The K* Green Paper
Draft Annotated Outline

Version 4.0 (April 5th 2012)

1 K* Green Paper Timeline

- Draft Zero, Alex Bielak (20-03-12)
- V1.0. Input from: Alex Bielak, Jason Blackstock, Amanda Cooper, Elin Gwyn, Jeff Kinder, Colin Mayfield, David Phipps, Elizabeth Shantz, Louise Shaxson) (21-03-12)
- v 2.0. Substantive Additions: Laxmi Pant (26-03-12)
- v 3.0. Substantive Additions and Commentary: Alex Bielak, Catherine Fisher, Laurens Klerkx, Laxmi Pant, David Phipps, Gerd Schoenwalder, Nik Soni (31-03-12), Louise Shaxson, Elizabeth Shantz.
- V4.0. – for distribution to K* Conference participants via website. Substantive addition of Analysis and Commentary, drawing on K* Conference Survey. Includes input on tools, toolkits and networks, and gaps: Anne Middleton and Laxmi Pant, with Furqan Asif, Alex Bielak and Laurent Gemar. (05-04-12)
- v4.1. To be shaped further at K* Steering and International Advisory Committee + guests meeting (April 28th)
- v5.0 To be released for comment and input via Wiki (May, 2012)
- White Paper: to be drafted in the summer of 2012
- Peer Reviewed Editorial: to be submitted summer of 2012

2 Please direct correspondence to Dr. Alex Bielak, Senior Fellow and Knowledge Broker, UNU-INWEH alex.bielak@unu.edu
Introduction to the Green Paper and process

- This annotated Green Paper outline is an integral part of the K* Conference and is being made available along with several appendices prior to the meeting, both to serve as a resource and stimulate discussion for the spectrum of K* players. Though it stands alone, it is best read with two associated documents, an analysis of the results of a survey canvassing participants before the conference, and two appendices.

- After the conference, the Green Paper – with inputs from the conference such as case studies, discussion results etc. included – will be made live as a wiki and further input crowd sourced to broaden the conversation. We’ll also look to an editorial or review piece in a peer reviewed journal as a formal contribution to the literature. Once that phase is complete (we hope by ~ mid-2012), a White paper will be drafted that can ultimately be used, irrespective of sector or geography, as a rallying point for the work of individual organizations as well as common purpose.

- We are keenly aware – and the Green Paper and survey results serve to emphasise this - that what is being learned in some countries and sectors is not known about in others.

- The Green paper feeds into our goal of establishing a baseline understanding of the global K* community and the beginnings of a global learning network, along with the mechanisms to sustain it.

- Ultimately all our activities as K* practitioners have an ultimate outcome of achieving improved efficiency and accelerating the impact of our respective initiatives as a result of these improved linkages.

Green Paper Structure

- This annotated outline version of the Green Paper has been iteratively constructed, largely by some of the members of the Steering Committee and International Advisory Committee for the K* conference. Notable additions have been provided by others (principally Anne Middleton and Laxmi Pant - see page 1) who have undertaken an analysis of a survey sent to participants prior to the conference. Thought the content is still “rough” in places, and will doubtless be much edited and added to down the line, it constitutes an excellent first cut at the challenges and opportunities we have before us.

- The conclusions of this analysis have been included to some extent in the body of the Green Paper outline. The results – including the first-ever extensive listing of K* toolkits, tool links and on-line forums – are included in the appendices. An additional analysis of the link types will be included in a subsequent version of the paper. We hope that will eventually lead to a meta-site that allows people to search for such resources in a variety of ways, e.g. by sector, by type and geographically.

Alex Bielak
K* Conference Chair

alex.bielak@unu.edu

tinyurl.com/KStarConference K* Survey Green Paper v4.0 (05-04-12)
The K* Green Paper - Draft Annotated Outline

- **Introduction and origins of K* initiative**

- **Need for K*/ Context Significance**
  - Growing support globally from governments and decision makers in industry, health care and civil society both rhetorically and in terms of dedicated resources
  - Reference to knowledge economy.
  - Demand for K* does not only come from governments. Policymakers, civil society groups, researchers, and so forth use knowledge and evidence in different ways, at least potentially. While concrete impact on policy may be the holy grail, influence on relevant debates even before they impact policy is important too. In fact, this often happens in sequence.
  - Need to define a global understanding of K* practice, develop ongoing dialogue for sharing and professional development, global K* community of practice
  - Impact of K* in general: is there a single framework out there that we can use to assess the impact of K* work across all sectors and geographies? If not, is there a set of common principles we can adhere to and then contextualise as necessary? If not either of those, then what?
  - Results of the K* Conference – outputs, outcomes and impact.
    - Outputs (tangible results) – Green paper/White paper, peer reviewed journal issue, online learning community, overarching website aggregating resources, tools, courses, links, etc.
    - Outcomes (less tangible results) - short term results (e.g., changes in learning, awareness and knowledge), medium term results (e.g., changes in behavior, relationships, linkages decision-making, practice or policy)
    - Impacts (long term results) – not anticipated to find direct cause-effect relation to such impacts as positive changes in environmental conditions, social conditions or economic conditions.

Sources:
University of Wisconsin evaluation logic model, http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html
Outcome Mapping Learning Community, www.outcomemapping.ca

- **K* Spectrum of terminology**
  - Research Communication, KM, KT, KA, KTE, KMb, KB,
  - Regardless of the term utilized the underlying mechanism (where research and other forms of knowing is the focus) is fundamentally the same.
  - Conversely, the use of the same term often disguises different objectives, different epistemological understandings
  - The term “Knowledge Management” - when used purely to describe the storage and retrieval of information - is different as its focus is information more generally than research knowledge (which is the focus of many of the other terms).
A section on history would be useful, making the point that we’ve ended up in roughly the same place but have different vantage points on K* because our histories/trajectories have been different.

- These might be derived from different ideas around what constitutes knowledge and how it is created, how knowledge is shared and acquired, how change happens (i.e. how does knowledge become action)

- Other terminologies to consider would be boundary work/boundary worker, boundary spanning work/boundary spanner, etc.

- This literature coming from science and technology studies is about similar things, and also several authors have already connected to it (e.g. Michaels, 2009 – see further below in Environmental Sustainability section.)

- See the following literature:


Previous research, mostly from few developed countries, has highlighted the importance of "boundary work" through which research communities organize their relations with new science, other sources of knowledge, and the worlds of action and policy-making. To address this gap, this paper reports a multicountry comparative analysis of natural resource management programs conducted under the auspices of the Consultative Group on International Agricultural Research. The research discovered six distinctive kinds of boundary work contributing to the successes of those programs—a greater variety than has been documented in previous studies. The authors argue that these different kinds of boundary work can be understood as a dual response to the different uses for which the results of specific research programs are intended, and the different sources of knowledge drawn on by those programs. The paper shows that these distinctive kinds of boundary work require distinctive strategies to organize them effectively. Especially important are arrangements regarding participation of stakeholders, accountability in governance, and the use of “boundary objects.”


This paper argues that inter-organizational frameworks of intervention dominate the resolution of complex societal problems facing the UK and many other countries. This leads to proliferation of strategic alliances, joint working arrangements, networks, partnerships and many other forms of collaboration across sectoral and organizational boundaries across the public policy landscape. However, the discourse is positioned at an institutional and organizational level, and comparatively little attention is accorded to the pivotal role of individual actors in the management of inter-organizational relationships. This paper attempts to redress this balance by focusing on the skills, competencies and behaviors of boundary spanners.


This paper attempts to define some of the key K* terminologies, such as knowledge, knowledge transfer, knowledge dissemination, knowledge utilization, knowledge translation and knowledge management.

CHSRF (2003). Theory and practice of knowledge brokering in Canada’s Health System. Ottawa, Ontario, Canadian Health Services Research Foundation (CHSRF). The paper states that knowledge brokering is about bringing people together, to help them build relationships, uncover needs, and share ideas and evidence that will let them do their jobs better. It is the
human force that makes knowledge transfer (the movement of knowledge from one place or group of people to another) more effective. Knowledge brokering occurs even without individuals dedicated solely to brokering, so it’s important to focus on the activities and processes, not the individuals. Much of the brokering going on now is an unrecognized, largely unplanned activity; if we are to highlight and evaluate its role in knowledge transfer, there needs to be a concerted effort to recognize and formalize the work. To thrive, brokering needs a supportive organization — one where there is a collaborative environment, sufficient resources for the job, processes to identify and capture knowledge generated by both employees and outside parties, and a desire to build intellectual capital.

Lomas, J. (2007). "The in-between world of knowledge brokering." British Medical Journal 334(7585): 129. This paper states that the ultimate aim of people engaged in health research is to get the health service’s workforce, its employers, and its suppliers to have knowledge of facts (as represented by research results) and to use these facts in their practices, policies, and products. How well organised is research to achieve this aim? And how receptive and oriented are health services to this aim? The answers seem to be “not well organised” and “not very receptive.” The interpersonal connections needed to bridge this know-do gap are not yet in place. An emerging role therefore exists for knowledge brokers, supported by knowledge brokering resources and agencies, to fill the gap.

Meyer, M. (2010). "The Rise of the Knowledge Broker." Science Communication 32(1): 118–127. This paper discusses the invisibility and interstitiality of knowledge brokers, and argues that social scientists need to analyze more thoroughly their practices, the brokering devices they use, and the benefits and drawbacks of their double peripherality. The author also argues that knowledge brokers do not only move knowledge, but they also produce a new kind of knowledge: brokered knowledge. Bielak et al. (2008) and Lomas (2007) are cited in this paper.

This field note presents reflections from the perspective of a knowledge mobilization (KMb) practitioner after five years of developing and delivering KMb services in a university-based environment. This field note is a “how-to” based on experience in the field of KMb practice and places that experience in the context of academic literature. The article concludes that KMb is not a single event or process but a system, a suite of services working together to support the multidirectional connection of researchers with decision-makers. The six KMb services comprising the KMb system are informed by four broad KMb methods: producer push, user pull, knowledge exchange, and coproduction. Examples of each service are provided along with key observations that allow others interested in developing institutional KMb support services to implement these services in their own context. The field note concludes with clear recommendations for individuals and organizations interested in developing their own system of KMb services.

- **A look across Sectors**
  - Brief comparison of health, education, environment, agriculture
    - potential insights that can be generated through comparison of how knowledge brokering has evolved in different sectors (see Fisher reference below)
    - An idea for a way of looking at this could be comparison of ideas from different sectors about:
• What constitutes knowledge and how it is created
• Ideas about knowledge is shared and acquired
• How change happens (i.e. how does knowledge become action)
  o It is important to situate where fields are in relation to each other. Then, it makes
    sense to discuss the challenges of practice, policy (govt) and so on.
    ▪ to what extent do they share issues and problems, and what are the
      possibilities for experimenting. E.g., in agriculture it is easier to experiment
      with local knowledge than in medicine, given the ethical issues.
  o K* in Social Science vs Other Sciences. (Must be clear that we are talking about
    both natural and social science research to make the case for knowledge
    brokering.)

Source of extract: Fisher, K. (nd) Knowledge Brokering and Intermediary Concepts
3. WORLDVIEWS AND WHY THEY MATTER TO UNDERSTANDING KNOWLEDGE BROKERING
All the people drawn to this discussion shared a core assumption about the importance of sharing
knowledge for decision making and change. However the discussion revealed that there are quite different
understandings about knowledge (what it is, how it is shared or transferred) as well as different
understandings of policy, decision making and change processes (what actors are involved, where and
how those processes happen). This shapes perceptions of what the issues and needs are for knowledge
brokering and what kinds of action should be taken.
This was acknowledged by some contributors, particularly Nick Quist (05 Oct) and Laurens Klerkx (17
Oct), both of whom acknowledged how their location within the agriculture sector shapes their perspectives
on knowledge and brokering. Worldviews are shaped by many factors; one of which is domain or sector
from which the contributor was writing. At the risk of over-simplification this can be characterised as:
- In the agriculture sector the perceived failures of extension work has led to a recognition of the
  importance of local or indigenous knowledge and awareness of the broader context in which
  change happens, the emphasis is about change in practice not policy and draws on systems and
  innovations thinking
- The thinking on knowledge brokering in the health sector is strongly influenced by the Canadian
  experience where knowledge brokering takes place within a fairly ordered (albeit large and
  complicated) system with clearly defined stakeholders and understandings of knowledge.
  Knowledge brokers are part of the system and work inside it rather than around or alongside it.
- The challenges posed by climate change are widely recognised to be both “wicked” and multi-
  disciplinary, so initiatives in this area often focus on crossing disciplinary boundaries
  and encouraging stakeholders to value knowledge they may not otherwise consider (Michaels,
  2009), influential theoretical bases include complexity and epistemological thinking
- Those from disciplinary (rather than sectoral) research backgrounds (e.g. political science,
  economics) tend to focus on research based knowledge and generally see policy making as
  happening within governmental bodies, narratives often draw on research communication and or
  information science

While this may seem abstract and theoretical, it is important for both future debates within this [KB] forum
and to future action. Acknowledgment of the differences that emerge from different worldviews provides a
basis for new ideas and approaches, failure to acknowledge and explore differences runs the risk of
certain ideas dominating and being transplanted unquestioningly into contexts in which they are not
appropriate.
• **Target Audiences**
  - K* with Practitioners
  - K* with Government (policymakers)
  - K* with Civil Society/Communities/(Public?)
  - K* with private sector/Industry (consumers of research – both practitioner and policymakers)
  - K* with all these groups combined and among them, (given that multistakeholder approaches are now common.)

• **Different K* Strategies, Practices, Methods and Resources** [Needs further triage]
  - There are a number of frameworks that outline K* scope and functions, see for example Michaels, Klerxx, Cooper. The frameworks have considerable commonality but define the role differently. Such overarching frameworks may be useful to people planning K* work.
  - Linkage and exchange (events, networks (virtual and face-to-face), partnership
  - Translation
  - Transfer
  - Intermediaries and purveyors
  - Facilitation of Joint Learning
  - Products, media efforts (social media, tv, radio, etc.)
  - Workshops/Learning opportunities
  - Data/knowledge management
    - engagement/co-creation
    - integration/co-production
  - Co-creation of knowledge/co-production
    - a unique method that is based more on collaborative relationships that produce mutually useful knowledge not managing data and information
  - Intermediaries and purveyors
  - Tools/toolkits/networks fora – summary of the survey results

Extract from: Analysis of K* Conference participants K* Survey input (April 6th 2012). (See in conjunction with Appendix 1- Summary of Survey Results on Toolkits, Tool links and on-line Forums. April 5th 2012).

**Overview**

As evident in the responses received from the survey, the resources which are available on line for K* are extensive and to a certain extent overwhelming. The information provided was a mixture of links to general background references, specific learning modules, guides or templates and on line forums. As a first effort to bring order to this material and to help users identify the most relevant links for their sectors of interest, the results have been sorted under four categories: theory and practice of K*; health; environment and international development (Appendix 1). As the work progresses, additional sectors and subcategories may be added.
Prioritization was based on the degree of repeat referencing, the breadth of the topics covered as well as evidence of recent and ongoing activity. Many sites provide linkages to related reference material which will provide a new practitioner a wealth of background material and may be useful for the development of case studies. The most active sites are currently cross linked and have established both locations for resource sharing and support forums for ongoing dialogue between members (e.g., Communities of Practice (CoP’s). With the increased use of social networks (e.g., Facebook, Twitter), the summations of discussion threads and blogs provide new members access to past discussions and contribute to the maturation of this broad field.

Theory and Practice of K* (Background, Generic Tools and Evaluation)
Knowledge is composed of both explicit and tacit components, both of which need to be generally understood by all individuals engaged in ensuring its uptake. Included in this category are those links which provide general guidelines or specific templates which can be used to guide the selection of tools for individual projects. Some sites provide researchers assistance in the preparation of communication materials (plain language writing, 1:3:25 policy brief), others will assist in policy development, providing general guidance and templates to identify and appraise evidence (support-collaboration.org). Background on the evolution of the recommended good practices can be obtained through the references provided in the links and by following the online discussion forums. Canada, the European Union and the United Kingdom have on line portals to help establish general good practices, but also maintain sector specific sites.

In many regards a cultural change is in progress, where projects are initiated, monitored and reported through multi-disciplinary teams and collaborative processes facilitated by a project lead. The outcome mapping learning videos are an excellent resource. They provide step by step guidance for the development of strategies for evaluation which consider the needs and expectations of both the knowledge producer and end user starting at the initiation phase of new projects. This represents a behavioural change which may require the development and routine use of novel performance indicators to compare strategies for K* and will ultimately lead to improved outcomes. The evaluation of the success of K* activities is currently under discussion internationally.

Health Sector
The rapid transfer of new health research evidence to both the policy maker and the health practitioner is an urgent need. The National Collaborating Centre for Methods and Tools conducts a comprehensive analysis of each submitted tool. They also undertake education and outreach activities across Canada to promote their use. The Ontario CoP contains representatives from Policy, Academic Research and Health Practitioners and provides a forum for discussing good practices and resolving issues related to K*. Other groups focus on specific topics (e.g., Child Mental Health (Ontario), Workplace Safety (Ontario) and Families (UK). Guidance and practical templates for the formulation of Policy Briefs and evaluation of health outcomes is provided through research undertaken at McGill University. Linkages are provided to extensive references which may be useful resources for developing illustrative case studies and also provide discussion points for dialogue using social media.

Environment (Water and Climate)
Many of the web sites in this sector have been established by Government departments or agencies and have imbedded in them specific references to tools and guidelines. These assist in the dissemination of expected K* activities surrounding supported projects. Not always easy to navigate, nor current, they remain an excellent resource for the development of case studies. They often identify current and past projects within the country and establishing linkages to various experts which will aid knowledge brokers in linking researchers to each other and the relevant end users.
International Development (Including Agriculture)

International development links were very diverse with tools ranging from those related to small urban development projects to country wide economic development initiatives. Two major forums with good technical support provide summaries of interactive Facebook or twitter dialogue and provide an entry into the large amount of literature and K* efforts increasingly linked to these projects. Both regional and country specific links were provided. In some cases these provide lists of projects, in others links to networks set up to support projects.

Since most of the fora indicated in the survey were online platforms with links to various K* tools, there is ambiguity about what entails fora and toolkit.

Need clear linkages of this section with the section on Knowledge Systems/Communities. Some references identified below.

- **Sectors:**
  - agriculture, education, health, social services, international development, environment, sustainability

**Agriculture** – moving to different directions, such as participatory technology development, community based participatory research, farmer’s field school, extension advisory services, and lately knowledge/innovation broker.


This classical paper presents various ways to bring knowledge from research into farmers’ practice. The paper concludes that mass media is most effective for awareness creation while personal contact is effective for technology adoption.


Classical paper which argues for shifting from a linear research and technology push perspective towards an interactive systems perspective.


This paper argues that extension activities are being pulled in many directions, and are being called on to respond more effectively to the needs of farmers to produce and to forge links with markets. In the USA, for example, State Cooperative Extension Services have a variety of purposes in urban areas and operate in cooperation with other government agencies. Thus extension services, while concentrating on production agriculture, especially via privatized and private extension-type service companies, are simultaneously broadening out to include new purposes and a new clientele. While extension’s role is straightforward in contract farming and other commercial ventures, such is not necessarily the case with public sector extension. Its structure, organization and operating system may differ from country to country, even from region to region. Nonetheless, whether in the private or public sector, a major concern for
extension is to provide appropriate concepts, instruments and tools so that new knowledge is applied and used. A key objective in reforming extension, as argued in this paper, is to make it a better instrument, or engine, for the promotion of innovation, the dissemination of knowledge and the facilitation of development.


This paper identifies positive deviants, who deviate from the mainstream for a good cause, as effective boundary workers in smallholder agriculture in low-income countries. This strategy of knowledge brokering works best in protected spaces where positive deviancy is encouraged.


Taking the case of Dutch agriculture as an example, this paper examines the emergence and role of innovation brokers in stimulating agricultural innovation system interaction and innovation capacity building, and reflects upon their potential role in developing and emerging countries’ agriculture and how their emergence and functioning can be fostered. It concludes that innovation brokerage is likely to be relevant in developing countries, that public or donor investment may be needed to overcome inherent tensions regarding the legitimacy and funding of such players in the innovation system and that stimulating the emergence of innovation brokers requires a policy that supports institutional learning and experimentation to ensure that the brokers become locally embedded.


This paper presents findings of an exploratory case study that looked at 22 organizations identified as fulfilling an intermediary role in the Kenyan agricultural sector. The results show that these organizations fulfill functions of fostering integration and interactions among the diverse actors engaged in innovation networks and working on technological, organizational and institutional innovation. Further, the study has identified various organizational arrangements of innovation intermediaries, with some organizations fulfilling a specialized innovation role and other intermediaries taking on brokering as a side activity, while subsequently contributing to the innovation process. On the basis of these findings, we identify a typology of four innovation intermediation arrangements including technology broker, systemic broker, enterprise development support, and input access support. The results indicate that innovation brokering is a pervasive task in supporting innovation and will require policy support to embed it in innovation support arrangement, but without prescribing a one-size-fits-all approach.


This paper systematically rethinks the role of communication in innovation processes, starting from largely separate theoretical developments in communication science and innovation studies. Literature review
forms the basis of the arguments presented. The paper concludes that innovation is a collective process that involves the contextual re-ordering of relations in multiple social networks. Such re-ordering cannot be usefully understood in terms of ‘diffusing’ ready-made innovations. Hence, we need to think about communication as playing a role in innovation development and ‘design’. In such development processes, everyday communicative exchanges and self-organisation among societal agents are likely to be of critical significance in connection with the re-ordering of social relationships. In this light, the role of communication professionals and deliberate communication is often overstated or misinterpreted. Instead of striving for predefined change, communication professionals should facilitate that ‘the potential for change’ in complex dynamical settings increases. This includes efforts to enhance the survival chances of existing initiatives for change, by facilitating that they become more effectively adapted and/or linked to their dynamic selection environment than competing initiatives. This implies that communication professionals must play broader intermediary roles than before. A systematic rethinking of the role of communication in innovation processes in view of recent developments in communication sciences, innovation studies and complex systems thinking is largely absent. This paper fills a void.

**Education** – uses terms knowledge mobilization and research brokering.


This paper presents a research-extension linkage model for agricultural higher education institutions in developing countries. Agricultural higher education institutions in developing countries need to re-evaluate their institutional objectives to develop specific programs with regards to research and extension.


This article examines efforts in education to address the research–practice gap through an emerging field we term knowledge mobilization (KM). We explore some of the controversy surrounding the use of ‘evidence’, outline national and international KM initiatives and consider some of the issues and challenges that arise from the increased interest in evidence and research use in education. We also assess the current state and desirable future directions of efforts to strengthen the role of research and evidence in education.


This article describes an emerging model of boundary spanning leadership in homeless education. Drawing from the pilot program that is being implemented in conjunction with the Homeless Children’s Education Fund in Pittsburgh, the article identifies areas of promise and potential limits to university faculty involvement with schools, shelters, and other community institutions as they engage pressing issues related to the schooling of students who are homeless.


By virtue of being one of the comprehensive reviews of knowledge brokering in education, this article offers an understanding of boundaries as dialogical phenomena. The review of the literature reveals four potential learning mechanisms that can take place at boundaries: identification, coordination, reflection, and transformation. These mechanisms show various ways in which sociocultural differences and resulting discontinuities in action and interaction can come to function as resources for development of intersecting identities and practices.
Health – moving to evidence-based medicine, knowledge translation and exchange and participatory technology assessment. Intermediaries/purveyors

Kothari, A., N. Hovanec, et al. (2011). "Lessons from the business sector for successful knowledge management in health care: A systematic review." BMC Health Services Research 11: 173. This paper revealed that the concept of knowledge management has been prevalent in the business sector for decades, but only recently it has received attention by the health care sector, in part due to the ever growing amount of information that health care practitioners must handle. It has become essential to develop a way to manage the information coming in to and going out of a health care organization. The paper reports that key knowledge management strategies include such things as training sessions, communication technologies, process mapping and communities of practice. Common facilitators and barriers to implementing these strategies are discussed in the business literature, but rigorous studies about the effectiveness of such initiatives are lacking. The health care sector is at a pinnacle place, with incredible opportunities to design, implement (and evaluate) knowledge management systems. The paper concludes that while more research needs to be done on how best to do this in healthcare, the lessons learned from the business sector can provide a foundation on which to build.

Kothari, A., L. MacLean, et al. (2011). "Indicators at the interface: managing policymaker-researcher collaboration." Knowledge Management Research and Practice 9: 203-214. This paper makes a case that the knowledge transfer literature encourages partnerships between researchers and policymakers for the purposes of policy-relevant knowledge creation. Consequently, research findings are more likely to be used by policymakers during policy development. This paper presents a set of practice-based indicators that can be used to manage the collaborative knowledge creation process or assess the performance of a partnership between researchers and policymakers.

Kothari, A., D. Rudman, et al. (2012). "The use of tacit and explicit knowledge in public health: a qualitative study." Implementation Science 7(20). This research revealed different ways in which tacit knowledge was used to plan the public health program or initiative, including discovering the opportunity, bringing a team together, and working out program details (such as partnering, funding). The findings of this study demonstrate that tacit knowledge is drawn upon, and embedded within, various stages of the process of program planning in public health. The results will be useful in guiding the development of future knowledge translation strategies for public health organizations and decision makers.

Urquhart, R., G. A. Porter, et al. (2011). "Reflections on Knowledge Brokering Within a Multidisciplinary Research Team." Journal of Continuing Education in the Health Professions 31(4): 283-290. This research brings a case study of a multidisciplinary research team in Nova Scotia, Canada, in a creation of dedicated KB position with the goal of improving access to quality colorectal cancer care. The purpose of this paper is to provide an in-progress perspective on KB within this large research team. A KB position ("knowledge broker") was created to perform two primary tasks: (1) facilitate ongoing communication among team members; and (2) develop and maintain collaborations between researchers and decision makers to establish partnerships for the transfer and use of research findings.

Using bibliometric analysis, this paper provides an overview of the intellectual structure and how the field of knowledge utilization in the health sector changed over six decades. The field does not become large enough to represent with a co-citation map until the mid-1960s. Our findings demonstrate vigorous growth from the mid-1960s through 2004, as well as the emergence of specialized domains reflecting distinct collectives of intellectual activity and thought. Until the mid-1980s, the major domains were focused on innovation diffusion, technology transfer, and knowledge utilization. Beginning slowly in the mid-1980s and then growing rapidly, a fourth scientific domain, evidence-based medicine, emerged. The field is dominated in all decades by one individual, Everett Rogers, and by one paradigm, innovation diffusion.

This study focuses on the citizen fora on controversial medical technology with a case study of xenotransplantation and describes a method of participatory technology assessment and deliberative democracy. This also applies to communication of controversial technology in other sectors as well.

**International development** – very much in the same direction as agriculture and agricultural extension. Proliferation of communities of practice is evident in international development. Conversely, the growing focus on global public goods (climate change adaptation/mitigation, protection from infectious diseases, fighting state fragility and associated phenomena …) in international development might run counter to the “proliferation of communities of practice” mentioned under this heading. We may be dealing with centrifugal and centripetal trends at the same time.

This paper identifies ontological and epistemological divides in international development practice and explores various ways to bridge these divides through development of learning networks, such as epistemic communities, communities of interest, communities of practice and learning alliances.

This paper examines the concept of 'communities of practice' for promoting joint learning and knowledge production for international development. How and why communities of practice may or may not lead to socially inclusive and innovative outcomes in the context of international development needs further exploration. The paper reflects on the conceptualization of communities of practice in the light of previous research into learning in state-private sector-civil society and North-South partnerships. It argues that the concept of communities of practice can be useful heuristically to understand joint learning and knowledge production if accompanied by other conceptual insights, for example, from critical participation and experiential or action learning. It also suggests that conceptualizing communities of practice as action learning spaces captures the often complex social relations and dynamics of learning and knowledge production for development.

This paper examines the new opportunities and the apparent challenges to conventional "technology triangle" interpretations of research-extension-farmer linkages which entail a functionalist approach to...
knowledge production, exchange and application. In contrast, a web-like set of social interactions among multiple stakeholders offers a learning-based approach to knowledge management for development. This paper investigates the role of broadcast radio in linking farmers, research institutions and extension agencies in Africa, and questions why the two 'stations' of research and radio rarely, if ever, interact. In other words, agriculture is not the priority of the mainstream popular media, including broadcast radio. Modern information and communication technologies can make this interaction more technically feasible but the lack of teamwork among scientists and journalists reinforces policy and organizational constraints that operate against research/radio linkages.

Environment/sustainability – is heading towards K*/knowledge brokering.

Bielak, A. T., A. Campbell, et al. (2008). From science communication to knowledge brokering: the shift from 'science push' to 'policy pull'. Communicating Science in Social Contexts: New models, new practices. Dordrecht, Springer: 201-226. Using case studies from Canada, UK and Australia this paper distinguishes context-specific science and technology communication, such as dedicated knowledge brokering, from conventional communication in large organizations. This emphasizes the need for investment in specialized approaches, mechanisms and skill sets for knowledge transfer at the interface of science and policy, particularly in the field of environmental sustainability.

Michaels, S. (2009). "Matching knowledge brokering strategies to environmental policy problems and settings." Environmental Science and Policy 12: 994-1011. This paper examines how six different knowledge brokering strategies; informing, consulting, matchmaking, engaging, collaborating and building capacity might be employed in responding to different types of environmental policy problems or policy settings identified in decision aiding frameworks. Bielak et al. (2008) is cited in this paper.

- **Knowledge Systems/Communities**
  - Discuss the fact that, for any particular topical area, the community of knowledge generators and (potential) users frequently spans multiple sectors (i.e. practitioners, government, civil society and business), and so effective or 'holistic' K* in these contexts also involves building integrative systems/communities that span sectors and engage multiple K* strategies.
  - Also emphasize that some the most effective large scale K* processes integrate **co-production** of knowledge into these communities — in other words, building/integrating these systems/communities early in the knowledge generation (research) process such that the knowledge users are able to inject their understanding and needs early into the research design. This also implies seeing K* as a negotiation process in which many bodies of knowledge interact.
  - Discuss the position of knowledge systems within broader innovation systems, in which much work is done beyond optimizing research impact (through collaboration/participation, early involvement of users, appropriate knowledge brokering/research communication/boundary work mechanisms) towards a set of communication activities aimed at fostering institutional change at many levels to change contexts. This is both part of innovation itself (beyond adopting technology
or a certain practice, evidence based knowledge) but also creates a more enabling environment for research to have real and sustainable impact. **Learning Networks/Communities of Practice** – these are being proliferated with the ease of ICTs.

This paper argues that control over knowledge and information is an important dimension of power and that the diffusion of new ideas and information can lead to new pattern of behaviors and prove to be an important determinant of international policy coordination.

This article makes a case that not so long ago, companies were reinvented by teams, and similar breakthrough can happen through communities of practice. In other words, communities of practice may reinvent them yet again - if managers learn to cultivate these fertile organizational forms without destroying them.

- The papers by Johnson (2007) and Pant (2009) are relevant here as well to inform appropriate multi-stakeholder platform to give continuity to events, such as K* Conference.

- **Geographical**
  - Question is whether we assemble information here or throughout. Or wherever people want to add specific and pertinent examples. what would this section cover that isn't already brought out in the others?

- **Academic Research on K***
  - Compendium here (or throughout as currently), links

- **Issues**
  - Monitoring and Evaluation/ Metrics
  - HR issues/classification
  - training/capacity building
    - based on research findings about best practices for K*
  - communications/staying in touch
  - Building a K* supportive culture
  - Facilitators (intermediaries, embedded at organizational level, dedicated resources to do the work)
  - Distinction between those intermediaries that translate and process knowledge (working on ‘content’, and those that merely enable access and facilitate (real brokers, working on process and facilitating the ‘knowledge transaction’). Pros and cons of combining/separating the roles.
- Barriers (time, resources, lack of dedicated roles, lack of understanding of how best to approach this work, lack of empirical data on relative impact of various strategies)
- Where should K* practitioners be embedded. Is there evidence that one location (e.g. a policy shop vs at a research lab) works better than another - issues of legitimacy, neutrality vs. normative orientation, economic interest in knowledge exchanged/sold or no economic interest.
- the limitations of K* (e.g. use and misuse of information to support pre-determined positions/propaganda, untested survey techniques and manipulation of outcomes)
- Summary of the obstacles from Survey

Extract from: Analysis of K* Conference participants K* Survey input (April 6th, 2012). (See in conjunction with Appendix 2 - Summary of Obstacles for K* (April 5th 2012).

Overview

The survey revealed that obstacles are diverse and range from structural and individual to organisational and at the system/network level. Although there are overlaps between these levels, and the obstacles are interrelated, for the purpose of analysis they are classified as
1. Structural (e.g., infrastructure, funding, time, etc.),
2. Individual (perceptions, knowledge, skills, attitude, etc.),
3. Organisational (e.g., organisational/institutional culture, incentive structure, resource commitment, etc.), and
4. Network/system level obstacles (e.g., linear thinking on knowledge as resources that are produced by scientific establishments and transferred to policy makers and practitioners, less recognition of coproduction of knowledge, particularly in partnership with less fortunate and vulnerable actors, etc.).

See Appendix 2 for a full listing.

Structural

While there is information overload in some places, respondents from low-income countries expressed lack of information on K* resources as one of the structural problems. Lack of dedicated resources (time, personal, funding, etc.) for K* work is frequently mentioned in the survey. ICT infrastructure is among other structural obstacles.

Individual

The individual level obstacles are related to knowledge, skills and attitudes of researchers, policy makers, practitioners and local/indigenous communities. There is lack of knowledge and skill of using K* resources and more broadly misunderstanding of what the K* field entails. While policy makers and practitioners are less interested in long-term strategic natural science research and theory testing and theory building in social science research, researchers are less interested in putting research into practice. For example, scientists assume that their work is done when they publish/patent their research expecting that end users will use the knowledge while policy makers and end users often find scientific research less relevant for solving emerging problems, and informing local and indigenous practices. The survey revealed that this can lead to constant tensions between knowledge producers and users to the point that some researchers see K* as a wasteful diversion of research funds and other resources from normal scientific research. These individual level obstacles lead to problems at the organisational and system/network level.
Organisational
Organisational obstacles are often rooted in the culture and sub-cultures prevalent within an organisation. Some of the examples are lack of leadership and organisational commitments to allocate funding, personnel and other resources necessary to initiate and continue K* activities. For example, K* workers are being asked to be everywhere and do everything, mostly when there is a problem. One of the respondents refers to this phenomenon as a ‘crisis mentality’. Moreover, the distinction between communications/PR vs. K* activities (i.e. Big-C corporate communication and little-c K* activities) is not clear.

Incentive structures to engage researchers, practitioners and policy makers in K* activities are poorly developed. Particularly in academe, researchers are not rewarded for their engagement in K* activities or K* is not even considered as a legitimate field of academic inquiry. K* scholars are often stereotyped as practitioners.

Linear thinking on K* activities is very much evident in government institutions. For example, federal government’s restriction and control/release of information and communication, and widespread discomfort with social networking tools are a few examples. As well, donor agencies struggle to secure funding for innovative KT grant programs in the current financial climate.

Network/System
Respondents expressed that persistence of linear thinking and seeing science as the only valid source of K* is one of the system level challenges, which are most apparent in the health sector. Moreover, linear thinking also entails seeing K* in itself as sufficient for innovation, not considering other factors (e.g., business support services) and enabling environment. Still other reductionist thinking is to talk mainly about K* to policy as there may be more than policy, and, in general, K is not transferred but created in interaction with end user needs, which is often referred to as coproduction of knowledge. One respondent makes a specific case of a lack of consciousness of looking at knowledge in a holistic manner with overemphasis on transmission and diffusion.

Sustaining networks/CoPs is another challenge at the system level, particularly arising from a lack of dedicated personnel to keep with efforts going. Institutionalisation/mainstreaming of K* work is also equally challenging when there is a lack of organisational commitment.

Another very frequently expressed obstacle is the challenge of measuring success/impact of K* activities and use of matrices/strategies. It was also mentioned that some of the available tools are either ineffective or less relevant to a particular sector. Adaptation of tools from one sector to another is one area that could benefit K* work. This leads to the ongoing challenge of integrating K* activities across various sectors – health, education, agriculture, environment and international development.

Research impact
Meagher, L., C. Lyall, et al. (2008). “Flows of knowledge, expertise and influence: a method for assessing policy and practice impacts from social science research” Research Evaluation 17(3): 163-173. This paper argues that social science research undoubtedly does impact on public policy and practice but such non-academic impacts are rarely amenable to precise, quantitative metrics. In the interests of accountability, it is however possible to find proxy indicators of connectivity with research users and these may form steps toward impacts. Understanding these connections can lead to a deeper appreciation of the factors that shape the processes leading to research uptake.


This paper adopts a broad understanding of public policy which includes both discrete policy decisions and the ways in which policy is developed. Part 1 explores expectations about the influence of research on policy. Why research findings are not more often used by policy-makers, and when and how they are used,
have both become fashionable subjects of investigation in Canada and elsewhere. Most investigators agree that it is impossible to demonstrate a causal link between the presentation of research results and a policy decision. Yet most also agree that research can play a very important role in changing the way policy issues are understood and addressed.

Part 2 asks how to evaluate a policy network’s contribution to policy development in the context of the findings of Part 1. How does such a network add value? Comparing its inputs of time and money with its outputs of publications, speeches and meetings will not answer the question. In the context of the demand for government accountability, the Treasury Board Secretariat’s Results-based Management and Accountability Framework attempts to link inputs with outcomes as well as with outputs. This approach is an improvement over conventional compliance evaluation in assessing the effectiveness of programs, but it does not provide a satisfactory methodology for identifying and observing outcomes in policy development.


The paper argues that measuring the decision-making impact of applied health research should constitute a core function for many research funders and research organizations. Different target audiences warrant different measures of impact. The target audiences for applied health research include the general public, patients (and their families), clinicians, managers (in hospitals, regional health authorities and health plans), research and development officers (in biotechnology firms) and public policy-makers (i.e. elected officials, political staff and civil servants). Findings revealed that user-pull and interactive measures of impact (i.e. measures of cultural shifts that would facilitate the on-going use of research knowledge to inform decision-making) can supplement more traditional producer-push measures that assess researchers’ active efforts to inform decision-making and the outcome of these efforts.


This paper outlines a view of the nature of “impact” and point to instances where research has had a positive impact in education, but always within a larger social and political framework. A three element “model” of research impact (context of research, context of putting research into use, and the interaction between these within the context of broader social context) is developed and used as the basis to assess current situations and to suggest steps that could be taken to support a fuller contribution to education and learning from research.

Guide to extension evaluation:

- What’s next?
  - Peer reviewed call to action stemming from K* conference
  - White paper
    - Distribution to targetted audiences
  - A global learning network
  - Links back to participating organizations and ongoing initiatives
  - Funding for the K* Initiative
  - Meta site for resources
  - Professionalization of the field
- K* Professional Organization
  - A K* Institute

- Additional comments
  - Include different disciplinary angles that are relevant to this area e.g. Info science, computer science/ICT, media and communications, psychology etc. (The exception is education which is mentioned as a sector but perhaps not as a discipline from which KB stuff emerges). People working in knowledge brokering come from a wide range of disciplinary backgrounds which sometimes unwittingly shapes how they understand and practice the role.

- Appendices and Associated Documents
  - Analysis of K* Conference participants K* Survey input (April 6th 2012)
  - Appendix 1 - Summary of Survey Results on Toolkits, Tool links and on-line Forums
  - Appendix 2 - Summary of Obstacles for K*
  - Misc. Case studies (may also well be case studies in many/all of the previous bullets)
1. **K* Activities of Survey Respondents at a Glance**
   a. Survey Questions
   b. Graphs

2. **Toolkits**
   a. Overview
   b. Theory and Practice of K* (Background, Generic Tools and Evaluation)
   c. Health Sector
   d. Environment (Water and Climate)
   e. International Development (Including Agriculture)

3. **Obstacles to K***
   a. Overview
   b. Structural
   c. Individual
   d. Organisational
   e. Network/System

4. **Survey Questions**
5. **Graphs**

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1 Please direct correspondence to Dr. Alex Bielak, Senior Fellow and Knowledge Broker, UNU-INWEH alex.bielak@unu.edu
2 This Analysis and Commentary, together with two appendices, is part of the input to the K* Green Paper. It is based on inputs to survey by K* conference participants (received by March 19, 2012) undertaken by: Anne Middleton (tools etc.) and Laxmi Pant (activities, gaps), with Furqan Asif, Alex Bielak and Laurent Gemar. Note: An additional analysis of the link types will be included in a subsequent version of the paper. We expect vigorous debate on some points in the current analysis, and many additions!
K* Activities of Survey Respondents at a Glance
(See also the survey questions and graphs at the end of this report)

Top five sectors

1. Environment and natural resources
2. Health
3. Policy
4. International development
5. Agriculture
Ps: We did try to get someone from Defence!

Top five K* ‘professions”

1. K* practitioners
2. Intermediary
3. Knowledge producer
4. Knowledge user
5. Academic working on K*
Ps: We have representatives across the board…

Top five terms to describe K* work

1. KT/exchange
2. Knowledge brokerage
3. Knowledge mobilisation
4. Knowledge translation
5. Knowledge management
Ps: No one term rules!

Top five K* linkages

1. K* to government
2. K* to practitioners
3. K* to civil society
4. K* to industry
5. K* others (e.g., K* to innovators)
Ps: We only asked for 4! And we are spread across them ~evenly with a couple of “others”

Top five K* aspects

1. Linkage and exchange
2. Brokering and transfer
3. Translation
4. Management
5. Research communication
Ps: A good spread again!
Toolkits

Overview
As evident in the responses received from the survey, based on the questions posed, the resources which are available online for K* are extensive and to a certain extent overwhelming. The information provided was a mixture of links to general background references, specific learning modules, guides or templates and online forums. As a first effort to bring order to this material and to help users identify the most relevant links for their sectors of interest, the results have been sorted under four categories: theory and practice of K*; health; environment and international development (Appendix 1). As the work progresses, additional sectors and subcategories may be added.

Prioritization was based on the degree of repeat referencing, the breadth of the topics covered as well as evidence of recent and ongoing activity. Many sites provide linkages to related reference material which will provide a new practitioner a wealth of background material and may be useful for the development of case studies. The most active sites are currently cross linked and have established both locations for resource sharing and support forums for ongoing dialogue between members (e.g., Communities of Practice (CoP’s)). With the increased use of social networks (e.g., Facebook, Twitter), the summations of discussion threads and blogs provide new members access to past discussions and contribute to the maturation of this broad field.

Theory and Practice of K* (Background, Generic Tools and Evaluation)
Knowledge is composed of both explicit and tacit components, both of which need to be generally understood by all individuals engaged in ensuring its uptake. Included in this category are those links which provide general guidelines or specific templates which can be used to guide the selection of tools for individual projects. Some sites provide researchers assistance in the preparation of communication materials (plain language writing, 1:3:25 policy brief), others will assist in policy development, providing general guidance and templates to identify and appraise evidence (support-collaboration.org). Background on the evolution of the recommended good practices can be obtained through the references provided in the links and by following the online discussion forums. Canada, the European Union and the United Kingdom have online portals to help establish general good practices, but also maintain sector specific sites.

In many regards a cultural change is in progress, where projects are initiated, monitored and reported through multi-disciplinary teams and collaborative processes facilitated by a project lead. The outcome mapping learning videos are an excellent resource. They provide step by step guidance for the development of strategies for evaluation which consider the needs and expectations of both the knowledge producer and end user starting at the initiation phase of new projects. This represents a behavioural change which may require the development and routine use of novel performance indicators to compare strategies for K* and will ultimately lead to improved outcomes. The evaluation of the success of K* activities is currently under discussion internationally.

tinyurl.com/KStarConference  K* Survey Analysis (05-04-12)  alex.bielak@unu.edu
Health Sector

The rapid transfer of new health research evidence to both the policy maker and the health practitioner is an urgent need. The National Collaborating Centre for Methods and Tools conducts a comprehensive analysis of each submitted tool. They also undertake education and outreach activities across Canada to promote their use. The Ontario CoP contains representatives from Policy, Academic Research and Health Practitioners and provides a forum for discussing good practices and resolving issues related to K*. Other groups focus on specific topics (e.g., Child Mental Health (Ontario), Workplace Safety (Ontario) and Families (UK). Guidance and practical templates for the formulation of Policy Briefs and evaluation of health outcomes is provided through research undertaken at McGill University. Linkages are provided to extensive references which may be useful resources for developing illustrative case studies and also provide discussion points for dialogue using social media.

Environment (Water and Climate)

Many of the web sites in this sector have been established by Government departments or agencies and have imbedded in them specific references to tools and guidelines. These assist in the dissemination of expected K* activities surrounding supported projects. Not always easy to navigate, nor current, they remain an excellent resource for the development of case studies. They often identify current and past projects within the country and establishing linkages to various experts which will aid knowledge brokers in linking researchers to each other and the relevant end users.

International Development (Including Agriculture)

International development links were very diverse with tools ranging from those related to small urban development projects to country wide economic development initiatives. Two major forums with good technical support provide summaries of interactive Facebook or twitter dialogue and provide an entry into the large amount of literature and K* efforts increasingly linked to these projects. Both regional and country specific links were provided. In some cases these provide lists of projects, in others links to networks set up to support projects.

Since most of the fora indicated in the survey were online platforms with links to various K* tools, there is ambiguity about what entails fora and toolkit.
Obstacles to K*

Overview

Via the questions posed, the survey revealed that obstacles are diverse and range from structural and individual to organisational and at the system/network level. Although there are overlaps between these levels, and the obstacles are interrelated, for the purpose of analysis they are classified as

1. Structural (e.g., infrastructure, funding, time, etc.),
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Network/System

Respondents expressed that persistence of linear thinking and seeing science as the only valid source of K* is one of the system level challenges, which are most apparent in the health sector. Moreover, linear thinking also entails seeing K* in itself as sufficient for innovation, not considering other factors (e.g., business support services) and enabling environment. Still other reductionist thinking is to talk mainly about K* to policy as there may be more than policy, and, in general, K is not transferred but created in interaction with end user needs, which is often referred to as coproduction of knowledge. One respondent makes a specific case of a lack of consciousness of looking at knowledge in a holistic manner with overemphasis on transmission and diffusion.

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Another very frequently expressed obstacle is the challenge of measuring success/impact of K* activities and use of matrices/strategies. It was also mentioned that some of the available tools are either ineffective or less relevant to a particular sector. Adaptation of tools from one sector to another is one area that could benefit K* work. This leads to the ongoing challenge of integrating K* activities across various sectors – health, education, agriculture, environment and international development.
Survey Questions

The survey of K* conference attendees comprised the following questions related to this paper:

“Top 5” section questions

1. Which sector do you work in? (Check all that apply)
2. Which of the following do you consider yourself? (check all that apply)
3. Which of the following K* terms would you use to best describe yourself or your work (select a maximum of two choices)?
4. Which of the following do you consider yourself working in, either as a knowledge generator, intermediary or knowledge user (check all that apply) (e.g. 'K* to civil society' etc)?
5. Which of the following aspects of K* do you consider yourself involved in (check all that apply) (e.g. 'Linkage and exchange (events, networks, partnerships)')?

Graph questions

1. Which sector do you work in?
2. Which of the following do you consider yourself?
3. Which of the following K* terms would you use to best describe yourself or your work?
4. Which of the following do you consider yourself working in, either as a knowledge generator, intermediary or knowledge user?
5. Which of the following aspects of K* do you consider yourself involved in?

Tools, links, etc

1. Please list or provide hyperlinks to other K* tool kits and resources that you are aware of:
2. What K*-related online fora or virtual networks do you participate in or know of and what is their purpose? (e.g. KB Forum, IKMediaries Network)
3. Please name and describe the purpose of the K*-related online fora or visual networks you are aware of/participate in. Please provide links where appropriate.

Obstacles

1. What are the top three obstacles to your work in K*?
Graphs (based on survey responses)

Q3. Which sector do you work in? (N = 59)
4. Which of the following do you consider yourself? (N = 59)

Knowledge Producer: 20
Knowledge User: 40
Knowledge Practitioner: 20
Intermediary: 40
Scientist: 10
Policy maker: 10
Decision maker: 10
Academic working on K*: 20
Funder: 10
Practitioner: 10

5. Which of the following K* terms would you use to best describe yourself or your work? (N = 59)

$K$ KM: 10
Knowledge Translation: 20
K*: 30
K*: KM: 20
K*: Adoption: 10
K*: Exchange: 30
Other: 10
8. Which of the following do you consider yourself working in, either as a knowledge generator, intermediary or knowledge user? (N = 59)

- K* to civil society
- K* to industry
- K* to practitioners
- K* to government
- Other*

* K* to innovation actors/other research; K* to academia; K* within government; the other way around government, DC, industry and practitioners to K*; all of the above; to try and find ways to help all these different groups share (as) K* to the science community and public

Which of the following aspects of K* do you consider yourself involved in (check all that apply)? (N = 59)

- Linkage and exchange
- Data and K* within
- Knowledge brokering/transfer
- Knowledge translation
- Research communication
- Other*

* Participatory norms in innovation systems; creating collaborations for K*, research on K*, translation between different forms of knowledge

tinyurl.com/KStarConference  K* Survey Analysis (05-04-12)  alex.bielak@unu.edu
### Appendix 1 - Summary of Survey Results on Toolkits, Tool links and on-line Forums. (Prioritized on Basis of Breadth of Topics Covered and Current Status) (Appendix to K* Annotated Outline Green Paper and Analysis of KStar Conference participants Survey input)

<table>
<thead>
<tr>
<th>Theory and Practice of K* (Generic Tools/Toolkits, Training, Evaluation)</th>
<th>Health Sector</th>
<th>Environment (Water and Climate)</th>
<th>International Development (including Agriculture)</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.support-collaboration.org/">http://www.support-collaboration.org/</a> A section provides Tools for Evidence-informed Policymaking (STP) with relevant articles and summaries on how research is identified, appraised and used appropriately to inform health policymaking. This is a general tool to support Policy Relevant Review and Trials in the Health Sector.</td>
<td><a href="http://ktclearinghouse.ca/ktcanada">http://ktclearinghouse.ca/ktcanada</a> Focusing on translating primary evidence to health practices for Canadians. It is an active site. Tools to assist in the evaluation of evidence and the development of guidelines for health practitioners. <a href="http://ktclearinghouse.ca/kttc/">http://ktclearinghouse.ca/kttc/</a> An offshoot of the main ktclearing house site, this is the kt training community (100 members) with a breakdown on research interests to assist in making connections around specific topics.</td>
<td><a href="http://austalianriverrestorationcentre.com.au/resources/brokering-and-managing-information-and-knowledge/">http://austalianriverrestorationcentre.com.au/resources/brokering-and-managing-information-and-knowledge/</a> Well maintained with sample success stories and guides to develop strategies which could be applied anywhere. Links to international u-tube videos on Knowledge and its dissemination. Not all links that were tried worked.</td>
<td><a href="http://www.km4dev.org/">http://www.km4dev.org/</a> (Knowledge Management for Development) International scope with focus on knowledge management around development projects. A community of practitioners who are interested in sharing issues and approaches. Country specific sub-group discussions supported by an active core group. Journals produced 3 times/year, apps for social media downloading available. Could be good source for activities using social media within these countries. Links with “Research to Action” guidelines and blogs. <a href="http://www.km4dev.org/group/km4devun">http://www.km4dev.org/group/km4devun</a> (Subgroup of KM4Dev for UN) 101 Members worldwide</td>
</tr>
<tr>
<td><a href="http://researchimpact.otiiree.ca/">http://researchimpact.otiiree.ca/</a> Although this site is not generally well kept and is difficult to navigate, it does lead to some very recent and active twittering around a Blog ‘Mobilize This!’ It is possible that members have moved to Twitter. Mostly Canadian content and focus on theory and practice of K*. <a href="http://www.researchimpact.ca/home/">http://www.researchimpact.ca/home/</a> Canada’s knowledge mobilization network designed to connect university research with research users across Canada. The site contains</td>
<td><a href="http://www.ahrq.gov/qual/advances/planningtool.htm#sec1">http://www.ahrq.gov/qual/advances/planningtool.htm#sec1</a> (US Agency for Health Care Research and Quality) Focuses on the Development of a Planning Tool to Guide Dissemination of Research Results. While this model was developed in the context of health case it is generic enough to be applicable to other fields of research.</td>
<td><a href="http://www.uoguelph.ca/research/omafra/partnership">http://www.uoguelph.ca/research/omafra/partnership</a> (Ontario Minister of Agriculture and Food and Rural Affairs - Research - UofGuelph KTT) Index of available information on line. <a href="http://www.omafra.gov.on.ca/english/research/ktt/learnmorekt/ktrresources.htm">http://www.omafra.gov.on.ca/english/research/ktt/learnmorekt/ktrresources.htm</a> Good site for any person receiving Ontario Agriculture grants. Links to other main KTT sites available. Agriculture sector-including food. Highly focused (low priority except for Ontario researchers).</td>
<td><a href="http://www.ikmediarynetwork.org/">http://www.ikmediarynetwork.org/</a> International Knowledge Intermediary Network) A project CoP sponsored by KM4D. For people who work to increase access to and use of research by stakeholders in international development contexts. Thiry countries and 35 organizations represented. Hold an annual workshop and produce a report of best practices, lessons learned etc for specific topics relevant to knowledge brokers. This core group maintains the broader KB Forum.</td>
</tr>
</tbody>
</table>

### Appendixes 1 & 2 Tools etc., and Obstacles (April 5th 2012)

alex.bielak@unu.edu
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<td><strong>Theory and Practice of Kᵀ (Generic ToolsToolkit, Training, Evaluation)</strong></td>
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</tr>
<tr>
<td><strong><a href="http://www.easac.eu/home/dialogue-project.html">http://www.easac.eu/home/dialogue-project.html</a></strong> European Academies Science Advisory Council with a vision of building science into EU policy. As part of their Science-Policy Dialogue project an excellent Good Practice Guide can be downloaded. EASAC Site itself is well maintained with three themes: Energy, Biosciences and Environment.</td>
<td><strong><a href="http://www.easac.eu/home/dialogue-project.html">http://www.easac.eu/home/dialogue-project.html</a></strong> European Academies Science Advisory Council with a vision of building science into EU policy. As part of their Science-Policy Dialogue project an excellent Good Practice Guide can be downloaded. EASAC Site itself is well maintained with three themes: Energy, Biosciences and Environment.</td>
<td><strong><a href="http://www.tern.org.au/The-Australian-Terrestrial-Ecosystem-Research-Network-Data-Discovery-Portal-pa17727.html">http://www.tern.org.au/The-Australian-Terrestrial-Ecosystem-Research-Network-Data-Discovery-Portal-pa17727.html</a></strong> Active and maintained. Environment Sector Information and knowledge resource step by step guide to develop strategy. TERN provides portals to national environmental datasets and services. <strong><a href="http://www.urbansustainabilityexchange.org.uk/IS">http://www.urbansustainabilityexchange.org.uk/IS</a> SUESGuidanceNotes.html</strong> Short comprehensive guide describing 7 stages of KT. Aimed at researchers, but useful to science policy analysts as well. Uses examples from selected case studies in a sustainable urban environment context.</td>
</tr>
</tbody>
</table>
### Theory and Practice of K* (Generic Tools/Toolkits, Training, Evaluation)

<table>
<thead>
<tr>
<th>Health Sector</th>
<th>Environment (Water and Climate)</th>
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<tr>
<td><a href="http://www.knowledgemobilization.net/">http://www.knowledgemobilization.net/</a> With many events in Ottawa and some planned for Toronto. The aim is to build a network of NGO Knowledge mobilization specialists and Knowledge brokers. Active communication between members.</td>
<td><a href="http://www.crrf.ac.uk/policy.html">http://www.crrf.ac.uk/policy.html</a> (Centre for Research on Families and Relationships) Facilitate networking in the area of families and relationships. Team dedicated to knowledge exchange that can provide advice and training.</td>
<td><a href="http://www.ktoolkit.org">http://www.ktoolkit.org</a> Toolkit developed by the Consultative Group on International Agricultural Research (CGIAR). Contains two generic &quot;libraries&quot; one for methods (processes used with groups and individuals) and one for tools (websites or software that can be used to support personal and group knowledge sharing).</td>
</tr>
<tr>
<td><a href="http://www.rcuk.ac.uk/cgi/kportal/Pages/home.aspx">http://www.rcuk.ac.uk/cgi/kportal/Pages/home.aspx</a> (The Research Council UK). Knowledge Transfer Portal offers a single point of access for those in, e.g., academia, business, public, private and/or third sectors, who want to find out about Research Council Knowledge Transfer schemes and activities, and how to get involved. Focus on UK, all sectors.</td>
<td><a href="http://www.omafra.gov.on.ca/english/research/ktt/learnmore/kttresources.html">http://www.omafra.gov.on.ca/english/research/ktt/learnmore/kttresources.html</a> (Ontario Minister of Agriculture and Rural Affairs) Excellent source for links to on line KT references and tools particularly guides for research scientists in the Health field. Some environmental links available. Cross cutting.</td>
<td><a href="http://www.creep.org/">http://www.creep.org/</a> (Evidence Based Policy in Development Network) English and Spanish options. International in scope the site contains a theme based searchable library of relevant articles focusing on international development. May not be actively maintained as last event posted was September 2010. The EBPDN is a worldwide CoP for think tanks, policy research institutes and similar organisations working in international development, to promote more evidence-based, pro-poor development policies.</td>
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Theory and Practice of K* (Generic Tools/Toolkits, Training, Evaluation)  

Health Sector

http://www.edinburghbeltane.net/  
Focus on Public Engagement in the research context with comprehensive information on tools and training in a social network (blog, wiki).  
CAURA (Canadian Association of University Research Administrators) Costs to be a member, have an annual 5 day conference, this years sessions on research impact.  
CALJ (Canadian Association of Learned Journals) Fee to join.

Environment (Water and Climate)

 Mostly environmental background information. No linkage to recent information.

International Development (including Agriculture)

http://www.g-fras.org/en/  
(Global Forum for Rural Advisory Services) Active site with recent updates and blogs posted. Members from Africa, Asia, Latin America and Europe. Advice on rural issues in the development context.

http://gkpfoundation.org/  
A multi-stakeholder network to promote access to and use of knowledge and information.

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Link to the multiple definitions which are included in K*.

http://www.write3.com/  
Citizen journalism website on a variety of topics, Human Rights, Climate Change, etc.

http://www.write3.com/  
Citizen journalism website on a variety of topics, Human Rights, Climate Change, etc.

http://reisp-spine.science.gc.ca/default.asp?lang=En&n=B921FDD8-1 (Science Policy Integration Nexus of Expertise (SPINE) Govt. of Canada (GoC) site maintained by Environment Canada. Last updated Sept 2010, the location of the most recent documents was not immediately obvious. GoC CCPEDIA (S&T Knowledge Translation and Brokering) offers information on best practices and a compendium of tools for Federal Public Servants.

http://www.ec.gc.ca/scitech  
Information on Environment Canada science and decision making. Includes a number of initiatives aimed at strengthening links between science knowledge and policy/decision making. Contains Environment Canada specific EC Science Alert tool for alerting decision makers to upcoming published scientific papers along with a directory of scientists and their expertise. Both these tools have been adopted broadly across the federal government.

http://www.ec.gc.ca/scitech/default.asp?lang=En&n=5B7438C1-1  
Information on Environment Canada science and decision making. Includes a number of initiatives aimed at strengthening links between science knowledge and policy/decision making. Contains Environment Canada specific EC Science Alert tool for alerting decision makers to upcoming published scientific papers along with a directory of scientists and their expertise. Both these tools have been adopted broadly across the federal government.

World Bank Data Visualisation Tools. List of tools to display development indicators (interactive maps, google, etc).

(Oversees Development Institute) RAPID materials Contains a section (RAPID) on tools on Evidence-Informed Policy making. Includes examples on Research-Policy linkages in the ID context. Specific section includes practical tools to improve skills and capacities.

http://www.c-iras.org/en/  
(Global Forum for Rural Advisory Services) Active site with recent updates and blogs posted. Members from Africa, Asia, Latin America and Europe. Advice on rural issues in the development context.

http://gkpfoundation.org/  
A multi-stakeholder network to promote access to and use of knowledge and information.

(Ontario Ministry of Agriculture, Food and Rural Affairs ) Knowledge Translation and Transfer Plan Templates and guidelines.

(Oversees Development Institute) RAPID materials Contains a section (RAPID) on tools on Evidence-Informed Policy making. Includes examples on Research-Policy linkages in the ID context. Specific section includes practical tools to improve skills and capacities.

World Bank Data Visualisation Tools. List of tools to display development indicators (interactive maps, google, etc).

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<tr>
<td>Through Environment Canada's Science Horizons Internship Program, CWN has developed an inventory of K* tools. Although not publically available, we are willing to share upon request.</td>
<td></td>
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<tr>
<td><a href="http://www.chsrft.ca/PublicationsAndResources/ResourcesForResearchers/KEYS.aspx">http://www.chsrft.ca/PublicationsAndResources/ResourcesForResearchers/KEYS.aspx</a> (Canadian Health Services Research Foundation) KEYS is a generic guide to implementing effective knowledge exchange, the production of research and its use. The site also includes a glossary of terms used by CHSRF.</td>
<td></td>
<td><a href="http://www.nasaconline.org">www.nasaconline.org</a> Network of African Science Academies (academies members, not individual scientists). Environmental Sector and focus on Africa. Although a couple of upcoming specific events were posted, there were only about 20 documents in the resource section. Limited usefulness.</td>
</tr>
<tr>
<td><a href="http://www.omafra.gov.on.ca/english/research/ktt/indexktt.html">http://www.omafra.gov.on.ca/english/research/ktt/indexktt.html</a> Comprehensive website with information for researchers in any field on a variety of subject related to KTT: definition of KTT, instructions on how to use KTT, build a KTT Plan, checklist, etc. The site also includes a ToolKit.</td>
<td></td>
<td><a href="https://one.unteamworks.org">https://one.unteamworks.org</a> Knowledge Management within the UN: UN Teamworks secure site - Includes UN KM focal points list</td>
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tinyurl.com/KStarConference  
Appendices 1 & 2 Tools etc., and Obstacles (April 5th 2012)  
alex.biela@unu.edu
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<td><a href="http://kmbeing.com/">http://kmbeing.com/</a> Blog on social media for Knowledge Mobilization (KMb). Has some good background information on the topic as well.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><a href="http://pi.library.yorku.ca/dspace/handle/10315/10236">http://pi.library.yorku.ca/dspace/handle/10315/10236</a> York University announcement of the formation of a KMb Unit.</td>
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</tbody>
</table>
### Appendix 2 – Summary of Obstacles for K* (Appendix to K* Annotated Outline Green Paper and Analysis of KStar Conference participants Survey input)

<table>
<thead>
<tr>
<th>Structural</th>
<th>Individual</th>
<th>Organizational</th>
<th>Network/Systems level</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Investment/funding</td>
<td>• Technical knowledge and skills – archiving, management and processing</td>
<td>• Organisational culture, institutional culture, intercultural perspective on K*</td>
<td>• Linking knowledge to people’s everyday life</td>
</tr>
<tr>
<td>• Time/resources – to set up knowledge sharing resources, keep up online presence, time to write what is done, train staff</td>
<td>• Knowledge to apply various K* tools</td>
<td>• Institutional recognition of K* (universities)</td>
<td>• Measuring success/impact K* activities– matrices/strategies, effectiveness/relevance of K* tools</td>
</tr>
<tr>
<td>• Infrastructure – poor communication infrastructure</td>
<td>• ‘Knowledge cultures, mindsets and attitudes of colleagues and partners.</td>
<td>• Leadership</td>
<td>• Relevance of existing K* tools to some areas of science.</td>
</tr>
<tr>
<td>• Loss of information</td>
<td>• Lack of interest in communicating knowledge outputs by researchers.</td>
<td>• Quick turnover of K* contacts/workers – no institutional memory</td>
<td>• Planning – understanding and use of appropriate tools</td>
</tr>
<tr>
<td>• Lack of information on knowledge resources</td>
<td>• Lack of good integrator/generalists who can implement science in the context of user need.</td>
<td>• Formal recognition of the important of (and thus resources for and position dedicated to) the importance of knowledge systems, including linkages</td>
<td>• Getting beyond ‘tools, technologies, views’</td>
</tr>
<tr>
<td>• Lack of data and information (low-income country)</td>
<td>• Poor reading culture</td>
<td>• Organisational commitment - being asked to be everywhere and do everything, do more with less, being asked to do when there is a problem/lack of strategic innovation – ‘crisis mentality’</td>
<td>• Weaving together the different knowledge, approaches and overall architecture</td>
</tr>
<tr>
<td>• Education</td>
<td>• Commitment of knowledge producers, practitioners and policy makers to participate in CoPs</td>
<td>• Appreciation of the value of K* activities – researchers, donors</td>
<td>• Collaborating across diverse organisations that have very different cultures</td>
</tr>
<tr>
<td>• Information overload</td>
<td>• Engage policy makers in the use of research evidence</td>
<td>• Reward systems, particularly in academia</td>
<td>• Sustaining activity in networks – a dedicated person to keep efforts going</td>
</tr>
<tr>
<td>• Connectivity/Internet access</td>
<td>• Awareness of the importance of M&amp;E of the use of evidence by decision makers.</td>
<td>• Incentives for researchers, practitioners and policy makers to participate</td>
<td>• Research uptake and policy outreach ; quality of southern research</td>
</tr>
<tr>
<td></td>
<td>• Policy makers’ disinterest in science</td>
<td>• Lack of funding sources</td>
<td>• Reinventing broken wheels</td>
</tr>
<tr>
<td></td>
<td>• Scientists’ disinterest in policy</td>
<td>• Lack of organisational culture to recognise that the most important value of the K* process is the time invested ‘up front’ before any research starts.</td>
<td>• Complexity of context under which K* workers work</td>
</tr>
<tr>
<td></td>
<td>• K* roles poorly understood, even those who play it</td>
<td>• Federal government’s restriction and control/release of information and communication – linear thinking</td>
<td>• Undervaluing K* within research processes</td>
</tr>
<tr>
<td></td>
<td>• Not clear what K* entails</td>
<td>• Packaging of information</td>
<td>• Persistence of linear thinking and seeing science as the only valid K* (strong in the health sector)</td>
</tr>
<tr>
<td></td>
<td>• Technophobia</td>
<td>• Value proposition of the private sector</td>
<td>• Seeing K* in itself as sufficient for innovation, not considering other factors and enabling environment</td>
</tr>
<tr>
<td></td>
<td>• Literacy of rural communities</td>
<td>• Communications vs. knowledge exchange – a hard distinction</td>
<td>• Talking mainly about K* to policy, there is more than policy, and in general K is not transferred but created in transaction/coproduction – end user needs, native language content</td>
</tr>
<tr>
<td></td>
<td>• Locating available expertise</td>
<td>• No comfortable with social networking tools – no Facebook, no Youtube professional work</td>
<td>• Institutionalisation of K* work/mainstreaming K*</td>
</tr>
<tr>
<td></td>
<td>• Convincing academic colleagues that K* is a field of academic inquiry/</td>
<td>• The demand side is a new area of work and few people understand how important it is to get into the deepest workings of government departments – apathy in the eyes of many donors</td>
<td>• Lack of consciousness of looking knowledge in a holistic manner – over emphasis on transmission and diffusion</td>
</tr>
<tr>
<td></td>
<td>Lack of knowledge mobilization scholarship to inform KMB practice</td>
<td>• Securing sustainable funding for innovative KT grant programs in the current financial climate.</td>
<td>• IP policy laws and regulations</td>
</tr>
<tr>
<td></td>
<td>• Some researchers see K* as a diversion of research funds from research</td>
<td>• Think tanks do not work cooperatively</td>
<td>• Disconnect between various sectors – health, education, agriculture/food, environment</td>
</tr>
<tr>
<td></td>
<td>• Tensions between knowledge producers and users</td>
<td>• Relevance of existing K* tools to some areas of science.</td>
<td>• Keep up with the mushrooming discussions around K*</td>
</tr>
<tr>
<td></td>
<td>• Interactions between K* workers</td>
<td>• Linking knowledge to people’s everyday life</td>
<td>• K* with the policy world often seems like working in parallel universes</td>
</tr>
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[alex.bielak@unu.edu](mailto:alex.bielak@unu.edu)