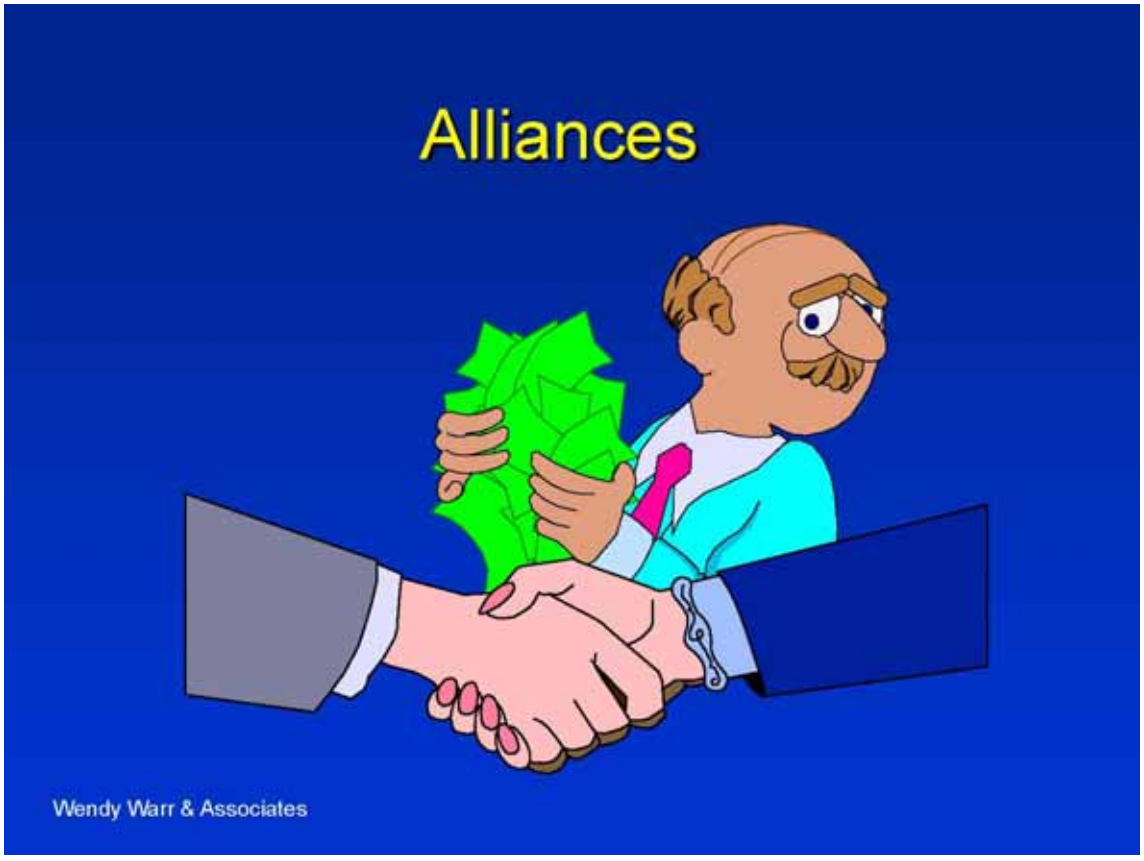
- Drivers of
  - strategic sensitivity
  - leadership unity
  - resource fluidity

Wendy Warr & Associates

Patents

- empower marketing
- are tool for product development
- are necessary for networking
- are a means to manage intellectual assets

Wendy Warr & Associates


Alliances
Wendy Warr & Associates


June 10, 2010
• King Abdulaziz City for Sciences and Technology, Saudi Arabia, and the Beijing Genome Institute, China, map Arabian camel genome
Wendy Warr & Associates

Smart Services, Labs, People

- Sharing
- Multidisciplinary
- Accessible
- Relevant
- Trustworthy

Wendy Warr & Associates

Sharing and Communicating

Wendy Warr & Associates

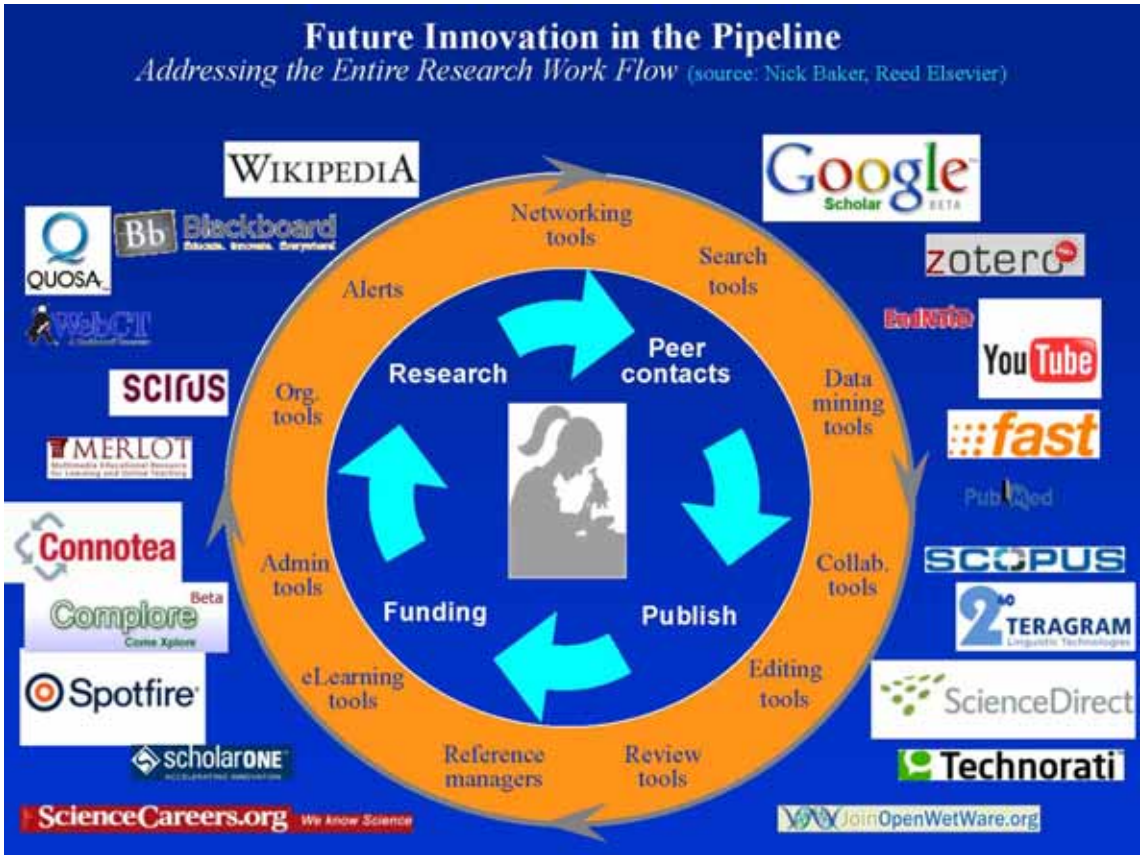
BL/RIN Themes

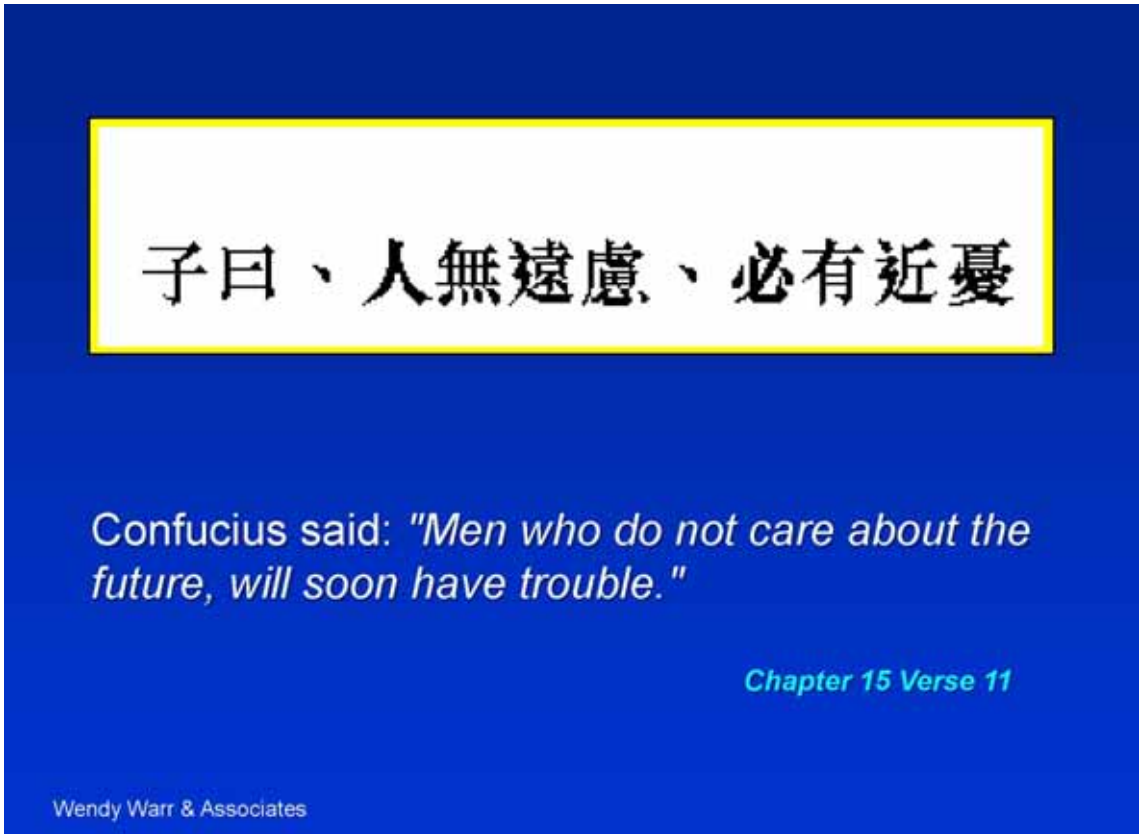
- Resource discovery
- Organizing information
- Sharing information
- Distributed teams
- Mandates on reporting and depositing

Wendy Warr & Associates

Microsoft Research

Wendy Warr & Associates


Future Innovation in the Pipeline
Addressing the Entire Research Work Flow (source: Nick Baker, Reed Elsevier)
WIKIPEDIA
Google Scholar
Blackboard
QUOSA
zotero
EndNote
YouTube
fast
SCIRUS
MERLOT
PubMed
Connotea
Complore
Beta
SCOPUS
TERAGRAM
Spotfire
ScienceDirect
scholarONE
Technorati
ScienceCareers.org
We know Science
JoinOpenWetWare.org
Networking tools
Search tools
Data mining tools
Collab. tools
Editing tools
Review tools
Reference managers
eLearning tools
Admin tools
Org. tools
Alerts
Research
Peer contacts
Publish
Funding


子曰、人無遠慮、必有近憂
Confucius said: "Men who do not care about the future, will soon have trouble."
Chapter 15 Verse 11
Wendy Warr & Associates

Keynote Address:
Making Open Science Real

Adam Bly

Demand and User Driven Innovation Policy – Content and Actions

Petri Lehto

Demand and user driven innovation policy - content and actions

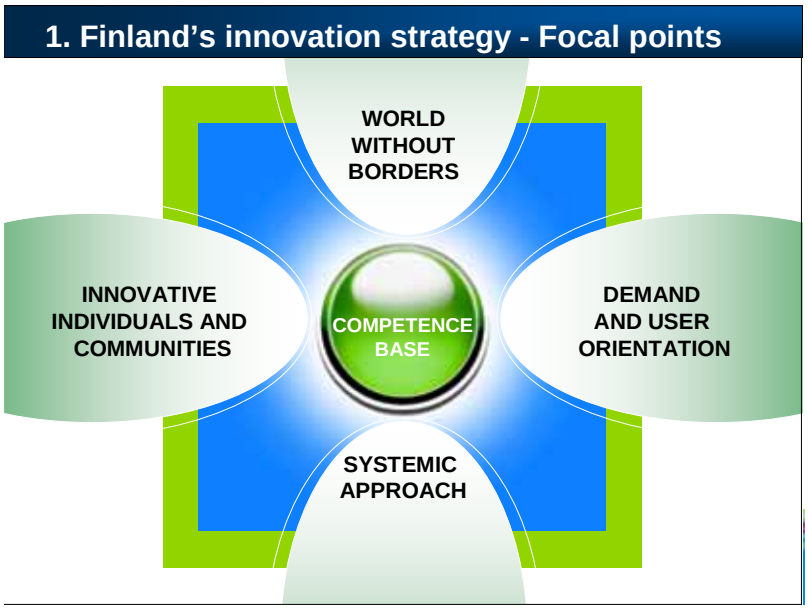
ICSTI 11.6.2010

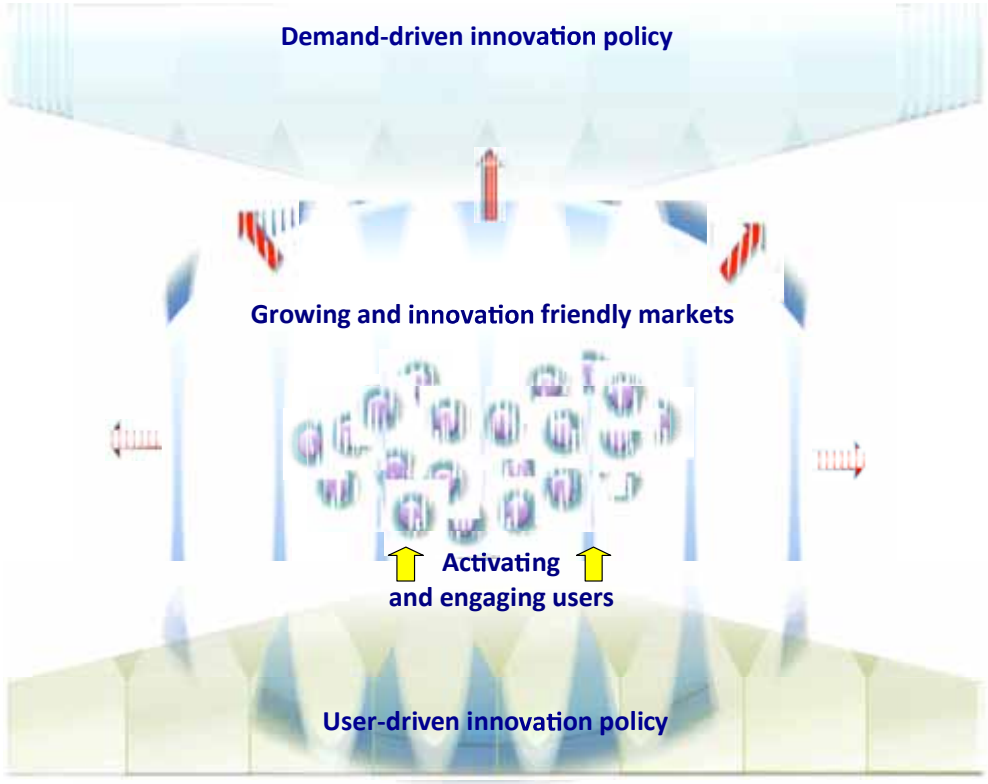
Petri Lehto

Ministry of Employment and the Economy
Innovation department /
Demand-Based Innovations
(www.TEM.fi/INNO)

The presentation

1. Background: National innovation strategy
2. Contents for demand and user driven innovation policy
3. Action programme on demand and user driven innovation policy


1. Finland's innovation strategy - Focal points
WORLD WITHOUT BORDERS
INNOVATIVE INDIVIDUALS AND COMMUNITIES
COMPETENCE BASE
DEMAND AND USER ORIENTATION
SYSTEMIC APPROACH


Demand-driven innovation policy
Growing and innovation friendly markets
Activating and engaging users
User-driven innovation policy

Policy framework

The central elements of demand-driven innovation policy

Knowledge and capability development

- **Foresights**
  - Identification of key socio-economic trends and potential leading edge activities
  - Communicating the results to wide audiences
- **Research**
  - Focus on major societal challenges and developments
  - Analysis of demand-side innovations and their potential benefits
- **Education and training**
  - Innovative procurement practises
  - Consumer awareness and readiness to take-up innovations
  - Standards as a means to create stimulus for the market approval and take up of innovations

Regulatory reform

- **Regulatory development**
  - Future oriented, coordinated, innovation friendly regulation
  - Performance based regulation and demanding performance based targets as a way to motivate market actors
- **Recommendations and labelling**
  - Increased transparency as a way to enable well-informed consumer choices
  - Usage norms as a way to influence demand
- **Competition**
  - Stimulation of well-functioning, effective markets
  - Demand and competition as drivers of innovation
- **Standards**
  - Standards that create markets and support innovation
  - Development of the standardi-sation system and procedures

Infrastructure improvements

- **Systemic demand-side innovation policy**
  - Improved coordination and consistency in innovation policy design and implementation
  - Policy actions to promote and enable lead-market development
  - Better achievement of jointly agreed targets through improved coordination and governance of public sector of activities
- **Public private partnerships**
  - Exploring new and more effective ways to build partnerships
  - Creating opportunities for new types of partnerships and effective delivery of public sector services

Incentives for demand- driven innovation

- **Financing and tax incentives**
  - Taxation as a means to create demand for innovations
  - Financing for R&D and innovation projects
- **Pioneering public sector**
  - Setting example, by increasing public sector led pioneering activities
  - Increased resources for demonstration and reference projects
  - New development environments and platforms for piloting innovative products, services and processes
  - Better incentives for innovative public procurement
  - Opening up of data bases and public sector held content for commercial use
  - Increasing digital services and novel service delivery method

Policy framework

The central elements of user-driven innovation policy

Knowledge and capability development

- **Research**
  - More emphasis on user-driven innovation
  - Development of indicators for user-driven innovation
- **Education**
  - Users' role as an active and responsible participants
  - Multi-disciplinary education and multi-skilled citizens
  - Emphasis on arts and design related knowledge and skills
  - Strategic design as a business development tool (e.g. service design)
  - Intellectual property and intellectual asset management in open innovation context
- **Methods and tools**
  - Better availability and use of advanced methods including foresight , business ethnography, internet and user needs analysis

Regulatory reform

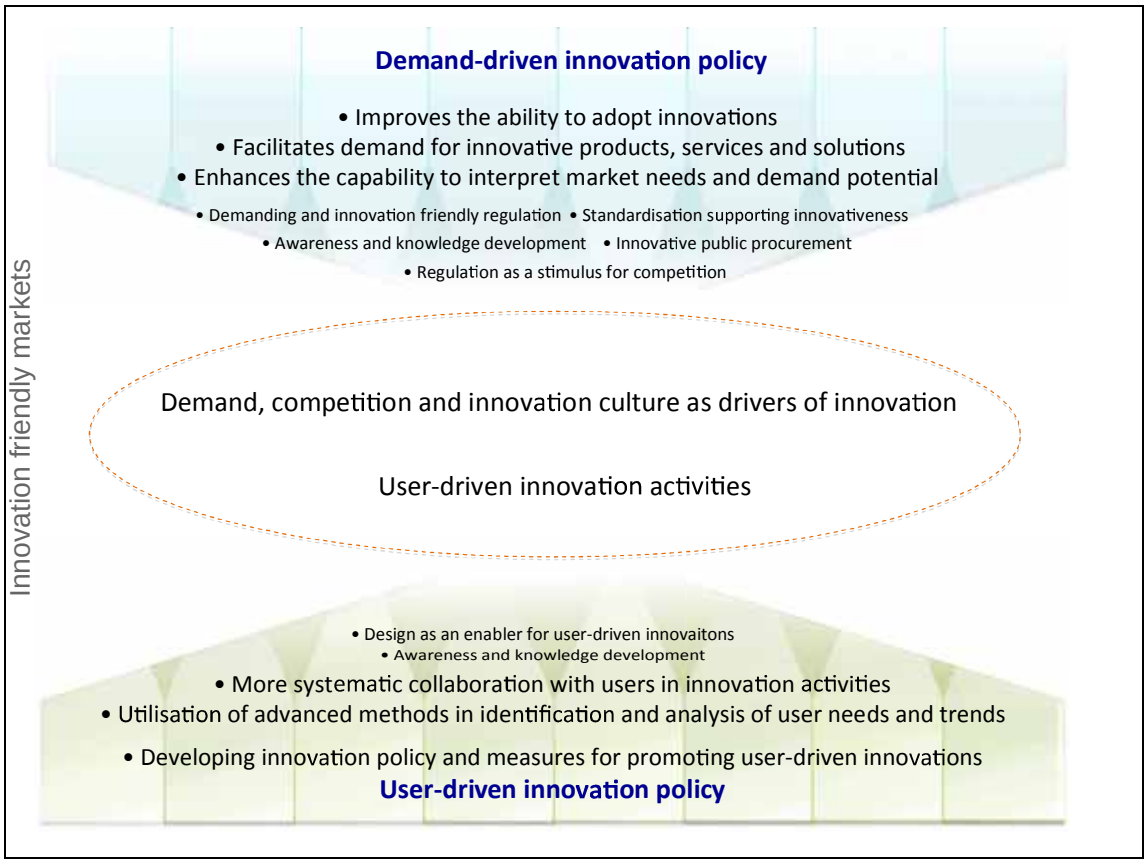
- **Better utilisation of public sector held data and user information**
  - Evaluation of data protection and privacy regulations
  - Making public sector held data more readily usable for user-driven innovation activities
- **Collaboration with users**
  - Regulatory reform to empower citizens influence and ability to make choices
  - Stimulus for partnerships in public service production
- **Intellectual property**
  - Renewal of the institutional framework to make it more suitable and supportive for open and user-driven innovation
  - More consistent regulation of the intangible value and liabilities resulting from user-driven innovation activities

Infrastructure improvements

- **ICT infrastructure**
  - Improvements targeting better quality, trust and more open architectures
  - Open and interoperable ICT-infrastructure supporting user-driven innovation especially within the public sector
- **Development platforms and environments for public private partnership**
  - Support for networks that enable user-driven innovation activities reaching across different sectors and branches of administration
- **Renewal of public sector services**
  - Promoting user-driven development as a mainstream activity within the public sector
  - Adoption of service design principles in the public sector

Incentives for user-driven innovation

- **Financial incentives**
  - New instruments for supporting user-driven innovation
  - New financing criteria for existing instruments enabling better support for user-driven innovation
  - Other new types of incentives for open innovation and for public sector context
- **Building user awareness and channels of influence**
  - Raising awareness of user-driven innovation among citizens, businesses and public sector
  - Stimulus for user influence through empowerment and improved channels of influence



Action programme – what and why? (1/2)

- Background: national innovation strategy and innovation policy review of the government
- The themes in the action programme are based on the analysis of demand and user-driven innovation policy prepared by MEE in spring 2009
- The question now is how to turn the policy content into action
- Action points have been prepared jointly with a wide stakeholder group during autumn 2009

Action programme – what and how (2/2)

- The objective is not to make an all-embracing list of possible actions, but to launch measures that
  - speed up already emerged demand and user-driven innovation activity
  - are concrete but at the same time broad
  - have been prepared in cooperation with stakeholders (to increase the credibility and impact of the policy measures)
  - put demand and user-driven innovation widely into action – in business and in society

Key areas of the action plan

1. **Competitiveness by strengthening knowledge-base and awareness of demand and user-driven innovation**
2. **Innovations by bolstering demand**
3. **Renewal of the public sector as a source and target of pioneering actions**
4. **Incentives for enhancing grass root level initiatives**
5. **More impact from increased usage of user-driven methods**
6. **Networks enhancing diffusion of innovations**
7. **Evaluating the impact of the action plan**

Visit:

www.udi.fi

TYÖ- JA ELINKEINOMINISTERIÖ
ARBETS- OCH NÄRINGSMINISTERIET
MINISTRY OF EMPLOYMENT AND THE ECONOMY

Future of Information in Research and Innovation – Interactive Session

Moderator: Bernard Dumouchel

Keynote address: The Fourth Paradigm: Data Intensive Scientific Discovery

Tony Hey

The Fourth Paradigm: Data-Intensive Scientific Discovery

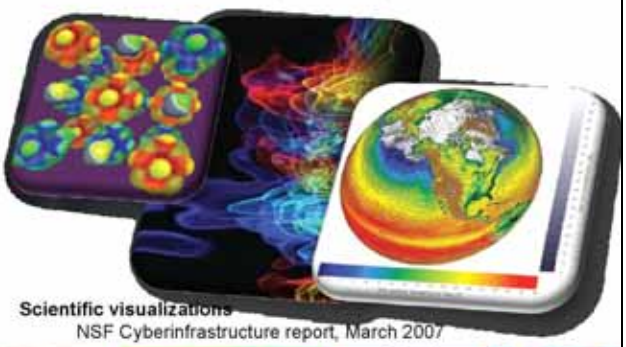
Tony Hey
Corporate Vice President
Microsoft Research

The Data Deluge

A Digital Data Deluge in Research

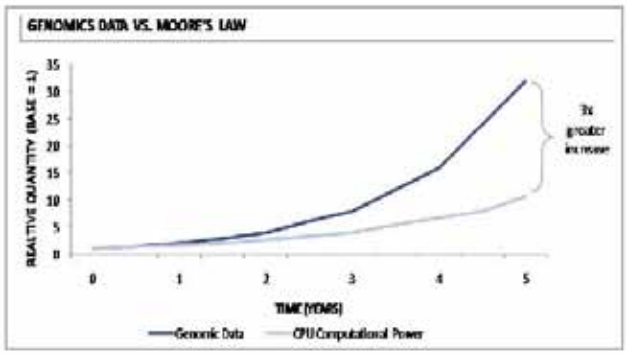
- Data collection
  - Sensor networks, satellite surveys, high throughput laboratory instruments, observation devices, supercomputers, LHC …
- Data processing, analysis, visualization
  - Legacy codes, workflows, data mining, indexing, searching, graphics …
- Archiving
  - Digital repositories, libraries, preservation, …

SensorMap
Functionality: Map navigation
Data: sensor-generated temperature, video camera feed, traffic feeds, etc.



Scientific visualizations
NSF Cyberinfrastructure report, March 2007

The Genomics Revolution



Genomic data is growing exponentially

Statistical methods and machine learning over these large datasets are key technologies to providing insights

Genomics and Personalized Medicine

Adapting treatments to a person's specific genetic make-up:

- Targeting patients who can benefit (*e.g.* 10% of people cannot respond to codeine), and not develop toxicities (*e.g.* Abacavir for HIV).
- Appropriate dosage of a drug by using genetic variants to understand drug metabolism (*e.g.* anti-depressants, beta blockers, opioid analgesics)
- More drug approvals (re-approvals) because can now target the right sub-group based on genetics.

The 'Cosmic Genome' Project

- The Sloan Digital Sky Survey is the first major astronomical survey project:
  - 5 color images and spectra of ¼ of the sky
  - Pictures of over 300 million celestial objects
  - Distances to the closest 1 million galaxies
- Jim Gray from Microsoft Research worked with astronomer Alex Szalay to build the public 'SkyServer' archive for the survey

➢ New model of scientific publishing
  - Have to publish the data before astronomers publish their analysis

Public Use of the SkyServer

- **Posterchild in 21st century data publishing**
  - 380 million web hits in 6 years
  - 930,000 distinct users vs 10,000 astronomers
  - 1600 refereed papers!
  - Delivered 50,000 hours of lectures to high schools
  - Delivered 100B rows of data

- **GalaxyZoo 'Citizen Science' site has over 200,000 volunteers**
  - Hanny's 'Voorwerp'
  - Green Pea galaxies

WorldWide Telescope

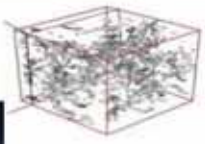
http://www.worldwidetelescope.org/

The Fourth Paradigm

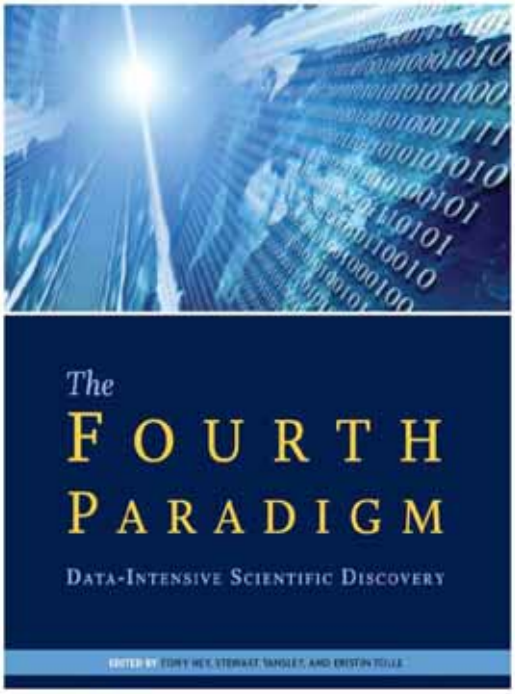
Emergence of a Fourth Research Paradigm

1. Thousand years ago – **Experimental Science**
   - Description of natural phenomena
2. Last few hundred years – **Theoretical Science**
   - Newton's Laws, Maxwell's Equations…
3. Last few decades – **Computational Science**
   - Simulation of complex phenomena
4. Today – **Data-Intensive Science**
   - Scientists overwhelmed with data sets from many different sources
     - Data captured by instruments
     - Data generated by simulations
     - Data generated by sensor networks
   - ➢ eScience is the set of tools and technologies to support data federation and collaboration
     - For analysis and data mining
     - For data visualization and exploration
     - For scholarly communication and dissemination

$$\left(\frac{\dot{a}}{a}\right)^2 = \frac{4\pi G\rho}{3} - \mathrm{K}\frac{c^2}{a^2}$$

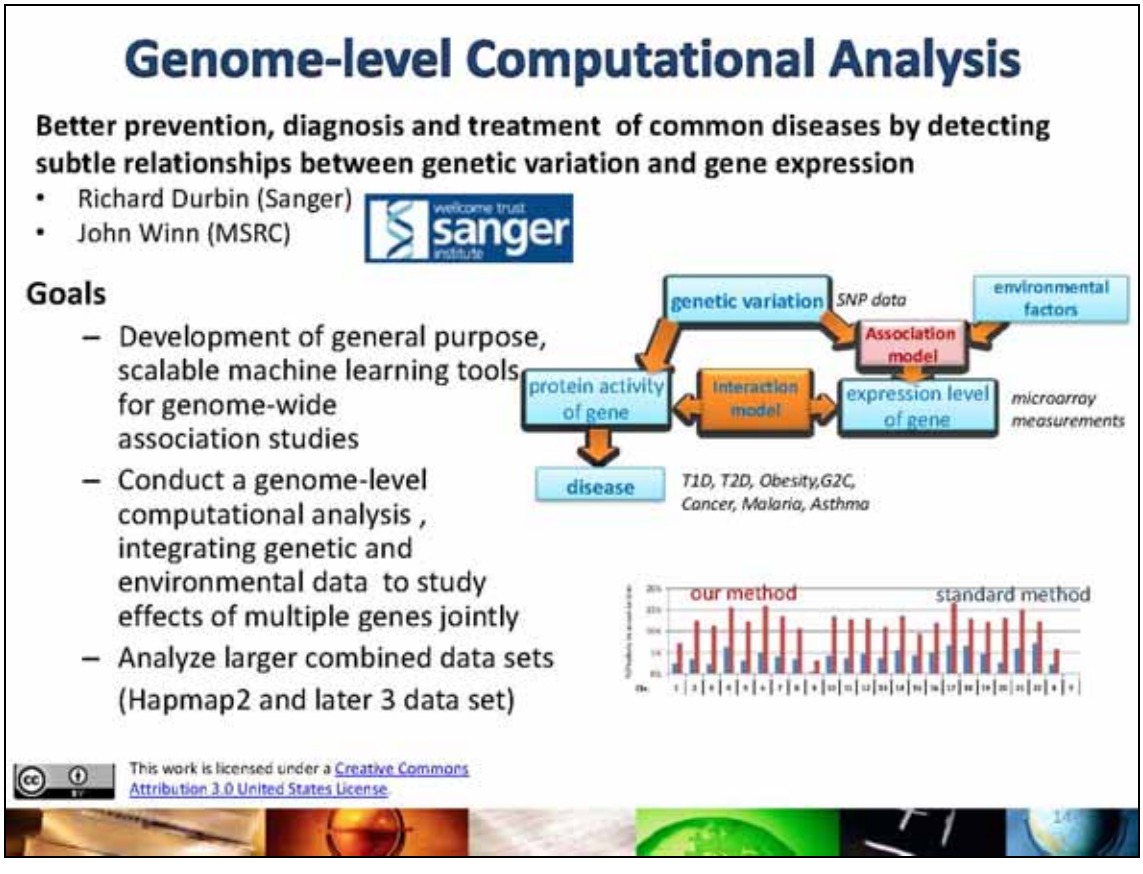


(With thanks to Jim Gray)



Some Examples of Data-Intensive Science


InfoTech | Research
Using Spam Blockers To Target HIV, Too
A Microsoft researcher and his team make a surprising new assault on the AIDS epidemic
BY STEPHEN BAKER AND JAY GREENE
Similar mutations may crop up in computer and medical viruses
This work is licen
Attribution 3.0 U


Genome-level Computational Analysis
Better prevention, diagnosis and treatment of common diseases by detecting subtle relationships between genetic variation and gene expression
• Richard Durbin (Sanger)
• John Winn (MSRC)
welcome trust sanger institute
Goals
– Development of general purpose, scalable machine learning tools for genome-wide association studies
– Conduct a genome-level computational analysis , integrating genetic and environmental data to study effects of multiple genes jointly
– Analyze larger combined data sets (Hapmap2 and later 3 data set)
genetic variation
SNP data
environmental factors
Association model
protein activity of gene
Interaction model
expression level of gene
microarray measurements
disease
T1D, T2D, Obesity,G2C, Cancer, Malaria, Asthma
our method
standard method
This work is licensed under a Creative Commons Attribution 3.0 United States License.

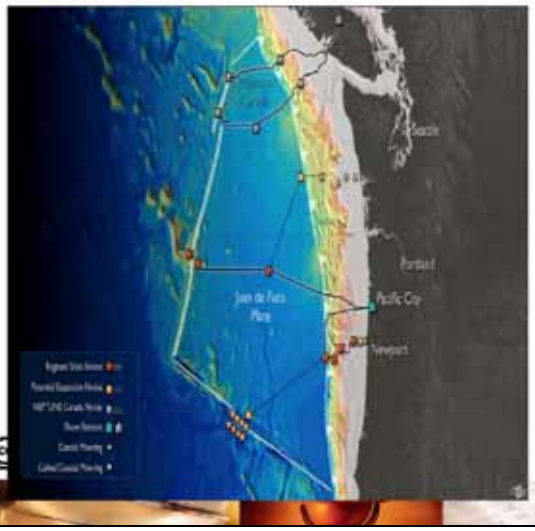
The Swiss Experiment (EPFL, Marc Parlange)

- Climate change affects on the regional hydrologic cycle will have profound implications for the Alps and therefore Europe
- Need for field measurements remains crucial to test simulations and guide the design of new models used in warning networks.
  - There are known areas where predictability is poor yet potential implications are large
  - Larger and more diverse observational spatial scales with appropriate instrumentation
- Partnering with schools to get sensors deployed over a wide spatial area
  - 1000 children from 10-14
  - 'touching' the environment changes how people perceive environmental issues

"Our ability to estimate the hydrologic cycle at regional scales generally remains behind societal needs"

Supporting Smart Sensors and Data Fusion

- The NSF Ocean Observatory Initiative
  - Hundreds of cabled sensors and robots exploring the sea floor
  - Data to be collected, curated, mined
  - OOI Architecture plan of record, store this data in the cloud



Data collected from:
- Ocean floor sensors, AUV tracks, ship-side cruises, computational models

Data moves from **ocean** to shore side **data center** to the **Azure cloud** to your **computer.**

Digital Humanities

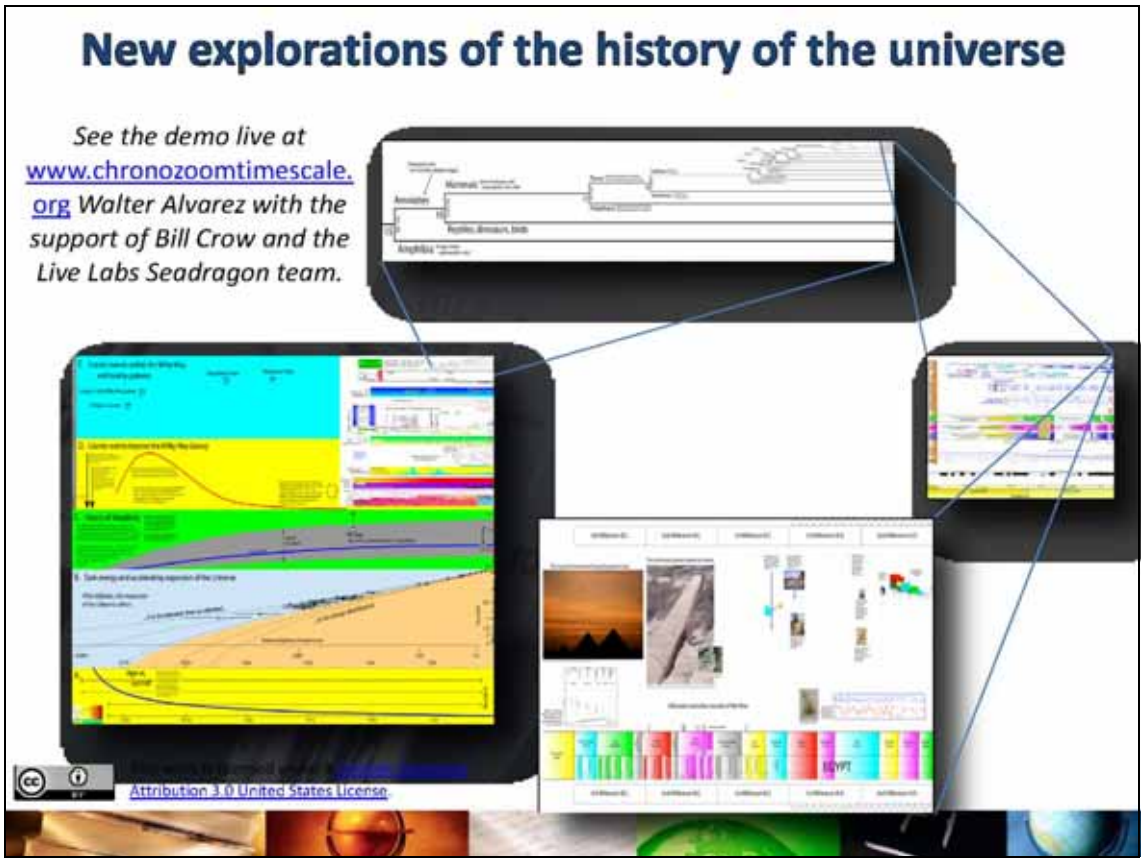
ChronoZoom – History in its broadest possible context …

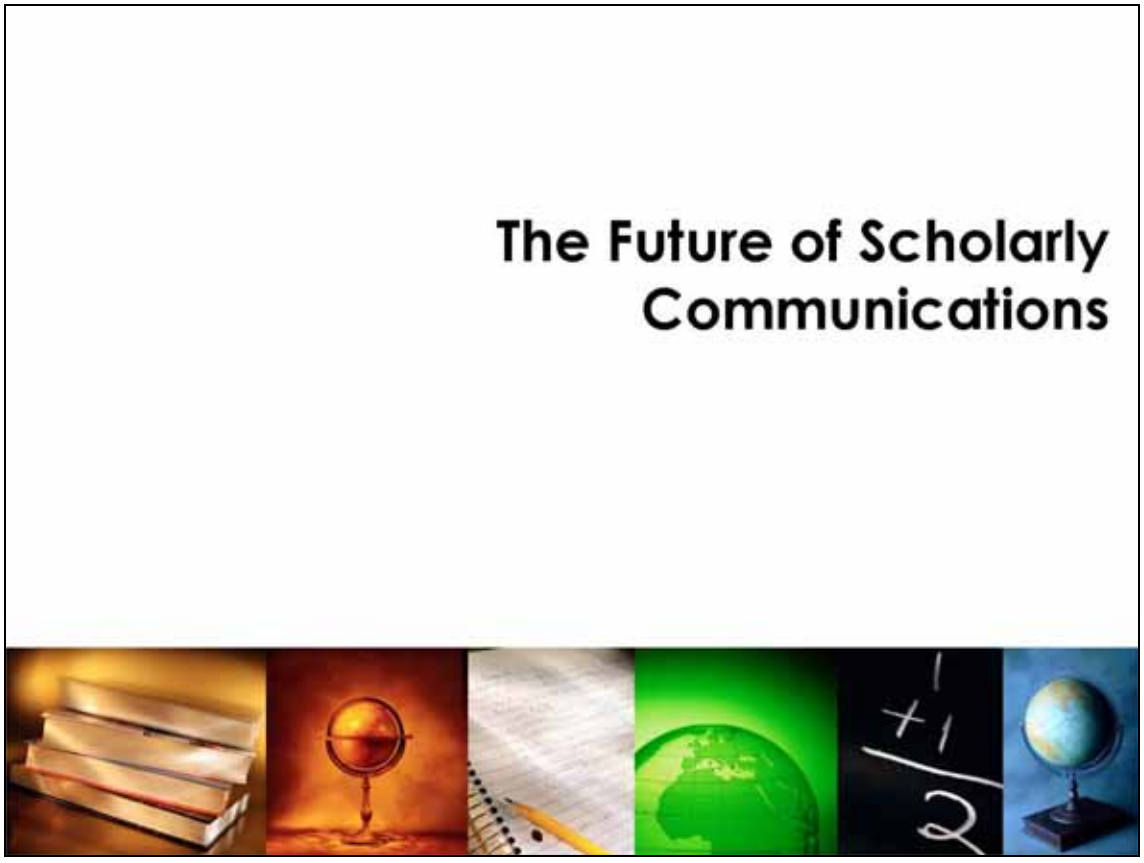
The challenge: exploration of all known time series, and smoothly transition from billions of years down to individual nanoseconds…

This is what Walter Alvarez, Professor of Earth and Planetary Science at University of Berkeley set out to do. And he did it, with the help of Microsoft Research and the Live Labs team.

Our vision is to create an application that allows researchers to browse, overlay, and explore interdisciplinary data sources.

www.chronozoomtimescale.org


New explorations of the history of the universe
See the demo live at www.chronozoomtimescale.org Walter Alvarez with the support of Bill Crow and the Live Labs Seadragon team.
Attribution 3.0 United States License


The Future of Scholarly Communications

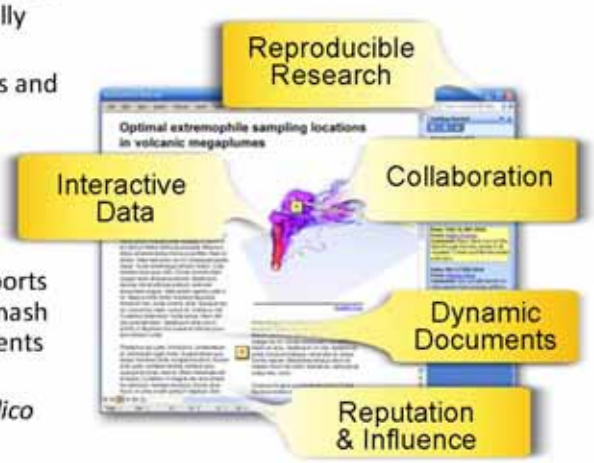
Facilitating the move from static summaries to rich information vehicles

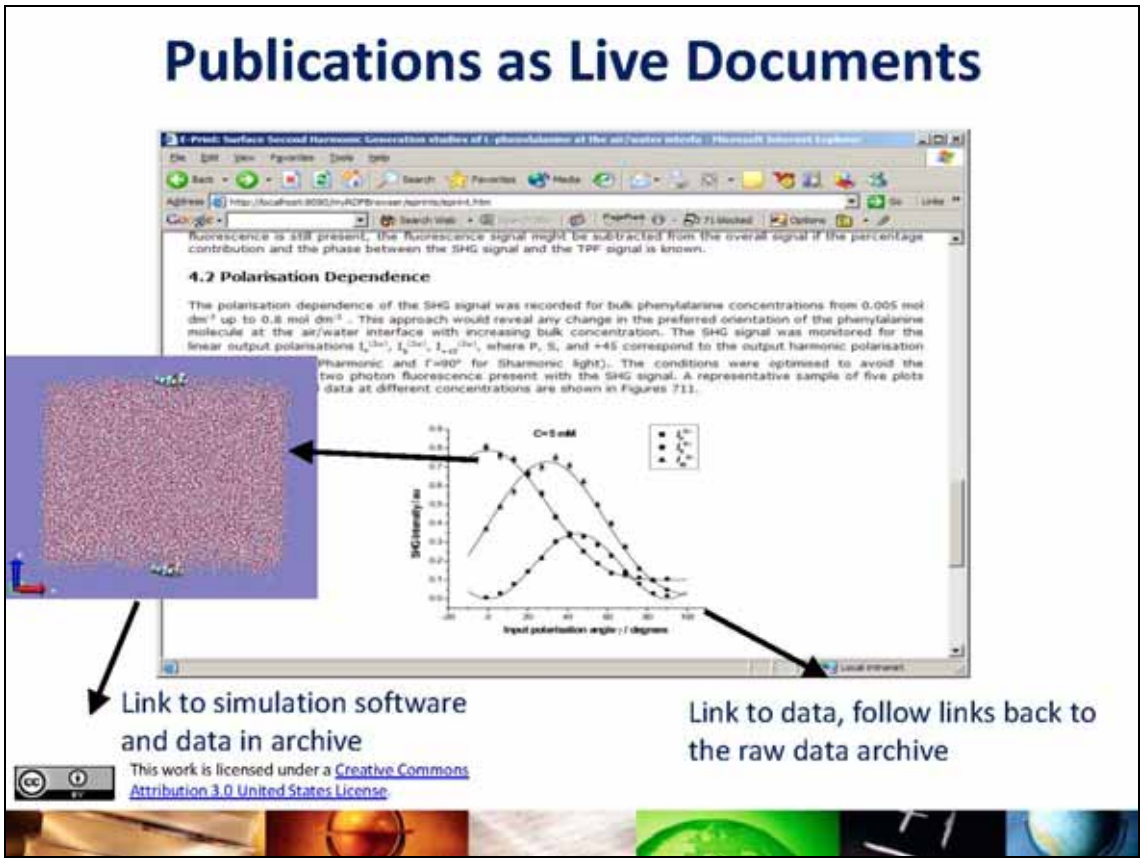
- Pace of science is picking up…rapidly
- The status quo is being challenged and researchers are demanding more
- Why can't a research report offer more …

Envisioning a New Era of Research Reporting

Imagine…

- Live research reports that had multiple end-user 'views' and which could dynamically tailor their presentation to each user
- An authoring environment that absorbs and encapsulates research workflows and outputs from the lab experiments
- A report that can be dropped into an electronic lab workbench in order to reconstitute an entire experiment
- A researcher working with multiple reports on a Surface and having the ability to mash up data and workflows across experiments
- The ability to apply new analyses and visualizations and to perform new *in silico* experiments




Publications as Live Documents
4.2 Polarisation Dependence
Link to simulation software and data in archive
Link to data, follow links back to the raw data archive
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New Forms of Peer Review
FACULTY OF 1000 BIOLOGY
MAJOR ADVANCES. EXPERT OPINIONS.
Tell your librarian what you think of F1000
Customize this site to your areas of interest
Receive regular email alerts
sample evaluation
Cadherin-mediated cell sorting not determined by binding or adhesion specificity.
What is Faculty of 1000 Biology?
5 reasons to subscribe to F1000 Biology
Faculty Member
Comments
Vance Lemmon
Kathleen Green

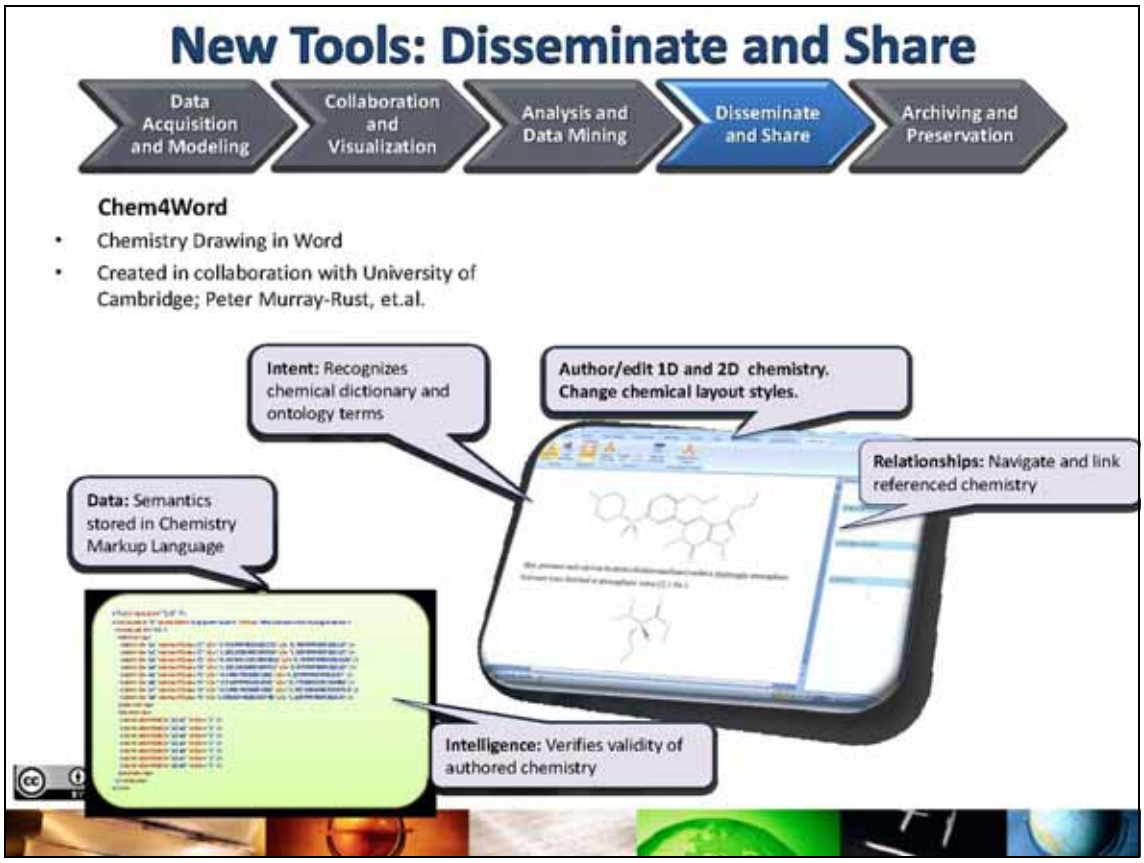
Tagging for Researchers

Lab Notebooks as Blogs?

A record of an experiment that failed...

- Publishable?
- Useful?

With thanks to Jeremy Frey


New Tools: Disseminate and Share
Data Acquisition and Modeling
Collaboration and Visualization
Analysis and Data Mining
Disseminate and Share
Archiving and Preservation
Chem4Word
Chemistry Drawing in Word
Created in collaboration with University of Cambridge; Peter Murray-Rust, et.al.
Intent: Recognizes chemical dictionary and ontology terms
Author/edit 1D and 2D chemistry. Change chemical layout styles.
Relationships: Navigate and link referenced chemistry
Data: Semantics stored in Chemistry Markup Language
Intelligence: Verifies validity of authored chemistry


New Tools: Archiving and Preservation
Data Acquisition and Modeling
Collaboration and Visualization
Analysis and Data Mining
Disseminate and Share
Archiving and Preservation
Default web UI with CSS support and custom ASP.Net controls
Zentity
Native support for RSS, OAI-PMH, OAI-ORE, AtomPub and SWORD
Flexible data model enables many scenarios and can be easily extended over time
A semantic computing platform to store and expose relationships between digital assets
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Research Repositories

The Michigan Daily, September 24, 2007

- University of Michigan's libraries are canceling some journal subscriptions because of budget cuts and the increasing costs of the subscriptions
- University Librarian Paul Courant said that about 2,500 were canceled in the 2007 fiscal year
- The University Library budget has gone up by an average of 3.1 percent per year since 2004
- According to Library Journal magazine, the average subscription price of national arts and humanities journals has increased 6.8 percent per year since 2003. National social science journals increased 9.2 percent and national science journals increased by 8.3 percent

Current Scholarly Publishing Model is in Crisis

- Journal subscriptions rising faster than library budgets
  - Cancelling subscriptions, no freedom for new journals in new and emerging fields
- Web technology and digital media now make dissemination of knowledge 'easy' and 'free' without the traditional paper journals
  - Similar dilemma to that of the music industry with MP3 and 'free' digital copies

Open Access Repositories and OA Policies

- **Subject Repositories**
  - PubMedCentral, arXiv, RePEc, DBLP …
  - Proposed Federal Research Public Access act
- **Institutional Repositories and OA Policies**
  - Registry of OA Repositories http://roar.eprints.org/
  - Over 100 OA policies
    - Harvard, MIT, University of California …
  - Over 22M items in over 1000 OA repositories worldwide
- **Open Access Models**
  - Gold (author pays) – e.g. PLoS
  - Green (self deposit) – e.g. arXiv
- **Protocols**
  - OAI-PMH, OAI-ORE, SWORD, etc.

Research Repositories

- Repositories will contain not only full text versions of research papers but also 'grey' literature such as workshop papers, presentations, technical reports and theses
  - In the future repositories will also contain data, images and software
- Federated databases of scientific information and cross database search tools
  - NIH National Library of Medicine
  - WorldWideScience.org

Virginia Tech: Electronic Theses and Dissertations

Requests for ETDs grew from around 220,000 in 1997/98 to nearly 20M by 2006/07

10,595
Electronic
Theses and Dissertations

including available, restricted and withheld ETDs

etds.vt

http://scholar.lib.vt.edu/theses/

FOR ETD AUTHORS

- GUIDES
  - Copyright
  - ETD Examples
  - General Information for Authors
  - Graduate School Catalog
  - Graduate School Guidelines
  - Preparing your VT ETD
- LEARNING TOOLS
  - Adobe PDF Tutorial VT Workshop

VT ETDs

- Browse VT ETDs
- Search VT ETDs
- Federated Search search multiple ETD libraries simultaneously through the ETD OAI Union Catalog (not maintained by DLA)

Find out about ETDs

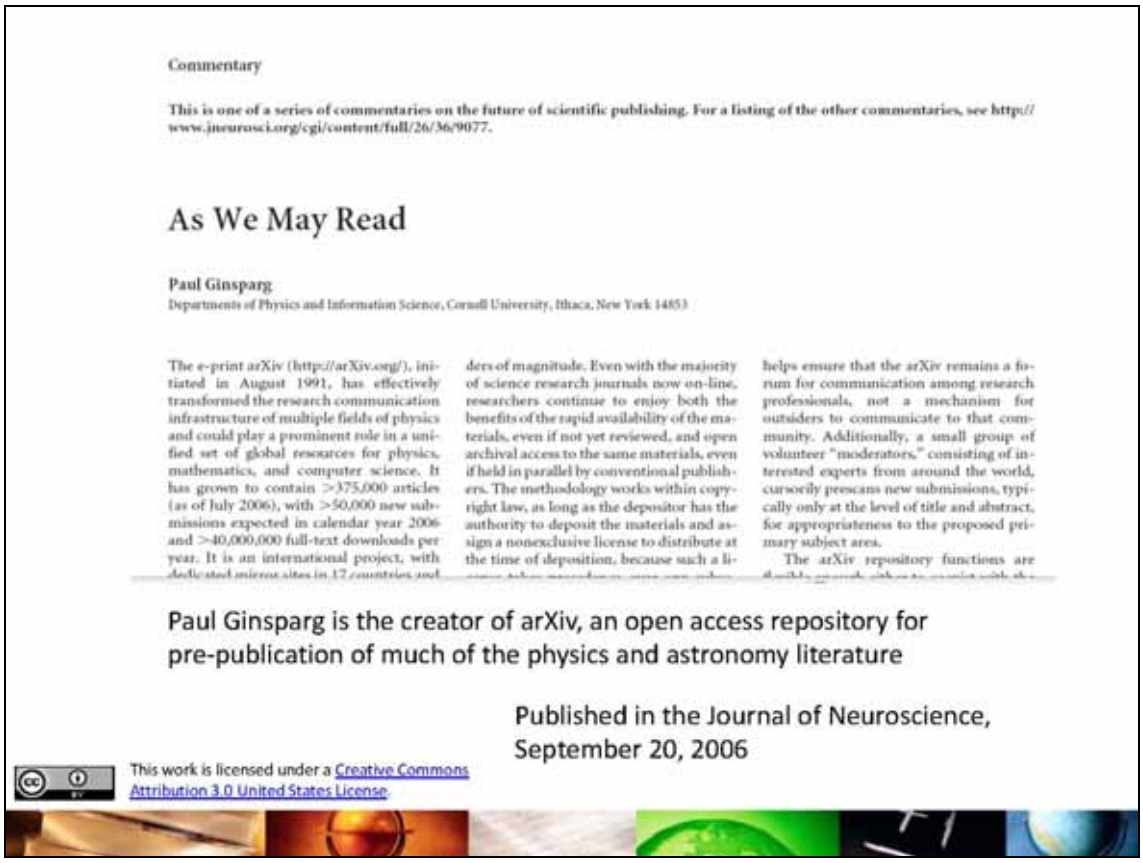
- Facts, Data, Information including archiving, servers, staffing, use, etc.
- Survey Results: Graduates Whose ETDs Are Accessible Worldwide (556 kb)
- Presentations and Publications about VT ETDs

User Survey Form

Share your opinions

NDLTD

Networked Digital Library of Theses and Dissertations



Commentary

This is one of a series of commentaries on the future of scientific publishing. For a listing of the other commentaries, see http://www.jneurosci.org/cgi/content/full/26/36/9077.

As We May Read

Paul Ginsparg
Departments of Physics and Information Science, Cornell University, Ithaca, New York 14853

The e-print arXiv (http://arXiv.org/), initiated in August 1991, has effectively transformed the research communication infrastructure of multiple fields of physics and could play a prominent role in a unified set of global resources for physics, mathematics, and computer science. It has grown to contain >375,000 articles (as of July 2006), with >50,000 new submissions expected in calendar year 2006 and >40,000,000 full-text downloads per year. It is an international project, with

ders of magnitude. Even with the majority of science research journals now on-line, researchers continue to enjoy both the benefits of the rapid availability of the materials, even if not yet reviewed, and open archival access to the same materials, even if held in parallel by conventional publishers. The methodology works within copyright law, as long as the depositor has the authority to deposit the materials and assign a nonexclusive license to distribute at the time of deposition, because such a li-

helps ensure that the arXiv remains a forum for communication among research professionals, not a mechanism for outsiders to communicate to that community. Additionally, a small group of volunteer "moderators," consisting of interested experts from around the world, cursorily prescans new submissions, typically only at the level of title and abstract, for appropriateness to the proposed primary subject area.

The arXiv repository functions are

Paul Ginsparg is the creator of arXiv, an open access repository for pre-publication of much of the physics and astronomy literature

Published in the Journal of Neuroscience, September 20, 2006

Ginsparg's Conclusions?

"On the one-decade time scale, it is likely that more research communities will join some form of global unified archive system without the current partitioning and access restrictions familiar from the paper medium, for the simple reason that it is the best way to communicate knowledge and hence to create new knowledge."

"Ironically, it is also possible that the technology of the 21st century will allow the traditional players from a century ago, namely the professional societies and institutional libraries, to return to their dominant role in support of the research Enterprise."

Towards a Semantic Future

Today...

Computers are great **tools** for

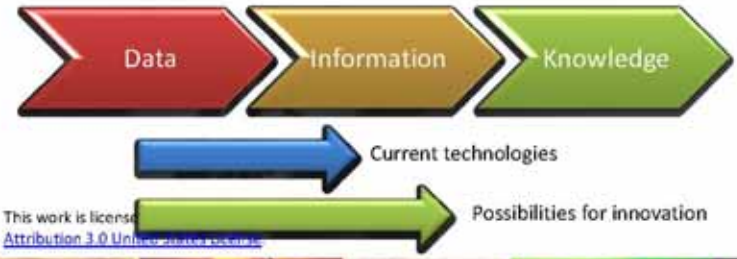
huge amounts of **data**

For example, Google and Microsoft both have copies of the entire Web for indexing purposes

Need for Semantic Computing?

- Semantic computing combines concepts and technologies that
  - Enable data modeling
  - Capture relationships
  - Allow communities to define ontologies
  - Exploit machine learning

➢ Will empower computers to reason about the data



Tomorrow…

Computers will still be great **tools** for

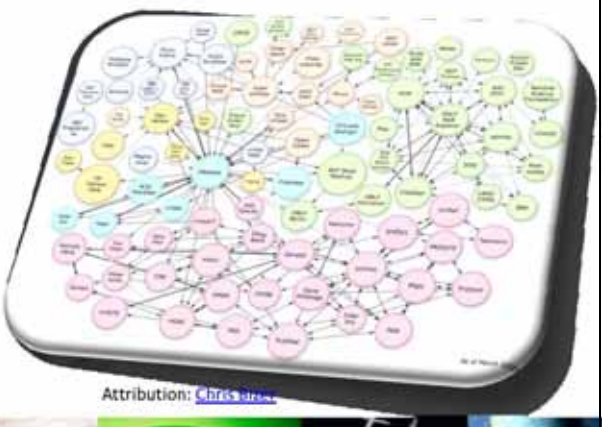
huge amounts of **data**

We would like omputers to also help with the **automatic**

of the world's **information**

Moving to a world where all data is linked …

- Data/information is inter-connected through machine-interpretable information (e.g. paper X is about star Y)
- Social networks are a special case of 'data meshes'



- A knowledge ecosystem:
  - A richer authoring experience
  - An ecosystem of services
  - Semantic storage
  - Open, Collaborative, Interoperable, and Automatic

Attribution: Chris Brew

… and can be stored/analyzed in the Cloud

Vision of Future Research Cyberinfrastructure using Client + Cloud resources

research.microsoft.com/en-us/collaboration/tools

Dryad; DryadLINQ
Windows HPC release

Computational Biology Toolkit
Enables and accelerates fundamental advances in biology

F#
Collaboration with the academic and research community on F#'s typed functional and object-oriented programming on the .NET platform

Plug-ins for Office
Ontology Add-in for Word
Article Authoring Add-in for Word
Chem4Word – Chemistry Drawing in Word
Microsoft Electronic Journals Service
Open XML Document Viewer

Software Engineering Tools
Spec#: Program verifier for C# extended with design by contract
VCC: Program verifier for Concurrent C
PEX: automatic unit testing tool for .NET
CHESS: Unit testing tools for concurrent Win32 executable and .NET

Windows Azure:

Free PDF Download
Amazon Kindle version; Paperback print on demand

http://research.microsoft.com/fourthparadigm/

- "The impact of Jim Gray's thinking is continuing to get people to think in a new way about how data and software are redefining what it means to do science."
- — **Bill Gates,** Chairman, Microsoft Corporation
- "One of the greatest challenges for 21st-century science is how we respond to this new era of data-intensive science. This is recognized as a new paradigm beyond experimental and theoretical research and computer simulations of natural phenomena—one that requires new tools, techniques, and ways of working."
- — **Douglas Kell,** University of Manchester
- "The contributing authors in this volume have done an extraordinary job of helping to refine an understanding of this new paradigm from a variety of disciplinary perspectives."
- — **Gordon Bell,** Microsoft Research


Microsoft
Your potential. Our passion.™
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Multilingual WorldWideScience.org: Accelerating Discovery through Multilingual Translations

Walter L. Warnick


Multilingual WorldWideScience: Accelerating Discovery through Multilingual Translations
Walter L. Warnick, Ph.D.
Director, Office of Scientific and Technical Information
U.S. Department of Energy
U.S. DEPARTMENT OF ENERGY
osti.gov


With the launch of Multilingual WorldWideScience.org, we are . . .
• Opening vast reservoirs of heretofore under-utilized scientific knowledge
• Providing equal access to science for anyone on the Internet
• Promoting scientific collaboration, participation, and transparency
. . . and accelerating scientific discovery!

Science Advances Only if Knowledge is Shared

"If I have seen further it is only by standing on the shoulders of giants." **Sir Isaac Newton**

Corollary 1: Scientific discovery can be accelerated by accelerating access to worldwide scientific information.

The case for WorldWideScience.org.

Corollary 2: Multilingual translations of science will further accelerate scientific discovery.

The case for *Multilingual* WorldWideScience.org

The "Accelerating" Power of WorldWideScience.org

Overcoming the researcher's practical limitations:

1. Not knowing "what's out there." (examples: Korean medical journals, Australian Antarctic data, South African scientific research database)
2. Inadequate time to search scientific databases one by one. (examples: UK PubMed Central, Ginsparg's arXiv.org)
3. Inability to sort compiled results by relevance.

By filling these gaps, WorldWideScience.org has accelerated access to scientific information.

Brief History: Federated Search and WorldWideScience.org

Deep Web

- where science is
- hundreds of times larger than the “surface web”
- generally not “googleable,” or searchable, by major search engines

Deep Web Solution: Federated Searching

- A single user query simultaneously sent to multiple deep web databases.
- Federated search engine sorts and presents results in relevance-ranked order.
- Overcomes the 3 practical limitations.
- No burden on individual database “owners.”

Federated Search Examples

- Science.gov – searches across all U.S. federal science agencies' databases (200 million pages)
- Similar – but different -- experiences outside science:
  - *Kayak.com* – "compare hundreds of travel sites at once"
  - *Pricegrabber.com* – comparison shopping across multiple merchants

Global Federated Search

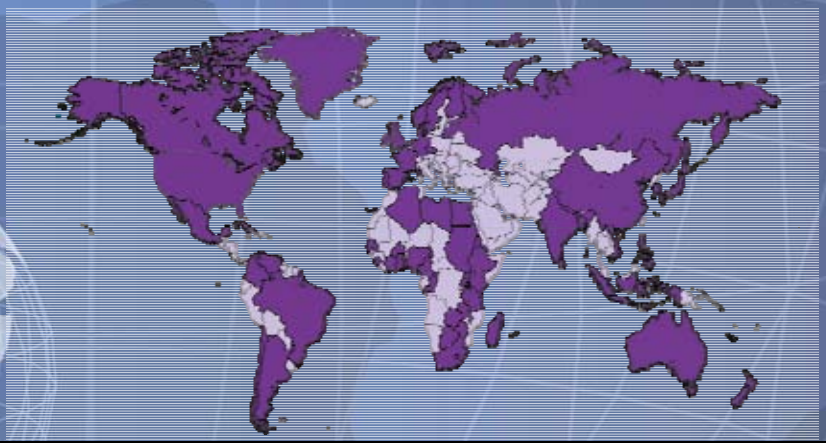
- Taking the Science.gov model global – WorldWideScience.org
  - Initial partnership between U.S. Department of Energy and the British Library (2007)

Global Federated Search

- Transition to multilateral governance (WorldWideScience Alliance) and ICSTI sponsorship (2008)

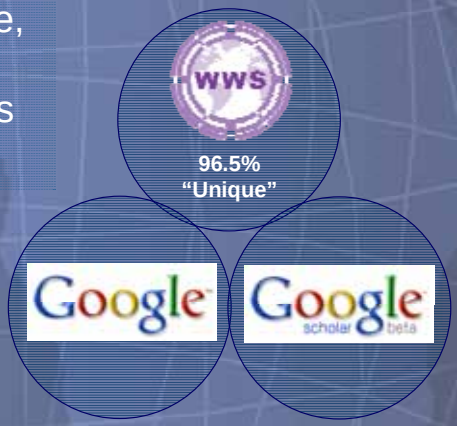
WorldWideScience – Facts and Figures

- Tremendous growth in search content: from 10 nations to 65 nations in 3 years
- > 400 million pages
  - From well-known sources: *e.g.,* PubMed, CERN, KoreaScience
  - To more obscure sources: *e.g.,* Bangladesh Journals Online



WorldWideScience – Fills Key Niche in Scientific Discovery

- In comparison of search results from identical queries on WWS, Google, and Google Scholar, only 3.5% overlap (i.e., WorldWideScience is 96.5% unique)



Accelerated access → Accelerated discovery: the case for WorldWideScience.org

Now, the case for *Multilingual* WorldWideScience.org . . .

Consider this . . .
While English is the *lingua franca* for science, these are the world's most widely spoken languages:

Rank	Language	Estimated Number of Speakers
1	Mandarin Chinese	1,051,000,000
2	English	510,000,000
3	Hindi/Urdu	490,000,000
4	Spanish	420,000,000
5	Arabic	280,000,000
6	Russian	255,000,000
7	Portuguese	230,000,000
8	German	229,000,000
9	Bengali	215,000,000
10	French	130,000,000
11	Japanese	127,000,000

(Source: Wikipedia)

Increasing Globalization of Science Calls for Multilingual Search Capabilities . . .

- *Is there Science beyond English? Initiatives to increase the quality and visibility of non-English publications might help to break down language barriers in scientific communication* (Meneghini and Packer, Nature, 2007)
- *Science's Language Problem: As globalization increases, communication between linguistic communities could become a serious stumbling block* (Barany, Business Week, 2005)
- *Science on the Rise in Developing Countries* (Holmgren and Schnitzer, PLoS Biology, 2004)

Of the world's "top 400" institutional repositories, 250, or 63%, have some or all non-English content.

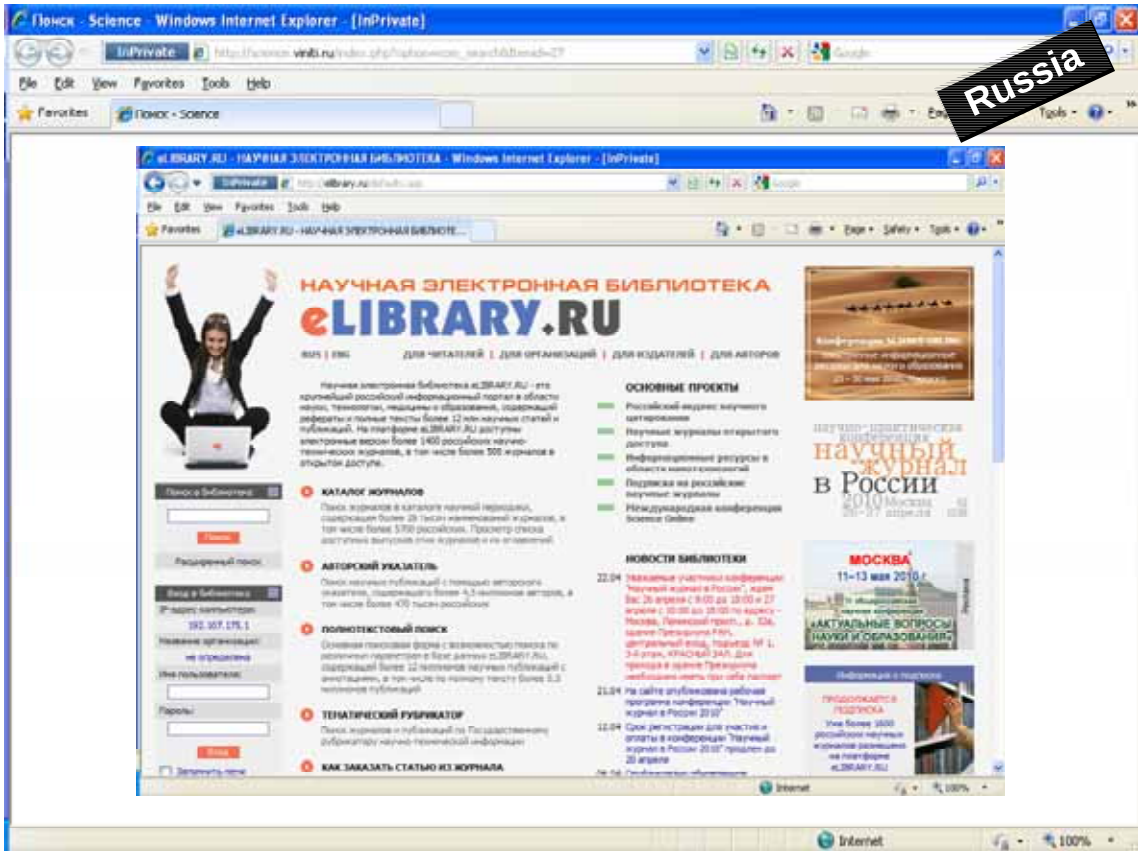
Examples:

- HAL CNRS -- French
- Kyoto University Research Repository – Japanese
- Leiden University Digital Repository -- Dutch
- CSIC (Spanish National Research Council)

(Source: Cybermetrics Lab, Spain)

Major Non-English Science "Producers"


China
中国科学技术信息研究所
国家工程技术数字图书馆

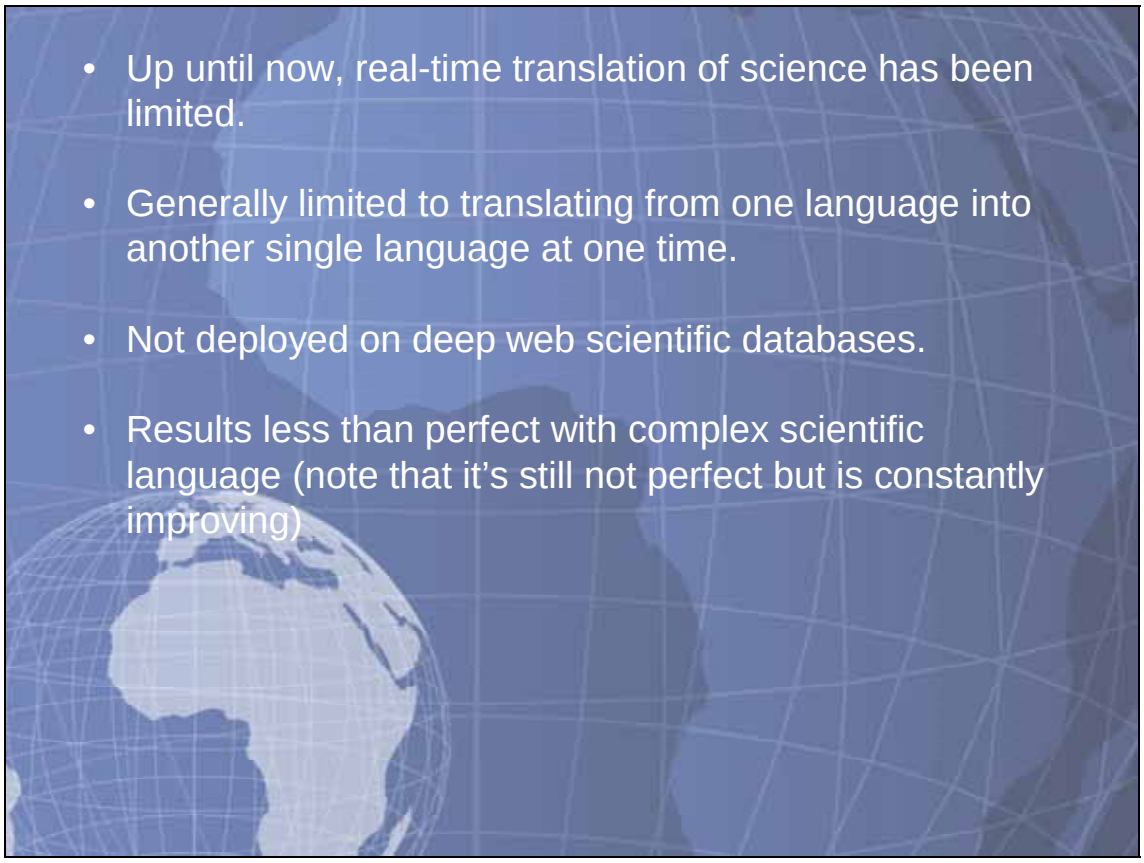

Russia
НАУЧНАЯ ЭЛЕКТРОННАЯ БИБЛИОТЕКА
eLIBRARY.RU

- Japan
- France
- Germany
- Brazil

. . . and many other countries.

To further accelerate access to science, multilingual translations are needed in both directions:

- Translation of English content for non-English speakers . . . and . . .
- Translation of non-English content for English speakers


• Up until now, real-time translation of science has been limited.
• Generally limited to translating from one language into another single language at one time.
• Not deployed on deep web scientific databases.
• Results less than perfect with complex scientific language (note that it's still not perfect but is constantly improving)


Now, we have the essential ingredients for real-time translation of science
• National science databases in multiple languages
• Federated search
• Multilingual translation on both front and back end of the user experience
A public-private partnership, introduced as
Multilingual WorldWideScience.orgBeta
WORLDWIDE SCIENCEAlliance
by Deep Web TECHNOLOGIES
Translations powered by Microsoft Translator
Enabling Science and Innovation
ICSTI
International Council for Scientific and Technical Information

Here's how it works . . .

1. A Chinese scientist submits a query in Chinese to Multilingual WorldWideScience.org.
2. MWWS.org uses Microsoft to translate the Chinese query into individual languages of source databases (English, French, Portuguese, Russian, etc.)
3. MWWS.org sends the translated queries to corresponding databases, which search their contents and return results in native languages to MWWS.org.
4. MWWS.org uses Microsoft to translate native language results into Chinese and presents results to the user in relevance-ranked order.

Conversely, an English-speaking user could have a query translated into languages of non-English databases and then get results back in English.

Closing Address

President, ICSTI

and

ICSTI 2011

Welcome to Beijing

Wu Yishan

Conference Programme and Schedule

JUNE 10, 2010, time	PROGRAMME
8.00 - 9.00	Registration and coffee/tea
	WELCOME AND FOUNDATIONS Session chairman: *Erkki KM Leppävuori*, President and CEO, VTT Technical Research Centre of Finland
9.00 - 9.10	**Welcome from the hosts**; *Marjut Kokko*, Chairman of the Board, Finnish Information Specialists
9.10 - 9.25	**Welcome from the hosts: What is information worth – the value of information in the innovation process**; *Erkki KM Leppävuori*, President and CEO, VTT Technical Research Centre of Finland
9.25 - 10.10	**Opening keynote address: In search for continuous renewal**; *Mikko Kosonen*, President, Sitra, the Finnish Innovation Fund
10.10 - 10.40	Break & exhibition
	INFORMATION AS THE LIFEBLOOD OF RESEARCH AND INNOVATION – FINNISH CASES Session chairman: *Erkki KM Leppävuori*, President and CEO, VTT Technical Research Centre of Finland
10.40 - 11.05	**Case KONE**; *Jussi Oijala*, Senior Vice President, Global Technology, KONE Corporation
11.05 - 11.30	**New information literacy – perspective of small and medium-sized enterprises**; *Mika Waris*, Director of Marketing and Business Services, National Board of Patents and Registration of Finland
11.30 - 12.00	**Innovation landscapes for Tekes programmes**; *Raine Hermans*, Director, Impact analysis, Tekes, the Finnish Funding Agency for Technology and Innovation, and *Laura Ruotsalainen,* Information analyst, VTT Technical Research Centre of Finland
12.00 - 12.15	Buffer time
12.15 - 13.30	Lunch & exhibition
	INTELLIGENT INFORMATION SOLUTIONS AND SERVICES Session chairman: *Pam Bjornson*, President, NRC-CISTI, the National Research Council Canada Institute for Scientific and Technical Information
13.30 - 14.10	**Keynote address: Towards smart service: KISTI intelligent system using semantic web technology**; *Hee-Yoon Choi*, Director General, Knowledge Information Center, Korea Institute of Science and Technology Information
14.10 - 14.35	**Smart Labs for smart people: New ways to collect, curate and share information**; *Jeremy Frey*, Professor, School of Chemistry, University of Southampton
14.35 - 15.00	**Virtual workflow tools to enhance the research process**; *Lee-Ann Coleman*, Head of Scientific, Technical & Medical Information, the British Library
15.00 - 15.30	Coffee break & exhibition
15.30 - 15.55	**Innovations in multimedia search and retrieval**; *Behrooz Chitsaz*, Director of Intellectual Property, Microsoft Corporation
15.55 - 16.20	**Sovereign within a Sovereign. Library of Congress online: Classification for a gateway to web resources?** *Jolande Goldberg*, Senior Cataloging Policy Specialist, Library of Congress, USA
16.20 - 16.45	**Closing keynote address: Accelerating scientific discovery through openness and collaboration**; *Jay Katzen*, Managing Director, Academic and Government Products, Elsevier Science and Technology Division
16.45 - 17.00	**Closing address of the day**; *Wendy Warr*, President, Wendy Warr & Associates
18.30	Conference dinner

JUNE 11, 2010, time	PROGRAMME
8.00 - 8.45	Morning coffee/tea
	CREATING THE FUTURE – TOWARDS THE GLOBAL INNOVATION ECONOMY Session chairman: *Brian Hitson*, Associate Director, U.S. Dept. of Energy's Office of Scientific and Technical Information (OSTI)
8.45 - 9.25	**Keynote address: Making open science real**; *Adam Bly*, Founder and CEO, Seed Media Group
9.25 - 9.45	**Demand- and user-driven innovation policy – content and actions**; *Petri Lehto*, Head of Division, Finnish Ministry of Employment and the Economy, Innovation department
9.45 - 11.00	**Future of information in research and innovation – interactive session**; Moderator: *Bernard Dumouchel*, ICSTI; participants: *Richard Boulderstone*, the British Library; *Eleanor Frierson*, U.S. National Agricultural Library; *Roberta Shaffer*, U.S. Library of Congress; *R. Sivadas*, Scope eKnowlege Center
11.00 - 11.30	Break & refreshments
11.30 - 12.10	**Keynote address: The Fourth paradigm: Data-intensive scientific discovery**; *Tony Hey*, Corporate Vice President of the External Research Division of Microsoft Research
12.10 - 13.00	**Multilingual WorldWideScience.org: Presentation and Ceremony. WorldWideScience.org: Accelerating Discovery through Multilingual Translations**; *Walter Warnick*, U.S. Department of Energy, Office of Scientific and Technical Information, demo by *Abe Lederman*, Deep Web Technologies, Inc. – Ceremony featuring *Walter Warnick*, *Richard Boulderstone, Tony Hey, Wu Yishan,* Institute of Scientific and Technical Information of China – ISTIC, *Yuri Arsky*, All-Russian Institute of Scientific and Technical Information – VINITI
13.00 - 13.15	**Closing address**; President, ICSTI; and **ICSTI 2011 – Welcome to Beijing**; *Wu Yishan*, ISTIC
13.15 - 14.30	Closing lunch

Series title, number and report code of publication

VTT Symposium 267
VTT-SYMP-267

Author(s)
Kirsi Tuominen (ed.)

Title

From Information to Innovation
ICSTI Annual Conference

Abstract

Information is the lifeblood of innovation. Throughout the world companies, universities, research organizations as well as governments are working to discover new frontiers and create innovations for the world's economic and social progress. The growth of the body of information and the ease of access to information are unprecedented in human history. Yet paradoxically, effective management of information is more challenging than ever before.

From Information to Innovation is the main theme of the ICSTI Annual Conference and Exhibition 2010 in Helsinki and will highlight the significance of information as the enabler and catalyst for scientific, technical and business developments and point to elements of success in building the future. The one-and-a-half day conference program approaches the main theme from various thought-provoking perspectives presented by significant opinion leaders and experts around the world.

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