Knowledge Management & Transfer for the Electricity Industry in Canada

Investing Today for a Brighter Future

electricity SECTOR COUNCIL

Building bright futures

www.brightfutures.ca

Funded by the Goverment of Canada's Sector Council Program

Canada

This project was funded by the Government of Canada's Sector Council Program
The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

About the Electricity Sector Council

Approximately 100,000 Canadians are involved in the generation, transmission and distribution of one of our country's essential utilities: electricity. Their work powers homes and businesses across the country, fuelling everything from light bulbs, cell phones and refrigerators to water treatment plants and road vehicle assembly lines.

The Electricity Sector Council provides support to this dedicated workforce by collaborating with industry employers and other stakeholders to research and resolve human resource and workplace development issues.

This report is also available in French and can be obtained electronically at www.brightfutures.ca.

For more information, contact:

electricity SECTOR COUNCIL
Building bright futures

600 – 130 Slater Street
Ottawa, Ontario K1P 6E2
Tel: (613) 235-5540
Fax: (613) 235-6922
info@brightfutures.ca

www.brightfutures.ca

Acknowledgements

The development of the KM/KT Toolkit for the Canadian Electricity and Renewable Sector was made possible by the participation and support of the following.

The Knowledge Management and Transfer Steering Committee:

Bob Menard – Chair
Executive Managing Director
Power Workers' Union Training Inc.

Helen Platis – Vice Chair
Vice President – Operations Solutions
Elenchus

Rick Dalton
Business Manager/Financial Secretary
IBEW Local 2330

John Drish
Co-ordinator of Trades Integration – English Program Services
Nova Scotia Department of Education

Leslie Forge
Executive Vice President, Policy
The Society of Energy Professionals

Tom Goldie
Senior Vice President, Corporate Services
Hydro One

Lianne Lagassé
Manager, Employee Learning & Development
Manitoba Hydro

Roberta Reyns
Organization Development Consultant
Ontario Power Generation

Michelle Branigan
Executive Director
Electricity Sector Council

Kevin Joseph
Junior Project Manager
Electricity Sector Council

Nathalie Couture
Senior Analyst
Human Resources & Skills Development Canada

Wendy Farrington
Analyst
Human Resources & Skills Development Canada

Research Consultants

Jennifer Smith
Tarisha Goonasekara
Susanne Ellenbogen
Julia Aitken
Intergage Management Consulting

Table of Contents

Introduction

The Electricity Sector Council recognizes that the need for organizations within the Sector to more effectively harness and use its critical knowledge to improve operating efficiencies; identify future business opportunities and improve overall decision-making are vital to the future success of the sector. However, research conducted by the ESC indicates that almost one-third of organizations within the Sector have not introduced approaches to Knowledge Management (KM) and Knowledge Transfer (KT). It is clear that not all organizations within the Sector can afford to develop an integrated and systemic approach to knowledge management and transfer, nor do all organizations need to follow the same KM/KT approach. The approaches to KM/KT are as diverse as each organization that employs them, and the problems that they face.

The ESC, supported by a Sector-based Steering Committee, has developed this KM/KT Toolkit to provide support to organizations wishing to introduce and/or advance their approach to KM/KT. It is important that organization in the sector have access to tools and approaches and the experience of others that can be adapted to their unique organizational culture, workforce risks and business strategy.

The Toolkit is yours to use, adapt and update. The KM/KT Toolkit is a living document that will be supported and updated by the ESC but it will need to be user-driven. This means that to remain relevant, the ESC will rely on Sector users to provide feedback, updates and share new emerging practices and adaption of best practices to the Sector.

The Canadian electricity sector is diverse with different life cycles and approaches to harnessing and distributing electricity using a variety of technologies and systems - some legacy and others leading edge. The business drivers and needs of organizations within each sub-sector will vary and therefore so may the solutions to knowledge management and transfer issues. Organizations are encouraged to develop approaches that are tailored to their own business requirements and operating environment and include a mix of tactics to address KM/KT requirements. It is hoped that the ESC KM/KT Toolkit can help organizations in developing tailored solutions/approaches to their KM/KT risks and challenges.

Use of Content Disclaimer

The Electricity Sector Council (ESC) nor its contributors, employees and contractors shall be held liable for any improper or incorrect use of the information described and/or contained herein and assumes no responsibility for anyone's use of the information contained within the KM/KT Toolkit, KM/KT Supporting Theory, and KM/KT Final Report.

The Electricity Sector Council (ESC) has collected this information using content freely published on the world wide web, and has provided this data as advisory and indicative and specifically and exclusively for the purpose of education. All facts, figures, concepts and principals provided relate only to the Knowledge Management & Transfer for the Electricity Industry in Canada project which includes the KM/KT Toolkit, KM/KT Supporting Theory, and KM/KT Final Report. Facts, figures and data may be inaccurate, out of date and subject to revision without notice. Under no circumstances should the data provided (or any derivative thereof) be used in whole or in part for any project, except in a purely theoretical environment. Users should refer to the originating bodies or sourcing the documents for confirmation of the accuracy of the material. The Electricity Sector Council (ESC) provides hypertext links to a number of external sites, including but does not accept responsibility for material on these external sites.

Neither the Electricity Sector Council (ESC) nor its contributors, employees and contractors is responsible for the contents of any off-site pages that reference, or that are referenced by, the Electricity Sector Council (ESC) website. The user specifically acknowledges that neither the Electricity Sector Council (ESC) nor its contributors, employees and contractors is liable for any defamatory, offensive, misleading or illegal conduct of other users, links, or third parties and that the risk of injury from the foregoing rests entirely with the user.

Links from the Electricity Sector Council's website on the World Wide Web to other sites, or from other sites to the Electricity Sector Council (ESC) website, do not constitute an endorsement by the Electricity Sector Council (ESC). These links are for convenience only. It is the responsibility of the user to evaluate the content and usefulness of information obtained from other sites.

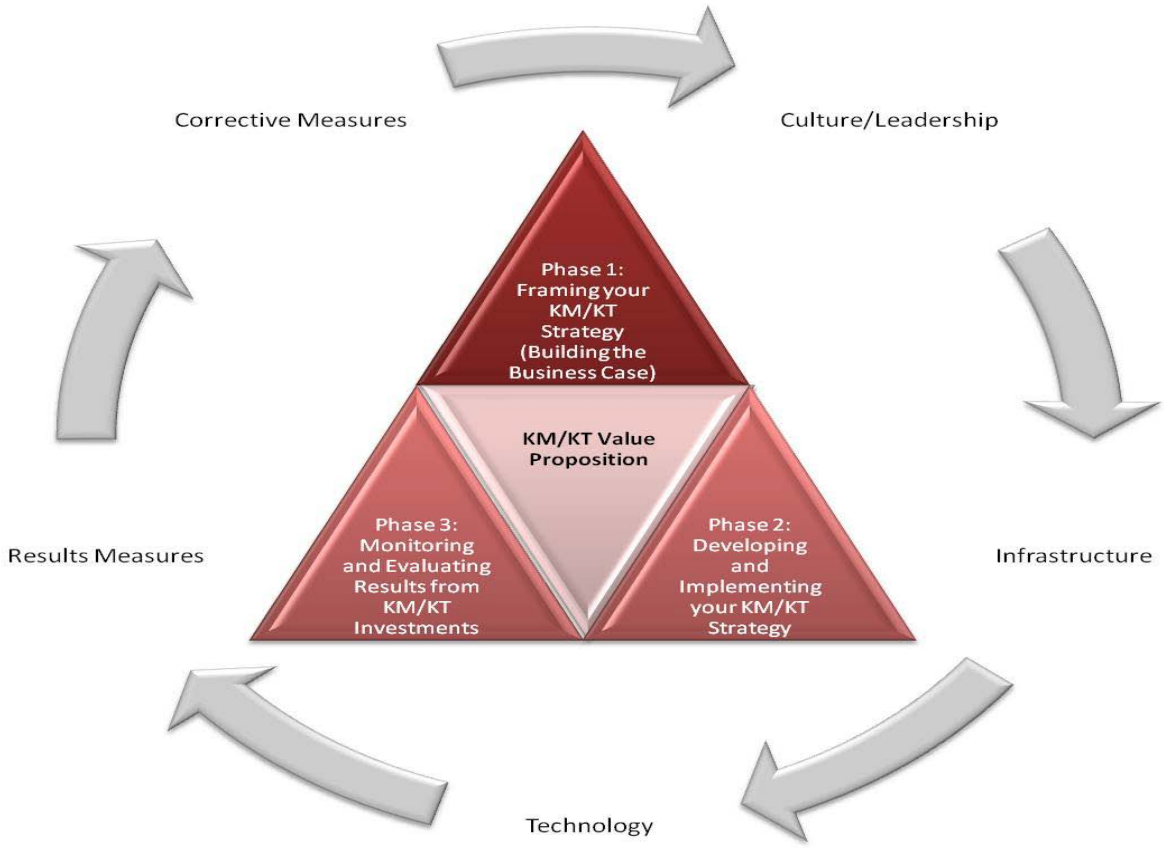
This disclaimer of liability applies to any damages or injury, whether based on alleged breach of contract, tortuous behaviour, negligence or any other cause of action, including but not limited to damages or injuries caused by any failure of performance, error, omission, interruption, deletion, defect, delay in operation or transmission, computer virus, communication line failure, and/or theft, destruction or unauthorized access to, alteration of, or use of any record.

Overview of ESC KM/KT Toolkit

The Toolkit is based on a three-phased approach. Within each phase a number of steps are identified and include suggestions, resources and tools. Other supporting tools, resources and best practices are also linked to each phase for those who are interested in reviewing more examples and ideas.

An overview of the Toolkit is provided below.

Figure 1:
Overview of the ESC Toolkit Three Phased Approach to KM/KT Implementation
(Surrounded by critical environmental supports)



Phase 1: Framing your KM Strategy and Building the Value Proposition

In developing an approach to KM/KT within your organization it is important to ensure you have the right foundations. Phase 1 provides you with a variety of tips and tools to help you identify the needs of your organization and tips for developing a value proposition/business case to ensure leadership support and buy-in. The following steps will help you develop the business case for introducing KM and KT within your organization:

1. Design KM/KT Business Case & Value Proposition
2. Identify KM/KT Needs and Vision
3. Examine Business Drivers & Characteristics
4. Identify current KM/KT Activities and Information
5. Identify current KM/KT Gaps and Weaknesses
6. Examine your Culture and Organizational Structure

7. Develop the Business Case & Value Proposition

Phase 2: Developing your KM/KT Strategy – Storing and Transferring Knowledge
In this phase it is important to understand where your organization is in relation to current KM/KT activities/approaches, where it needs to be to achieve its business objectives and to develop a KM/KT strategy (and/or action plan) to achieve this future vision. Key steps in this phase include:

- ⇒ Planning the Strategy
- ⇒ Defining your KM/KT Strategy
- ⇒ Developing your KM/KT Strategy
- ⇒ Knowledge Management (Storage)
- ⇒ Knowledge Transfer (Sharing)

Phase 3: Monitoring and Evaluation: Examining your Return on Investment from Implementing KM/KT
In Phase 3 it is important to review initial expectations and the desired outcome of your KM/KT efforts, to monitor and collect baseline data and to evaluate the success of your KM/KT activities/strategy. Key steps in this phase include:

- ⇒ Revisit Initial KM/KT Strategy Goals & Objectives
- ⇒ Select Information and Assess Success
- ⇒ Challenges to Effective Measurement

The ESC KM/KT Toolkit will explore the approaches to designing, developing, implementing and improving the KM/KT Strategy to ensure the goals and objectives of the strategy are met. The three-phased approach highlights the steps that are essential in developing a targeted and meaningful KM/KT strategy that can be both adaptable and sustainable over the course of the exercise.

1. KM/KT Approaches, Models and Methods

INTRODUCTION

There are many ways for an organization to identify, store and transfer knowledge. Some will work better in one organization than another. This section of the Toolkit is expected to provide a high level roadmap to some of the key steps your organization may wish to consider in developing its KM/KT strategy and programs. More specifically it outlines the related approaches and activities that are important to getting started in establishing an approach to KM/KT and further supporting its more advanced development over time. Each sub-section of the Toolkit includes a number of key questions you should reflect upon when determining your organization's or division's approach to KM/KT.

Tip for Getting Started

Selecting the approach that is optimal for your organization will require an understanding of:

- Needs;
- Value proposition i.e. what business problems you are trying to solve;
- Business drivers and business characteristics;
- Culture and Organizational Structure (including processes);
- Current KM/KT activities;
- Nature of Knowledge being used and associated technology; and
- End-Users.

For a general overview, including theory, on KM/KT, please refer to ***Appendix A*** of this document.

WHAT IS A KNOWLEDGE MANAGEMENT (KM) / KNOWLEDGE TRANSFER (KT) STRATEGY?

A KM/KT strategy is simply a plan that describes how an organization might start to look at its knowledge and expertise in a strategic manner and how it will share and apply that knowledge and expertise. While the development of a KM/KT strategy is recommended, it is not necessary to wait until you have one in place before you can start KM/KT. More often than not, KM/KT initiatives begin before there is a strategy; and the strategy is a way of consolidating, improving and systematizing existing activities.

Insights from other Industries

Management consulting firms were among the first businesses to pay attention and make heavy investments in the management of knowledge and the first to explore the use of IT to capture and disseminate knowledge. Firms have chosen different strategies: Andersen, Ernst & Young, KPMG have pursued a codification strategy using internal company global electronic repositories such as industry knowledge, proposals, projects, previous solutions, tools and practices. In contrast, firms such as Boston Consulting and McKinsey have emphasized personalization KM strategies through investing in building networks of people; sharing knowledge face to face, by telephone, email and video conferencing. These firms are more likely to solve a problem by checking their "people finder' database for expert contacts and then calling them directly.

WHAT ARE THE BENEFITS OF DEVELOPING A KM/KT STRATEGY?

A good and clear strategy can help to:

- Increase awareness and understanding of good KM practice;
- Give you a clear, communicable plan about where you are now, where you want to go, and how you plan to get there;
- Gain senior management commitment;
- Integrate KM into the corporate culture;
- Attract resources for implementation; and
- Provide a basis against which you can measure progress.

The most important factors in guiding a KM/KT strategy are the organization's overall strategy and goals. A KM/KT strategy should also be consistent with human resource and information technology strategies. As such, there are two main strategies for KM/KT[1]:

- **Codification**: Knowledge is carefully codified and sorted in databases where it can be accessed and used easily by anyone in the company.

[1] Hanson, Nohria, Tierney (2007)

- **Personalization**: Knowledge is closely tied to the person that developed it and is shared mainly through direct person to person contacts.

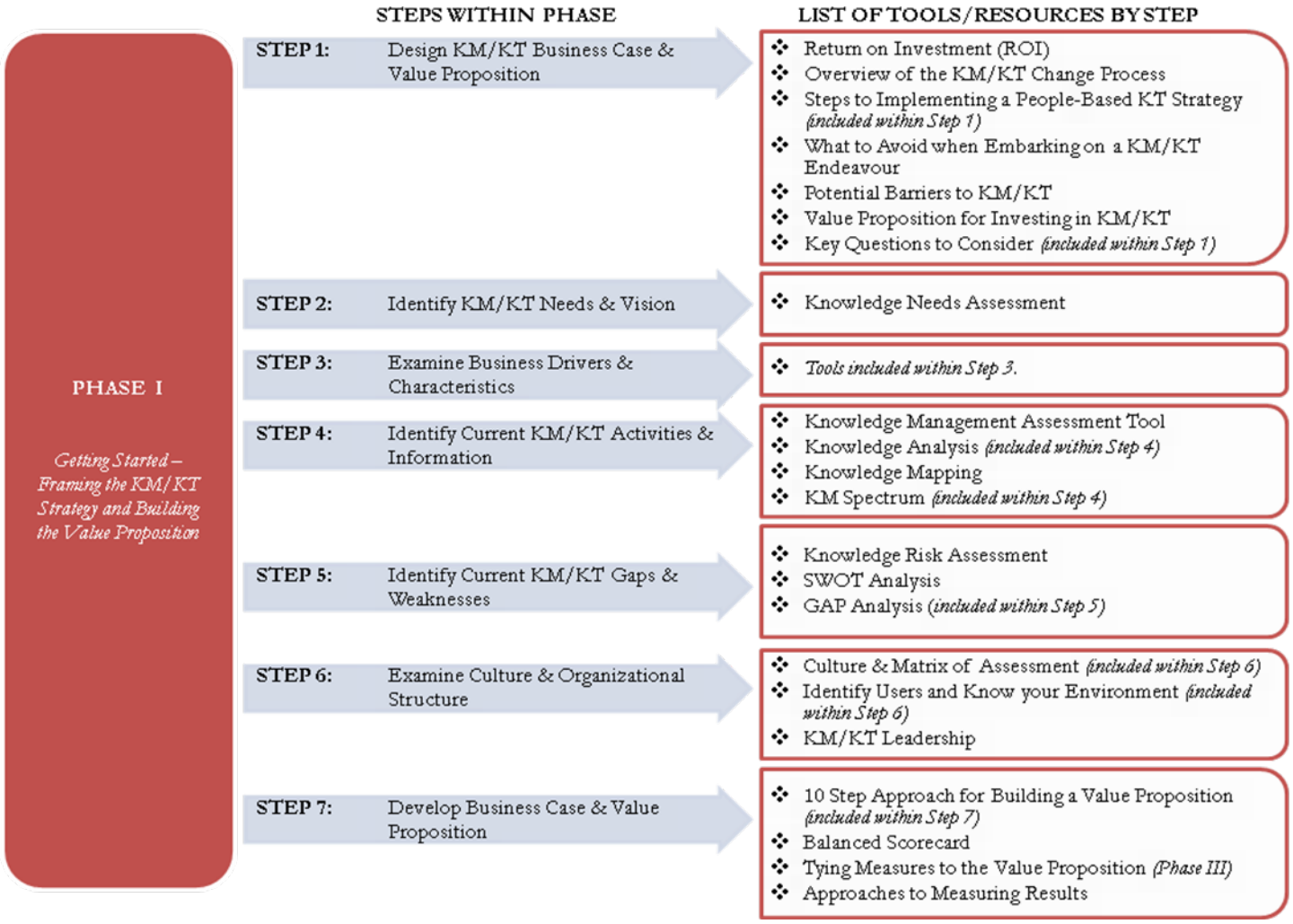
Organizations should implement both strategies but one strategy should be the primary strategy with the second acting as a supporting strategy i.e. it is recommended to move forward with a people-based solution that is supported by technology to promote dialogue (collaboration) and cataloguing know how (repository).

For example, financial companies are likely to focus on analytical KM/KT due to being heavily information-based and highly regulated; professional services are likely to opt for developmental KM/KT because people are their primary knowledge sources; process and electricity-based industries might focus more on process management and transactional KM/KT to support best practices and innovation.

As illustrated in the table below, the organizational models for each strategy differ depending on the type of organization, particularly its products and services and its culture:

	Consulting Firms	
Org. Models	Codification Strategy	Personalization Strategy
Economic	• Large one time investments in a knowledge asset(s) • Use teams with a high ratio of associates to partners • Focus on generating large overall revenues.	• Charge high fees for customized solutions to unique problems • Use small teams with a low ratio of associates to partners • Maintain high profit margins.
Knowledge-based	• People to documents • Develop electronic document systems that codify, store, disseminate and allow reuse of knowledge	• Person to person • Develop networks for linking people so that tacit knowledge can be shared
IT	• Invest heavily in IT • Goal is to connect people with reusable codified knowledge	• Invest moderately in OT • Goal is to facilitate dialogue and the exchange of tacit knowledge
Human Resources	• Hire university graduates suited to the reuse of knowledge and the implementation of such solutions • Reward people for using and contributing to document databases	• Hire MBAs who like problem-solving and can tolerate ambiguity • Reward people for sharing knowledge with others.

PHASE I: GETTING STARTED: FRAMING YOUR KM STRATEGY AND BUILDING THE VALUE PROPOSITION



STEP 1: DESIGN THE KM/KT BUSINESS CASE & VALUE PROPOSITION

THE VALUE PROPOSITION OR FOCUS

To extract value out of knowledge, you must clearly define their *value propositions* – what you hope to achieve through the more effective management and transfer of knowledge. The value proposition provides a focus and a clear link between KM/KT actions and the outcomes; it also provides a business case for the KM/KT action (involvement). It helps ensure that valuable resources are applied to high payoff areas and helps guarantee transfer of the 'right' knowledge and gets management's attention and funding. Organizations tend to have one main focus, although some have two.

To find the value proposition in your organization you will need to identify "what counts', then understand the organization's culture and empower people through teams and standardized technologies. As previously noted, it is recommended that you move forward with a people-based solution that is supported by technology to promote dialogue (collaboration) and cataloguing know how (repository).

Value propositions tend to fall into three basic categories:

Tip

Critical to the successful implementation of KM and KT is to ensure that your efforts are strongly linked to your organization's business objectives and focusing in on one or two priorities. As such, KM/KT cannot just be a general aspiration. Any team or organization planning to undertake KM/KT projects must understand the strategic role of knowledge that they are managing, and how the knowledge is linked to management decisions and processes (Skyrme and Amidon, 1999). The critical message is that there needs to be a strong link to the business imperative and it has to align (or change) the corporate culture and be supported by a well developed IT infrastructure.

- **Customer Intimacy/Focus** –focuses on harnessing organizational knowledge to better sell to and service customers by capturing knowledge about customers; developing and transferring knowledge and understanding of customers' needs, preferences, and business to increase sales; as well as, bringing the knowledge of the organization to bear on customer problems this could include investing in systems to collect information about customers, such as CRM, data mining, business intelligence, etc..
- **Product-to-Market Excellence (or Product / Service Leadership Focus)** - focuses on speeding up the product development cycle (through creativity, innovation and bringing new ideas to market quickly). This proposition is focused on two transfer strategies: (1) ensuring new ideas and new design from inside and outside the organization are incorporated into product and service offerings; and (2) accelerating the product development process by reusing lessons learned from earlier attempts. KM/KT strategies could include collaboration, communities, discussion forums etc.
- **Operational Excellence** - focuses on using best practices to improve the internal performance of an enterprise. More specifically, this value proposition focuses on the transfer of operational processes and know-how from top-performing business units and processes to less-well-performing businesses, ultimately improving the organization's overall performance, reducing expenses, minimizing overheads; eliminating intermediate production steps; optimizing business processes and increasing revenues. Invest in systems such as best practices transfer, TQM, business process reengineering, process improvement, etc.

Each value proposition may necessitate a different overall approach. The key learning behind these value propositions is simply that a KM/KT effort must be designed to help solve an important business problem.

KEY QUESTIONS TO CONSIDER FOR THE VALUE PROPOSITION:

- What is your core focus or value proposition– customer, product, operational efficiency?

Customer intimacy/focus – *knowing everything about your customer*

- Would your firm fail to survive without robust/deep information on your customers?
- Can you think of any areas where improved relationships with information about customers would improve business performance?
- Do you offer standardized or customized products / services?
- Do you offer standardized or customized products and/or services?
- Do you have a mature or innovative product / service?
- Can you think of any products / services on the market that are ahead of yours?

Product-to-Market Excellence (or Product/Service Leadership) – *State of the art / new ideas to market / creative*

- Would your firm fail to survive if it did not provide state-of-the-art products?
- Do you have a mature or innovative product / service?
- Do any of your competitors have products on the market ahead of you?

Operational excellence – *internal efficiencies and effectiveness*
- Would your organization fail to survive if its processes were carried out inefficiently?
- Can you think of internal functions that require improvement?

The KM Strategy Matrix below will enable each of the main criteria/questions within the value proposition development step to be assessed and ranked according to the degree of relevance. This assessment will contribute towards understanding the area(s) of focus within the value proposition and draw attention to areas of significance for management.

KM Strategy Assessment Matrix[2]

LEVEL 5 (HIGH)	Knowledge and learning are integral parts of the overall organizational strategy. A set of tools is available and well communicated, and the capacity to apply them is actively strengthened.
LEVEL 4	A knowledge and learning strategy exists, but is not integrated with overall goals. A set of tools for knowledge and learning is available and understood by most staff
LEVEL 3	There are ongoing discussions about developing a knowledge and learning strategy. A wide range of tools are being used across the organization.
LEVEL 2	Many people say that sharing knowledge is important to the organizations success. Some people are using some tools to help with learning and sharing.
LEVEL 1 (BASIC)	A few people express that knowledge is important to the organization. Isolated individuals begin to talk about how important – and difficult – it is.

Best Practices and Other Source Documents:
Mini Case Study – Belgium Nuclear Research Centre – *Reference 20*

The following points are important to evaluate when designing the KM/KT strategy for any organization. They will help hone in on specific business goals and objectives which can be leveraged for supporting the business case and value proposition for the KM/KT strategy.

KEY POINTS TO CONSIDER WHEN DESIGNING YOUR KM/KT STRATEGY:

- **Think about capturing versus connecting:** in other words, do you primarily want to focus on collecting information or on connecting people with people? As previously alluded to, this need not be an 'either/or' decision and most KM strategies tend to involve a combination of the two.
- **Balance long-term vision with quick wins:** pick a few core quick win activities where you can make a difference, and prioritize these. Quick win activities can be activities that are easy to plan and implement but will contribute to a positive knowledge-sharing environment (for example monthly meetings to discuss a lessons learned). At the same time, keep your long-term vision in view.
- **Build the evidence with pilots:** pilots allow you to test an approach with a small group of users to find what works and what doesn't, and to refine your approach and get it right before rolling out.
- **Bring it alive:** avoid theoretical language and keep your strategy alive with real examples of KM in practice.

The KM/KT Toolkit, specifically for **Phase I**, contains tools, resources and key questions to consider that can help and guide those embarking on designing a KM/KT strategy including, but not limited, to the following:

[2] Knowledge Transfer Assessment Matrix, European Commission, Research Directorate General (June 2007).

- Return on Investment (ROI)
- Overview of the KM/KT Change Process
- Steps to Implementing a People-Based KT Strategy *(included within Step 1)*
- What to Avoid when Embarking on a KM/KT Endeavour
- Potential Barriers to KM/KT
- Value Proposition for Investing in KM/KT
- Key Questions to Consider *(included within Step 1)*

OTHER USEFUL LINKS AND RESOURCES:

Developing a knowledge management strategy, by R. James, KM Column (online):
http://www.steptwo.com.au/papers/kmc_kmstrategy/index.html

Developing a knowledge management strategy, NeLH online KM library:
http://www.nelh.nhs.uk/knowledge_management/km2/strategy_toolkit.asp

KM Strategy for UNDP Timor Leste:
http://content.undp.org/go/km/Country-Offi ce-KM---Experiences-from-the-Field/download/?d_id=147357

The Cube – visualization of UNDP's business processes:
http://content.undp.org/go/bcpr/BCPR-Documents/download/?d_id=1146079

Links on KM integration into business proceses:
http://km4dev.org/index.php/articles/307

Template for KM country offi ce Action Plans, developed by the UNDP Sub-Regional Resource Facility for the Arab States:
http://www.surf-as.org/FocusAreas/KM/Tools/ActionPlan.xls

Knowledge Management Technology, NeLH online KM library:
http://www.nelh.nhs.uk/knowledge_management/km2/technology.asp

You know when KM is happening in your organization when…:
http://content.undp.org/go/bcpr/BCPR-Documents/ download/?d_id=1145955.
This document was originally posted on a Bellanet facilitated discussion list on Knowledge Management for Development Organizations. Please visit www.bellanet.org for more information.

STEP 2: IDENTIFY KM/KT NEEDS & VISION

NEEDS ASSESSMENT / KNOWLEDGE ANALYSIS

WHAT IS A NEEDS ASSESSMENT/KNOWLEDGE ANALYSIS?

There are as many approaches to KM, as there are definitions, and different situations require different KM approaches. The major difference between the various approaches is that they focus on different aspects of KM, including:

- ⇒ Creating knowledge repositories with a focus on establishing databases or files of external knowledge, structured internal knowledge such as research reports and informal internal knowledge like lessons learned.
- ⇒ Improving knowledge access.
- ⇒ Enhancing the knowledge environment
- ⇒ Managing knowledge as an asset.
- ⇒ Making knowledge and information both visible and accessible through using a variety of different tools.

⇒ Creating a corporate culture that exploits knowledge through sharing of information and creating knowledge from data and information collected by the organization.
⇒ Developing a supporting infrastructure that includes IT, but also mechanisms to connect people.

The range of approaches available can be quite overwhelming; despite the fact there are similarities between key approaches. More than one approach can be used depending on the business need and type of knowledge required by different departments, units or regional locations and / or combining approaches can also be implemented. The most effective managers pay close attention to the combination of human, organizational, technical and strategic issues[3].

Several basic needs assessment techniques include:

- direct observation
- questionnaires
- consultation with persons in key positions, and/or with specific knowledge
- review of relevant literature
- interviews
- focus groups
- tests
- records & report studies
- work samples

WHAT ARE THE BENEFITS OF UNDERTAKING A NEEDS ASSESSMENT/KNOWLEDGE ANALYSIS?

A needs assessment or knowledge analysis (also often called knowledge audit) can reveal the organization's knowledge management needs, strengths, weaknesses, opportunities, threats and risks. It provides an evidence-based assessment of where you need to focus your KM/KT efforts.

The KM/KT Toolkit, specifically for **Phase I**, contains tools, resources and key questions to consider that can help and guide those embarking on identifying KM/KT needs and vision including, but not limited, to the following:

❖ Knowledge Needs Assessment

THE VISION

To motivate employees to collaborate in sharing and creating knowledge, a shift in the way the organization sees itself is crucial. An organization needs to have a strategic shift of vision where it recognizes itself as a knowledge organization. Neglecting this step will replicate the experience of many organizations in which leadership's commitment to KM/KT boils down to changing the IT architecture. This is why a strategic shift in the vision of the organization to one in which it sees itself as a knowledge organization should be championed by leadership and communicated down to all levels of the organization from the start. To do that, an organization may also need to undergo an audit of its culture and values to ensure that the new knowledge-oriented vision is not stifled by an adverse culture. Though effecting a cultural change is among the first steps in implementing KM/KT, it is a change needed at the operational level and will be discussed later in the chapter.

To cultivate a vision for the knowledge organization, leadership and top management need to acknowledge the role that knowledge and learning play in attaining the mission of their organizations.

KEY QUESTIONS TO CONSIDER WHEN PERFORMING A KM/KT NEEDS ASSESSMENT:

[3] Prusak, 2001, Where did knowledge management come from? http://www.conservationcommons.org/media/document/docu-44l8p7.pdf

- What is your need? What do you hope to achieve through KM/KT?
- Where are we now? How do current KM/KT practices (or lack of them) affect your organization's or team's ability to meet its goals? What are the barriers to good KM/KT practices?
- Where do we want to be? An outline of what KM/KT will do for your organization, and how it will help to meet their objectives are important to identify.
- How do we get there? Describe the specific actions that will be taken to get to where you want to be. An action plan should ideally cover the three elements of:
  - **People:** how will you motivate people and realign your organizational culture to a knowledge-friendly one?
  - **Process:** what specific KM tools and processes will you use?
  - **Technology:** how will you develop the supporting technological infrastructure?

USEFUL LINKS AND RESOURCES

HR Guide – Needs Analysis (How to determine Training Needs)
http://www.hr-guide.com/data/G510.htm

Introduction to Training Needs Analysis: Ways to identify the Learning Needs of Employees
http://human-resources-management.suite101.com/article.cfm/introduction_to_training_needs_analysis

BMJ – Learning Needs Assessment
http://www.bmj.com/cgi/content/full/324/7330/156

Strategizing Knowledge Management: Vision The Role Of Leadership
http://www.wdc-econdev.com/strateg-knowledge-management.html

STEP 3: EXAMINE BUSINESS DRIVERS AND CHARACTERISTICS

BUSINESS DRIVERS

There are different business drivers for different sectors and companies. The table below[4] is a tool that provides examples of business drivers for different sectors which have influenced the way organizations in those sectors have approached KM/KT.

Sector	Drivers
Financial	Information based; highly regulated; risk management; highly competitive; fast reaction times. KM Focus: likely analytical.
Professional Services	Knowledge as a product; people as primary resource; mobile workforce; mergers. KM Focus: likely developmental.
Law	People as creators of knowledge; increasing competition; new markets and practices; mobile workforce. KM Focus: likely innovation/creation and support best practices.
Energy	Global; fragmented; R&D; regulated. KM Focus: likely process management and transactional KM or innovation KM if have a heavy R&D focus.
Public Sector	Value for money; cost control; political objectives; customer focus; modernization of processes and structure.

BUSINESS SECTOR CHARACTERISTICS

This approach also uses a business framework for selecting a KM strategy based on an explicit connection between an organization's characteristic, for example, its competitiveness and a KM strategy to help the organization maintain or establish its competitive advantage (Zack (1999). Within this model the KM approach cannot be made

[4] Adapted from Abell and Oxbrow

without reference to competitors; more specifically competitive knowledge is based on a scale of innovation relative to the industry sector: core, advanced and innovative.

- ⇒ **Core knowledge:** is the basic level of knowledge required by companies within a sector. This refers to knowledge that is needed to function in the sector.
- ⇒ **Advanced knowledge:** is specific knowledge that differentiates an organization from its competitors either by knowing more or by applying knowledge in different ways.
- ⇒ **Innovative knowledge**: enables a company to be a market leader and it may change the way a sector works (for example RIM when they introduced Blackberrys).

Using this approach, organizations identify their competitive knowledge position; undertake a SWOT analysis to identify the knowledge gaps which indicates where the organization needs to develop knowledge or grow its competitive position via one of two dimensions:

1. Exploitation vs. exploration – the degree to which an organization needs to increase its knowledge vs. the opportunity to leverage existing knowledge.
2. Internal vs. external – the degree to which knowledge is internal within the organization or externally oriented drawing on publications, consultants etc. Internally oriented organizations build up a unique knowledge, which is difficult for competitors to emulate (e.g. KPMG).

Organizations that are more internally oriented and exploitative of knowledge may choose a conservative KM/KT strategy, while organizations that are externally oriented are more innovative and tend to employ a more aggressive KM/KT strategy.

KEY QUESTIONS TO CONSIDER:

- What are the key drivers in your sector?
- What are your business sector characteristics – is it highly regulated? Innovation and technology capabilities; competitiveness; risk factors, etc?
- Is your focus on following best practices in-house; establishing an external standard; encouraging innovation and creativity; or learning knowledge from data?

STEP 4: IDENTIFY CURRENT KM/KT ACTIVITIES AND INFORMATION

Mapping knowledge flows internally (within the organization) and externally (with customers and other partners) are essential to the understanding of your business environment and how knowledge is used and moved throughout the organization. Maps are created by collecting information on who consults what (database), and who consults who (experts), to detect how knowledge is both applied and generated. The results are then depicted in a graph that shows how knowledge flows between individuals, departments, and from and to the organization. Gaps under this approach are defined as blocks in the knowledge flow or weak knowledge flows that adversely affect the knowledge creation process.

What follows are some key questions you should ask when identifying what KM/KT activities are already underway within your organization.

KEY QUESTIONS TO CONSIDER:

- What kinds of things is your organization already doing to support knowledge creation, management and

transfer that can be built upon?
- What existing and planned systems and processes can support the knowledge sharing and learning strategy, and how should they be deployed?
- What existing and planned organizational initiatives might influence and support the generation, sharing, storing and application of knowledge?
- Do you record important meetings/events/presentations on video or audiotape?
- Are records systems and series established to ensure that valuable information on important events or decisions is saved for an appropriate period of time and accessible to those who need it?
- Are records series in place to archive material critical to documenting the institutional history of your organization?
- Have you documented methods and procedures for the work performed?

IDENTIFY / CLASSIFY THE NATURE OF THE KNOWLEDGE AND TECHNOLOGY

Many see KM/KT as a spectrum whereby explicit and tacit knowledge are considered to be at either end of the spectrum of knowledge types. Such a continuum recognizes that there are 'knowledge types' between the two ends, such as "implicit knowledge" and "explicit knowledge" such as procedural knowledge[5]. (*For more details on the variety of knowledge definitions and types of knowledge please refer to An Overview of KM and KT Theory).*

The KM Spectrum was originally developed to help organizations asses their KM capabilities and select a suitable KM approach for their situation. KM activities are grouped into six categories and each of the categories has particular KM systems of approaches to support them. The KM categories are:

1. Transactional – knowledge is embedded in technology (e.g. codifying knowledge and embedding it in applications for use by Help Desks, call centres, cased based systems, etc)

Rule of Thumb for Selecting KM/KT Applications
The more valuable the knowledge, the less sophisticated the technology that supports it. Tacit knowledge is best shared through people while explicit knowledge can be shared through machines. Tacit knowledge generally means less high-tech.

Caution: any KM strategy must put people first.

O'Dell & Grayson (1998)

2. Analytical – knowledge is derived from external data sources (e.g. customer information)
3. Asset management – explicit management of knowledge assets which can be reused in different ways.
4. Process based – the codification and improvement of business practices and sharing improvements within the company.
5. Developmental – building the capabilities of the company's workers through training and development.
6. Innovation / Creation – fostering and environment which promotes the creation of knowledge (e.g. focuses on facilitating knowledge transfer through facilitating and sharing and creation of new knowledge which rests in tacit form in people's heads) (MARS Centre approach in Toronto).

These 6 categories form a progression from the management of explicit knowledge at one end to tacit knowledge at the other. For each element in the spectrum, enabling technologies are listed that are used to implement the kinds of KM applications. This information provides a way to identify the KM activity already being done in an organization, even if it was not previously perceived in KM terms (Binney, 2001).

The following table refers to approaches in classify KM and the associated technologies used to capture/store knowledge. For example, if the business is primarily customer service oriented then it is likely a more transactional

[5] Binney, 2001, Nickols, 2000, Beckman, 1999

and an organization might then examine the types of KM solutions found under *"transactional"*. If a company is a consultant think tank, for example, then their core business might be *"analytical"* and would therefore look for solutions under this heading. If an organization is mainly concerned with improving internal processes – then the *"process"* KM solutions may be most appropriate. If you are an emerging technology firm such as RIM / APPLE etc., and see your company competitive edge as innovation then *"innovation/creation"* would be the KM / KT solutions.

Table 1: KM Spectrum, Applications and Enabling Technologies

Transactional	Analytical	Asset Mgmt. & Improvement	Process	Developmental	Innovation / Creation
Applications					
▪ Cased Based Reasoning ▪ Help Desk Applications ▪ Customer Service Applications ▪ Order Entry Applications ▪ Service Agent Support Applications	▪ Data warehousing ▪ Data Mining ▪ Business Intelligence ▪ Management Information Systems ▪ Decision Support Systems ▪ Customer Relationship Mgmt ▪ Competitive Intelligence	▪ Intellectual Property ▪ Document Mgmt ▪ Knowledge Valuation ▪ Knowledge Repositories ▪ Content Mgmt ▪ Supply chain Mgmt ▪ Allocation of resources ▪ Time/Motion studies	▪ TQM ▪ Benchmarking ▪ Best Practices ▪ Quality Mgmt ▪ Business Process Reengineering ▪ Process Automation ▪ Lessons Learned ▪ ISO. Sigma Six, Standards, etc.	▪ Skills Development ▪ Staff Competencies ▪ Learning ▪ Training	▪ Communities ▪ Collaboration ▪ Discussion Forums ▪ Networking ▪ Virtual Teams ▪ R&D ▪ Multi-disciplinary Teams
Enabling Technologies					
▪ Expert systems ▪ Cognitive technologies ▪ Rule based expert systems ▪ Rule induction decision trees ▪ Geospatial Information systems ▪ Probability networks	▪ Intelligent Agents ▪ Web Crawlers ▪ Relational DBMS ▪ Neural Computing ▪ Push Technologies ▪ Data Analysis & Reporting Tools	▪ Document Mgmt Tools ▪ Search Engines ▪ Knowledge Maps ▪ Library Systems ▪ Logic Models ▪ Operational Research techniques	▪ Workflow Mgmt ▪ Process Modelling Tools	▪ On-line training ▪ e-learning ▪ Training	▪ Groupware ▪ Email ▪ Chat Rooms ▪ Video Conferencing ▪ Search engines ▪ Voice Mail ▪ Bulletin Boards ▪ Push technologies ▪ Simulation technologies

Source: Binney, 2001

The table, reproduced below, is useful for understanding the similarities and nuances of the different approaches and provides links to various authors who have written on this area of the KM spectrum.

Table 2: KM Spectrum Mapped to other KM Classifications *(Haggie and Kingston, 2003 p. 9)*

KM Spectrum	Transactional	Analytical	Asset Mgmt	Process	Developmental	Innovation / Creation
KM Accessibility	Explicit		Implicit		Tacit	

KM Conversion	Combination		Externalization		Internalization	Socialization
Social Learning Cycle (Boisot)	Problem solving	Scanning Abstraction	Impacting		Diffusion	Absorption
KM Type	Mostly procedural	Mostly declarative	Declarative	Procedural	Either	Either
Value Disciplines (Treacy & Wiersema, O'Dell & Grayson)	Operational excellence	Customer Intimacy	Any	Operational excellence	Any	Product Leadership
KM Strategies (Wiig, APQC)	Knowledge transfer	Customer focused knowledge	Intellectual asset Mgmt	Knowledge transfer	Personal Knowledge Asset Mgmt	Knowledge creation
KM Strategies (Day & Wendler)	Developing & transferring best practices	Creating new industry from embedded knowledge	Creating a standard by releasing proprietary knowledge	Developing & transferring best practices	Transferring best practices	Fostering and commercializing innovation
KM Strategy Type (Zack)	Conservative (exploiting existing knowledge)				Aggressive (creating new knowledge)	

For a listing of factors impacting KM, which include technology and its limitations please refer to An Overview of KM and KT Theory.

KEY QUESTIONS TO CONSIDER:

Nature of Knowledge

- Do your people rely on explicit or tacit knowledge to solve their problems?
- What are the key knowledge assets in the organization? – Who possess them? Who uses them? Are they available in the right form and place and at the right time and of appropriate quality?
- What is the task type of these key assets? – Classification, diagnosis, assessment, configuration, scheduling.
- Is the knowledge used largely symbolic, numerical, geometric or perceptual?
- Is the knowledge available?

Technology

- What applications do you think you need?
- What technologies do you think you need? What technologies do you currently have skills in?
- What resources are used in business process? – information systems, equipment, materials, technology, patents, etc/
- Do you plan to analyze existing knowledge or create new knowledge
- Would you consider that your major activities fall into one or more of the following task types:
    - Classification
    - Diagnosis
    - Assessment
    - Monitoring
    - Optimization
    - Configuration / design

The KM/KT Toolkit, specifically for **Phase I**, contains tools, resources and key questions to consider that can help and guide those embarking on identifying current/existing KM/KT activities including, but not limited, to the following:

- Knowledge Management Assessment Tool
- Knowledge Analysis *(included within Step 4)*
- Knowledge Mapping
- KM Spectrum *(included within Step 4)*

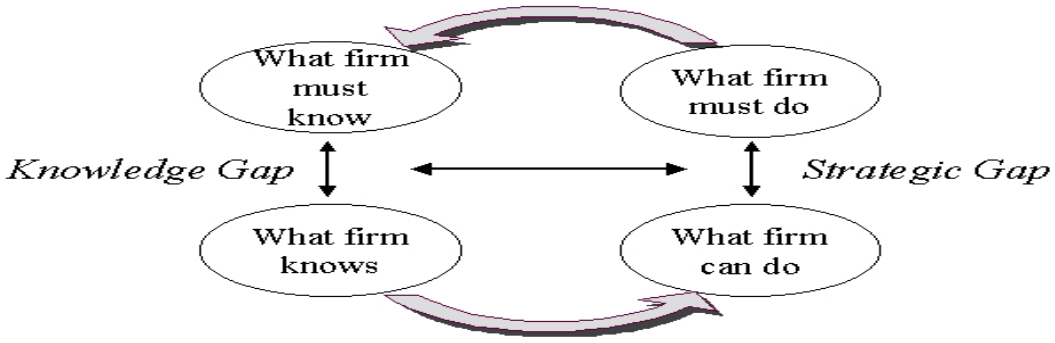
STEP 5: IDENTIFY CURRENT KM/KT GAPS AND WEAKNESSES

Following setting the right vision and the right mindset, leadership needs to take KM to the next step at the strategic level where it decides on the knowledge strategies that will enable it to achieve its goals. This step cannot be effectively undertaken without first carrying out a knowledge audit and a gap analysis to discover the knowledge resources that the organization has and lacks. To discover gaps, an organization should be able to assess weaknesses in both its explicit and tacit knowledge resources that will hinder it from attaining the desired competitive position. These gaps may also be identified by reference to the products that an organization aspires to introduce into the market in comparison with the products of the competition as a benchmark.

A number of approaches have evolved for knowledge audits and gap analysis: stock/inventory taking, mapping internal and external knowledge flows, and mapping knowledge resources. Under the first approach of inventory taking, the organization looks at the available knowledge resources (e.g., databases, information, experts, and best practices) and then assesses these by reference to their identified knowledge needs. Sometimes the knowledge audit is performed by reference to competencies and knowledge areas in which the organization competes or plans to compete.

KNOWLEDGE GAP ANALYSIS

Gap analysis is a useful tool for helping a company to keep focus on larger strategy. By identifying where a company currently stands and where it wants to be, it becomes easier to identify how to attain the desired level of knowledge throughout the company. Knowledge gap analysis is a way of looking at what knowledge resources a company, or individual, has in place. Current knowledge is compared to the target level and a plan is developed to attain that level. Knowledge gap analysis is used to gauge the knowledge possessed. By performing this type of analysis, a company can gain a better understanding of the knowledge base it currently has available and what knowledge is needed to achieve its goals.



BENEFITS

Knowledge gap analysis carries the benefit of being very simple to execute and understand. Further, by establishing the goal relative to the current level of knowledge within the company, it is easier to develop and implement a plan. Knowledge is a tangible resource; it can be tested and monitored but its value is only as good as the methods recording it.

The KM/KT Toolkit, specifically for **Phase I**, contains tools, resources and key questions to consider that can help and guide those embarking on identifying current/existing KM/KT gaps and weaknesses including, but not limited, to the following:

- Knowledge Risk Assessment
- SWOT Analysis
- GAP Analysis (*included within Step 5)*

STEP 6: EXAMINE YOUR CULTURE AND ORGANIZATIONAL STRUCTURE

It is vital to determine the knowledge pulse of the organization to understand key obstacles, challenges and pitfalls that may be encountered through the KM/KT strategy development.

IDENTIFY WHO YOUR USERS ARE

Everyone soaks up knowledge a different way; a key indicator of how a person learns is his or her age. There is an abundance of research that indicates how different generations absorb information, use knowledge and communicate. Today's workforce is composed of four distinct generations – Matures or Veterans, Boomers, Gen Xers, and Gen Yers or Millennials – each of whom tends to learn differently (Greenes & Piktialis, 2008b). Because individuals in each generation were exposed to different events and technology at different ages (resulting in cohorts referred to as digital natives and digital immigrants), generational differences can influence the success of knowledge transfer efforts, especially when the givers and receivers are members of different generations. Furthermore, everyone is different when it comes to their preferences for both how to share what they know and for ways of adopting knowledge and learning from others. Understanding these preferences and selecting a method for KM/KT that best suits the 'sources and receivers' is the key to effectiveness; ensuring the method will be useful to your organization. The challenge, therefore, is to identify and develop a holistic approach or complementary ways to manage and transfer knowledge in an organization to meet specific KM/KT needs for the organization as well as the needs of teams and individuals.

KEY QUESTIONS TO CONSIDER:

- Who are the primary audiences and users of KM/KT?
- Who are the key decision makers, providers, users or beneficiaries of knowledge?

Below are some tools and guides that can assist in assessing the "knowledge" culture within your organization:

A Pro-Sharing Culture	An Anti-Sharing Culture
Learning through teaching and sharing	There are no incentives or sanctions to promote sharing of information and insights. Many incentives and support systems work against this concept
Communal understanding through story telling	Staff may feel they are constantly fighting the clock. Little time or attention is given to identifying lessons learned from projects
Continuous exchange and creation of new knowledge – as experimentation occurs people share and learn	Assumptions about projects or activities are not challenged
Common areas of interest and expertise	Individuals are hired and promoted based on technical

	expertise
Common issues and problems; strong professional ethics	Management and staff are reluctant to talk about projects that did not work well ("sharing your failure")
Personal relationships	The different missions and visions of divisions or departments produce different cultures that inhibit the transfer of knowledge and lessons learned

Matrix to Support Cultural Assessment[6]

LEVEL 5 (HIGH)	Managers and leaders recognize and reinforce the link between knowledge, learning and performance. Managers regularly apply relevant tools and techniques, and act as learning role models. Staff ToRs contain references to knowledge sharing and learning.
LEVEL 4	Management view knowledge and learning as everyone's responsibility. Managers increasingly ask for, and exhibit learning approaches. There are rewards and incentives for using such approaches.
LEVEL 3	Knowledge and learning is viewed as the responsibility of a specific role or roles. Some managers talk the talk, but don't always walk the walk!
LEVEL 2	Some managers give people the time to share and learn, but there is little visible support from the top.
LEVEL 1 (BASIC)	Knowledge and learning viewed with scepticisms. Management think learning leads to lack of accountability. 'Knowledge is power' at the highest levels of the organization.

Through evaluation and understanding of the organizations cultural willingness to undertake and participate in a KM/KT initiative, management will be prepared to anticipate obstacles and leverage strengths and opportunities.

KEY QUESTIONS TO CONSIDER:

- What is your organizational structure (hierarchical, organic and loose) and culture in relation to knowledge development and sharing? Is it a culture based on openness and sharing (team) or information or is information hoarded in particular areas of the organization (individualistic)?
- How might leadership and governance support the KM strategy
- How might existing institutional structures support the KM strategy
- Do you have a communications system in place that encourages the sharing of information on all aspects of your organization's operations and experience across organizational boundaries?
- What are the cultural "rules' of the organization? – Styles of working; authority structures; communication styles and networks.
- What role can/should HR staff play in a KM/KT effort?

USEFUL LINKS AND RESOURCES

Creating a Knowledge culture
http://www.mckinseyquarterly.com/Creating_a_knowledge_culture_991
The 3C's of Knowledge Sharing: Culture, Cooperation and Commitment
http://www.skyrme.com/updates/u64_f1.htm
Building a Knowledge Culture – An Education and Training Action Plan for the Information Economy

[6] Knowledge Transfer Assessment Matrix, European Commission, Research Directorate General (June 2007)

http://www.curriculum.edu.au/verve/_resources/Building_a_Knowledge_Culture.pdf

The KM/KT Toolkit, specifically for **Phase I**, contains tools, resources and key questions to consider that can help and guide those embarking on identifying an organization's cultural openness to KM/KT activities including, but not limited, to the following:

- Culture & Matrix of Assessment *(included within Step 6)*
- Identify Users and Know your Environment *(included within Step 6)*
- KM/KT Leadership

STEP 7: DEVELOPING THE BUSINESS CASE & VALUE PROPOSITION

The following is a 10 step approach to building a KM/KT Value Proposition to both small (targeted) and large (enterprise) strategies:

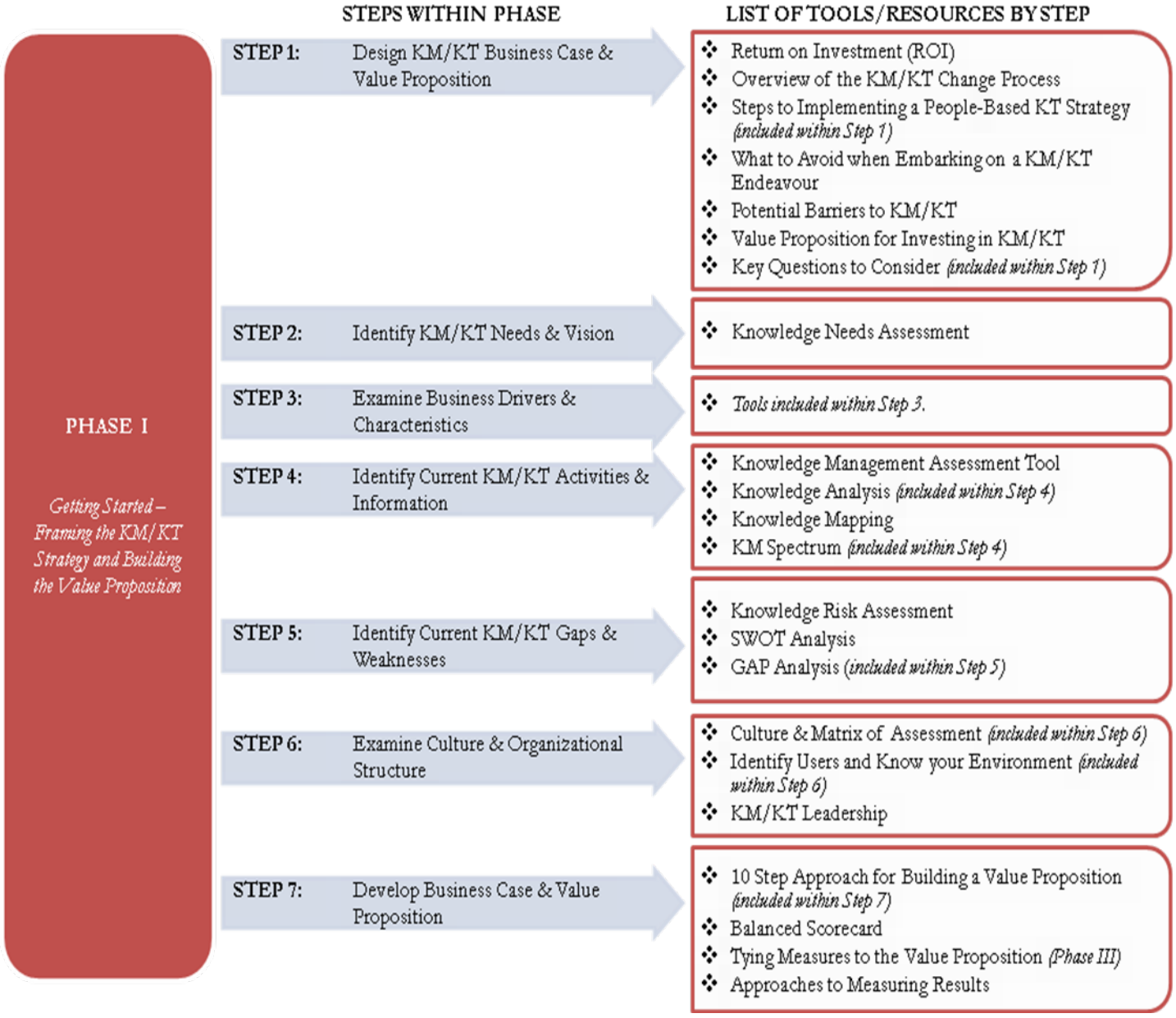
1. What is the problem that needs to be solved?
   - ⇒ What data do you have to support that there is a problem?
2. What is the opportunity and how can the organization benefit?
3. Overview of current situation
   - ⇒ What is the relevant history?
   - ⇒ What is likely to happen if the project doesn't go forward
4. Describe the proposed solution
   - ⇒ How does the proposed project/initiative address the problem?
   - ⇒ What are the objectives of the proposed project/initiative
   - ⇒ Who will need to be involved in developing and implementing the proposed project/initiative
     - Location/sites/departments involved
     - Key functions involved
     - Key stakeholders involved/impacted
   - ⇒ Restrictions within which the project must work
     - What is out of scope
   - ⇒ Strategic alignment
     - What will be the result of the project
5. What are competitors doing?
6. Describe the findings from any needs assessment/SWOT analysis
7. Review of possible KM/KT options
   - ⇒ Options should include: Status quo; your project and perhaps an alternative
   - ⇒ Options should include an assessment of :
     - Risks
     - Cost and benefits (include both quantitative and qualitative)
       - Include an itemized list of cost requirements both one time and ongoing
     - Achievement of key KM/KT goals and overall impact
       - Impacts should include an assessment of business impacts (strategic, longer-term focus) operational (procedural, detailed and more short-term focus) ROI,
8. Make recommendation on preferred option
   - ⇒ Identify key considerations for implementation of preferred option
9. Present high level implementation strategy
10. Identify steps for moving the business case forward
    - ⇒ Develop an executive summary for the business case
    - ⇒ Identify who needs to review the business case
    - ⇒ Identify who will ultimately approve the business case

- Approaches to Measuring Results
- Approaches to Controlling IT Expenditures
- Balanced Scorecard
- Tying Measures to the Value Proposition *(Phase III, Tool 02)*

(PHASE I) SUPPORTING INVENTORY OF TOOLS

NOTE: The KM/KT Toolkit will be structured according to tools, tips, questions and approaches. Phase 1 will specifically focus on KM/KT Foundations – helping organizations assess where they currently stand with KM/KT; how they can leverage and attain management support through the Value Proposition and Return on Investment (ROI); and finally getting started with framing a KM/KT approach and strategy for Phase 2.

Several tools, tips, questions and approaches are embedded within the Phase 1 content and will not be reposted below.



SUPPORTING TOOL/RESOURCE 01: RETURN ON INVESTMENT (ROI)

Findings concluded that ROI often exceeded ten times the original investment. Traditional financial models do not allow the assessment of a company's true worth where the value is not based solely on physical assets but also on knowledge inside people's heads, in corporate files; often intellectual property is the firm's competitive edge. New techniques are needed to measure knowledge and to express it in financial terms. Expressing in financial terms is the basis of development of a business case for KM and selling the investment – be it time and/or money – to senior management and to get senior management commitment.

Sharp and others have recorded the following methods that companies have implemented:

- ⇒ Email volume is an indicator of knowledge sharing
- ⇒ Human capital effectiveness – which is the revenue and profit per employee
- ⇒ Shell International (*see vignette*) calculated its ROI ratio using a random sampling of employees uninvolved in the knowledge sharing activity. They considered the questions asked by drilling and production engineers in its wells community, and then asked a random sample of those engineers to estimate the value of answers they received by virtue of the KM solution. Those values were then extrapolated to the entire community based on the total numbers of questions asked.
- ⇒ Protecting and leveraging patents – brings in revenue through boosting licensing royalties and reduced tax maintenance bills by identifying unused patents that it can allow to expire (used by Monsanto, Dow Chemical).
- ⇒ Providing knowledge already in the organization to support improved decision making to improve insurance underwriting costs.
- ⇒ Replicating internal best practices to improve productivity (used by Xerox).
- ⇒ Time saved through document management translated into hours saved per week (used by Ontario Power Generation)
- ⇒ Knowledge management maturity model developed by the American Productivity and Quality Center.
- ⇒ Surveys – employee, customer, clients
- ⇒ Focus groups / round tables / interviews
- ⇒ Defining ROI in terms of critical failure loss. This method looks at risk avoidance and the costs saved through eliminating and/or reducing the risk. For example, a form might be able to save millions over a five year period by reducing the number of critical incidents where a problem solving failure or a knowledge loss occurs. So if a company has lost significant monies over three years due to preventable knowledge failures, then a KM initiative that could reduce those failures by just 20% would provide significant savings. The firm needs to look at the current risk probability; the level the KM can reduce the risk and the true cost of a critical KM failure.

Source:
Knowledge Management Today: Challenges and Opportunities, Duane Sharp, 2004.

Additional information on ROI is also available within Phase I – Step 1, and within Phase III. ROI is a concept which should be referenced throughout the planning, development and implementation phases of the KM/KT Strategy as it will be one of the key determining components of overall strategy success.

SUPPORTING TOOL/RESOURCE 02: OVERVIEW OF THE KM/KT CHANGE PROCESS

The KM/KT Change Process is a tool which provides a 4 phase approach to implementing within an organization. It is an example of several methods that can be used to implement change.

Below is an outline of a change process to support the introduction of KM/KT to an organization.

1. **Planning** – involves self-assessment (Where are we today?) and a list of clearly defined value propositions (what do we want to become?).

Objectives of Phase 1:

- Assess your current opportunities for knowledge sharing
  - Key questions of this assessment include:
    1. Do you know what knowledge you have now? Who has it? How can you get it, and most critical – which parts of it are truly valuable?
    2. Do senior managers understand and support KM as a business strategy?
    3. Are you systematically transferring knowledge inside your organization?
    4. Are you systematically acquiring outside knowledge? How? From Whom? And is it being used?
    5. Are you leveraging knowledge as a product?
    6. Are you using technology to acquire, disseminate, and transfer knowledge? To everyone? Everywhere? Anytime?
    7. Are you encouraging or discouraging knowledge sharing? Are people sharing? If not, why not?
- Discover your value proposition
  - To do task list

  Start with the business strategy
    - Revisit the organization's competitive strategy
    - Identify key processes and "drivers" that affect success of that strategy

  Understand the current state:
    - Which processes are suffering the most from knowledge gaps now?
    - Are there projects underway now to address these processes? If the organization already is working on projects to support the value proposition, then perhaps these projects can be enhanced through KT
    - Understand the potential improvement (through internal and external benchmarking)
    - Is there valuable knowledge, and information that could be converted to knowledge, that could enhance this process if it were accessible or used in a different manner?
    - Assess, at a high level, the leadership and cultural and technical landscape that will help or hinder a KM initiative

  Develop a KM framework
    - Develop a conceptual model of how KM would help this process or project. You will use this framework to explain to people why KT could lead to better results

  Make realistic choices
    - Pick something (a project, process or problem) that the leadership is committed to improving. Develop a value proposition of how KM/KT would help
- Find a champion

It is critical to find a champion or sponsor who (1) understands the need and (2) has the clout and resources to devote to supporting KM/KT initiatives. Based on the value proposition and the projects

identified, it may be obvious who the champion(s) need to be. Without a powerful champion, the effort will likely stop and lose momentum. Once a champion has been found the team can create a conceptual business case for the initiative. Then they can get the go ahead from the organization, and resources to commence a design phase with a design team

- Inform and prepare the organization

- Define the business case

2. **Design** - a comprehensive design phase involves outlining the roles and functions of people and technologies, as well as any necessary overlay to the organizational structure and performance measures.

The objectives of the Phase 2 are:

- Decide the scale of the initiative
- Use the learning's from others in "best practices in design"
- Create an action plan and marshal all resources (including technologies, people and communications)

3. **Implementation** – normally involves a pilot program (that is, a proof-of-concept) that will test new ideas and yield lessons in what works and what doesn't. Just as critical the implementation stage is likely to provide much-needed success stories to drum up organization-wide enthusiasm.

The objectives of Phase 3 are action oriented:

- Launch the project
- Provide support for both content and process
- Observe and learn
- Achieve results

4. **Scaling up** - the pilot to an enterprise-wide process to capture the full benefits of effective transfer.

The objectives of Phase 4 are to:

- Capture success stories and publicize early results
- Use knowledge gained to expand the scale up
- Create a new organizational structure to oversee the ongoing process

Source: O'Dell, C.S, Essaides, N. & C. Jackson Grayson, Jr. (1998) If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice

SUPPORTING TOOL/RESOURCE 03: WHAT TO AVOID WHEN EMBARKING ON A KM ENDEAVOUR

Organizations may run into problems/obstacles when implementing KM. Laurence Prusak and Liam Fahey have developed a list of the primary errors associated with the development and implementation of KM. These pitfalls are categorized under eleven common errors which organizations should avoid when developing and implementing KM are:

1. Not developing a working definition on knowledge.
   It is important to make the distinction that knowledge is different from data and information

2. Emphasizing knowledge stock to the detriment of knowledge flow
   Knowledge needs to be developed, transmitted and leveraged by individuals. Knowledge is essential to daily work. Each component of "capture – store – retrieve – transmit" is important.

3. Viewing knowledge as existing outside of individuals
   Organizations often fall into the trap of believing knowledge has a life of its own. The problem lies with moving knowledge from individuals into the form of a knowledge system.

4. Not understanding that a fundamental purpose of managing knowledge is to create a shared context.
   Knowledge is dynamic and is forever evolving. Knowledge needs to be transferred to each generation and knowledge stores need to be kept current. Errors need to be correcte4d in the generation, movement and leveraging of knowledge within an organization.

5. Paying little attention to the importance of tacit knowledge.

6. Disentangling knowledge from its uses.
   Information on customers, for example, becomes knowledge when decision makers determine how to take advantage of the information. Most companies now keep data warehouses, but these need to be acted upon to develop knowledge. Collecting, refining and perfecting data does not in itself create knowledge and may in fact not be beneficial to the company's competitive strategy.

7. Downplaying thinking and reasoning
   Organizations should solve problems from multiple angles and with many knowledge workers rather than standardizing solutions. Knowledge generation and use is an ongoing task.

8. Focusing on the past and the present but not the future
   If the intent of knowledge is to inform and influence decision making, then its focus must be on the future. However, in many organizations knowledge is used to understand the past and the present challenges because it is easier to collect data on the past.

9. Failing to recognize the importance of experimentation
   Experiments are a crucial source of data and information necessary for creating knowledge. Organizations need to be careful that the technologies to standardize approaches and processes to not limit experimentation.

10. Substituting technological contact for human contact
    With the improvements in data and information transmission through IT there is a widespread tendency to view these IT tools as knowledge developers. Technological contact is equated with face-to-face dialogue, however people learn and create through direct experience, observation and discussion.

11. Not developing direct measures of knowledge.
    Many companies are measuring knowledge through a variety of methods, such as number of patents, new products developed, customer retention, etc.

Source: "The Eleven Deadliest Sins of Knowledge Management", Liam Fahey and Laurence Prusak, Knowledge Management Program, Texas A&M University. 1998

SUPPORTING TOOL/RESOURCE 04: POTENTIAL BARRIERS TO KM/KT AND POSSIBLE WAYS TO OVERCOME THESE

Lack of Trust	• Build relationships and trust through face-to-face meetings
Different cultures, language / vocabulary, mental models /frames of reference	• Create common ground through education, discussion, publications, teaming and job rotation • Encourage the development of an appreciation of differences in work cultures
Lack of time and meeting paces; narrow idea of productive work	• Establish times and places for KT production and decision-making fairs, talks rooms, conference reports
Status and rewards to knowledge owners	• Evaluation performance provide incentives based on sharing
Lack of absorptive capacity in recipients	• Educate employees for flexibility; provide time for learning; hire for openness for ideas
Belief that knowledge is prerogative of particular groups, not-invented-here syndrome	• Encourage non-hierarchical approach to knowledge; quality of ideas more important that status of source
Intolerance for mistakes or need for help	• Accept and reward creative errors and collaboration; no loss of status from not knowing everything

Source: O'Dell, .S, Essaides, N. & C. Jackson Grayson, Jr. (1998) If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice

SUPPORTING TOOL/RESOURCE 05: VALUE PROPOSITIONS FOR INVESTING IN KM AND KT

KM/KT is important to all companies, particularly in sectors that generate, collect and use a lot of information and data to inform business strategies and to gain a competitive advantage. KM products and services are split between fulfilling organizational needs and identifying those needs and opportunities.

- ⇒ **Fulfilling Needs**–address an KM needs entails surveying the organization for the 'pain points' or areas of continued aggravation.
- ⇒ **Identifying Needs and Opportunities**–Organizations need to be able to use and analyze data and information from a number of sources to elicit emerging issues that need to be resolved and identify opportunities that can benefit the organization and its stakeholders.

Tying Measures to the Value Proposition[7]

When measuring the impact of transfer efforts, take into account your original goal. Each value proposition come with a set of logical "measures" that help you monitor your progress towards your goal, these could include:

Customer Intimacy

- ⇒ Customer retention rates
- ⇒ Number of calls handled per day
- ⇒ Number of calls resolved on first "sitting"
- ⇒ Cross-cutting penetration
- ⇒ Increased revenue from existing customers

Product Leadership

- ⇒ Revenues from commercialization of new product/service
- ⇒ Percentage of revenues from new products//services
- ⇒ Time to market cycles
- ⇒ Ratio of successful to unsuccessful product launches
- ⇒ Number of launches per year

Operational Excellence

- ⇒ Cost per unit
- ⇒ Productivity and yields
- ⇒ Number of defects/poor quality
- ⇒ Production of cycle time
- ⇒ Inventory of carrying costs
- ⇒ Environmental compliance
- ⇒ Safety records

Source: O'Dell, .S, Essaides, N. & C. Jackson Grayson, Jr. (1998) *If Only We Knew What We Know: the Transfer of Internal Knowledge and Best Practice*

Links and Resources in relation to evaluation and monitoring

[7] O'Dell, .S, Essaides, N. & C. Jackson Grayson, Jr. (1998) *If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice.*

UNDP Guidelines on Results Career Assessments (RCA):
http://rca.undp.org/index.cfm

UNDP Results Management Guide Implementation Toolkit:
http://stone.undp.org/system2/managingresults/index.cfm

Measuring the Value of Knowledge Management, NeLH online KM library:
http://www.nelh.nhs.uk/knowledge_management/km2/measurement.asp

Measuring the benefi ts of knowledge management at Financial Services Authority,
by R. Jones, Financial Services Authority, UK Government: http://km4dev.org/index.php/articles/307

SUPPORTING TOOL/RESOURCE 06: KNOWLEDGE NEEDS ASSESSMENT

Key Questions to Consider:

- ⇒ What is your need in relation to KM/KT?
- ⇒ What do you hope to achieve through your investments in KM/KT?
- ⇒ Where are we now?
- ⇒ How do current knowledge management practices (or lack of them) affect your organization's or team's ability to meet its goals?
- ⇒ What are the barriers to good KM/KT practices?
- ⇒ Where do we want to be as an organization in the future?
- ⇒ What is the role of knowledge and innovation within that vision?
- ⇒ How do we get there? An action plan should ideally cover the three elements of:
  - ➢ ***People:*** How will you motivate people and realign your organizational culture to a knowledge-friendly one?
  - ➢ ***Process:*** What specific KM tools and processes will you use?
  - ➢ ***Technology:*** How will you develop the supporting technological infrastructure?

Defining your specific KM/KT need is essential in knowing how to approach and resolve the problem. Some examples may include:

- ⇒ Creating knowledge repositories – focus on establishing databases or files of structured knowledge;
- ⇒ Improving knowledge access;
- ⇒ Enhancing the knowledge environment;
- ⇒ Managing Knowledge as an asset;
- ⇒ Making knowledge an organizational asset;
- ⇒ Creating a corporate culture that encourages knowledge capture and retention through sharing of information; and
- ⇒ Developing a supporting infrastructure that includes IT, but also mechanisms to connect people.

Source:
Organizational Needs Assessment
http://www.hrsdc.gc.ca/eng/workplaceskills/essential_skills/pdfs/assessment/ona.pdf
http://www.worlded.org/docs/Publications/training/jia_human_resources_management_trainer_guide.pdf
http://www.ide.go.jp/English/Publish/Download/Asedp/pdf/066_1.pdf

SUPPORTING TOOL/RESOURCE 07: KNOWLEDGE MANAGEMENT ASSESSMENT TOOL

The tool is divided into five sections: the KM process; leadership; culture; technology; and measurement. The following is a subset of the items and information in the KMAT, with a simplified scoring system.

Directions: Read the statements below and evaluate your association's performance. The scale is as follows:

1 = no, 2 = poor, 3 = fair, 4 = good, and 5 = excellent

Statements	1	2	3	4	5
I. The Knowledge Management Process					
P1. Knowledge Gaps are systematically identified and well-defined processes are used to close them.					
P2. A sophisticated and ethical intelligence gathering mechanism has been developed.					
P3. All staff and volunteers of the association are involved in looking for ideas in traditional and non-traditional places.					
P4. The association has formalized the process of transferring best practices, including documentation and lessons learned.					
P5. "Tacit" knowledge (what staff and volunteers know how to do, but cannot express) is valued and transferred across the association.					
Total of items P1 through P5. _____					
II. Leadership in Knowledge Management					
L1. Managing organizational knowledge is central to the association's strategy.					
L2. The association understands the revenue-generating potential of its knowledge assets and develops strategies for marketing and selling them.					
L3. The association uses learning to support existing core competencies and create new ones.					
L4. Individuals are hired, evaluated and compensated for their contributions to the development of organizational knowledge.					
Total of items L1 through L4. _____					
III. Knowledge Management Culture					
C1. The association encourages and facilitates knowledge sharing.					
C2. A climate of openness and trust permeates the association.					
C3. Customer value creation is acknowledged as a major objective of knowledge management.					
C4. Flexibility and a desire to innovate drive the learning process.					

C5. Staff members take responsibility for their own learning.					
Total of items C1 through C5. _____					
IV. Knowledge Management Technology					
T1. Technology links all members of the association to one another and to all relevant external publics.					
T2. Technology creates an institutional memory that is accessible to the entire enterprise.					
T3. Technology brings the association closer to its members.					
T4. The association fosters development of "human-centered" information technology.					
T5. Technology that supports collaboration is rapidly placed in the hands of staff.					
T6. Information systems are real-time, integrated, and "smart."					
Total of items T1 through T6. _____					
V. Knowledge Management Measurement					
M1. The association has invented ways to link knowledge to financial results.					
M2. The association has developed a specific set of indicators to manage knowledge.					
M3. The association's set of measures balances hard and soft as well as financial and non-financial indicators.					
M4. The association allocates resources toward efforts that measurably increase its knowledge base.					
Total of items M1 through M4. _____					
Total Score _____ out of a possible ___120_____					
Rating =					
Comments for Future Action					

Example 2:

Using the same scoring template as in example 1 grade your organization according to the following questions:

Topic of Review Score

1. Leadership

Does your organization have a compelling knowledge vision and strategy, actively promoted by your Chief Executive, that clearly articulates how knowledge management contributes to achieving organizational objectives? .....

3. Processes .....

Does your organization have systematic processes for gathering, organizing, exploiting and protecting key knowledge assets, including those from external sources?

4. Explicit Knowledge
Is there a rigorously maintained knowledge catalogue, with a structured knowledge tree or taxonomy, that clearly identifies knowledge owners and is readily accessible across the organization? .....

5. Tacit Knowledge
Do you know who your best experts are for different domains of key knowledge, and do you have in place mechanisms to capture their tacit knowledge into an explicit format? .....

6. Knowledge Hubs and Centres
Are there librarians or information management staff that coordinate knowledge repositories and act as focal points for provision of information to support key decision making? .....

7. Market Leverage
Are your knowledge and knowledge management capabilities packaged into products and services and promoted in your organization's external marketing? .....

8. Measures
Does your organization measure and manage its intellectual capital (IC) in a systematic way, and publish regular IC reports to its external stakeholders? .....

9. People/Skills
Have specific knowledge rôles been identified and assigned, and are all senior managers and professionals trained in basic knowledge management techniques? .....

10. Technological Infrastructure
Can all important information be quickly found by new users on your intranet/portal (or similar network) within three mouse clicks? .....

Source:
American Productivity & Quality Center and Arthur Andersen
http://www.apqc.org/km-capability-assessment-tool
Know-All 10: A Quick KM Assessment:
http://www.skyrme.com/tools/know10.htm

SUPPORTING TOOL/RESOURCE 08: KNOWLEDGE MAPPING

A knowledge map is a tool for presenting what knowledge resides where (e.g. people, media, organizational units or sources of knowledge outside the organization) and for demonstrating the patterns of knowledge flow (access, distribution, learning). Knowledge mapping is the first step in creating an inventory of knowledge (i.e. the knowledge base) and developing/improving the processes of knowledge sharing. Its principal purpose and clearest benefit is to show people in an organization or within a network/supply chain very fast where to go when they need expertise. It also helps to understand what knowledge is essential or at risk to be lost and thus needs to be reused or "secured". Based on knowledge maps organizations can go about developing new models for improving knowledge sharing and knowledge flow and the fulfillment of their mission and goals. Knowledge maps can also help in organizing research activities and analyzing the related flow and impact of knowledge. The most common way of presenting a knowledge map is a simple graph with typically 60- 100 nodes representing knowledge repositories/sources and connections representing the flow of knowledge (in a physical or mental sense).

Example 1:

- Highlights areas of specialty knowledge and expertise
- Encourages better use of information and knowledge and reduces "reinventing the wheel"
- Saves time searching for experts in a particular area
- Saves the time of experts by helping others locate needed information quickly

Assess categories of knowledge:

- What do employees *need to know?*
- What do employees *already know?*
- What do employees *already know that organization doesn't need?*
- Measure the *gap* between *need to know but don't already know?*

GETTING STARTED

1. In a series of interviews ask people to provide information about the (structure of) knowledge in the concerned domain (what is linked to each other, how)
2. Let them rate the importance for the company, the difficulty to replace it, whether it is acquired mainly from study or practice and the proportion of staff in the knowledge area who would also know about it.
3. Plot the results on a knowledge map.
4. Analyze the knowledge map and integrate the results in a knowledge management strategy, keeping in mind that a knowledge map is a momentary snapshot and might change.

Example 2:

Below are several steps that can be followed to implement a people-based KM/KT strategy:

Step 1 - Prioritizing positions where knowledge needs to be preserved

This involves identifying positions where the knowledge held is of high strategic importance and the expected rate of attrition is high. A common gauge of importance is that a particular person or group's absence from the workplace would be quickly noticed. Other factors that make a person or a group valuable include their understanding of organization critical procedures and methods; the holding of expert knowledge of key equipment or key business tools; their relationships with key stakeholders; their role as a facilitator of knowledge exchange already within the organization and their specific experience of local conditions and other variants.

Step 2 - Identifying critical at risk knowledge for each position
Once you have identified the positions, people or groups on which to focus knowledge retention efforts, you may need to consider the specific types of knowledge these individuals possess and what the impact will be if these are taken away e.g. ability to perform all tasks related to management of budget, relationships with major clients, knowledge of system shortcuts, expert ability to research new information and so on.

Step 3 - Prioritizing techniques for transferring and managing knowledge
Knowledge management is essentially the ability of a business to create, share and use the collective knowledge of its products, processes and people to increase workplace productivity and reduce activities that "reinvent the wheel".

A knowledge management strategy may encompass a range of specific activities such as the co-ordinated development of codification based systems such as databases, internets, intranets and expert software and process mapping. More importantly for workforce managers, the strategy could include people based activities such as mentoring, training, job shadowing, succession planning, inclusion of knowledge sharing commitments in performance agreements, establishing communities of practice, conducting social network analysis and developing knowledge maps.

Step 4 - Building a plan of action for each potential initiative
For each knowledge transfer and retention activity identified, it will be important to establish a business case or statement of organizational need, to examine the cost of doing nothing and to identify a means of measuring the results for those projects that are to proceed.

Further information on Knowledge Mapping and related tools is also available in Phase II Step 1: Planning the KM/KT Strategy. Knowledge Mapping tools can be used at several points within the KM/KT strategy development.

Source: Department of Employment and Industrial Relations 'A Guide for the Queensland Public Service: Managing an Ageing Workforce' (October 2008) - http://www.psc.qld.gov.au/library/document/catalogue/mature-age/managing-an-ageing-workforce.pdf

Useful Links and Resources:
http://www.daretoshare.ch/en/Dare_To_Share/Knowledge_Management_Toolkit/media/Knowledge%20Map/Knowledge%20Structure%20MaPS.pdf

Applied Knowledge Research Institute (http://www.akri.org/papers/pdf/es2000.pdf)

SUPPORTING TOOL/RESOURCE 09: BALANCED SCORECARD

The balanced scorecard is a strategic planning and management tool that enables an organization to put its strategy into action. BSC helps the organization to align all its activities to its vision and strategic goals, to improve its internal and external communication and to monitor organizational performance against these same strategic goals. The core piece of the tool is a matrix, the so-called balanced scorecard. This matrix depicts the strategic goals that are split into objectives for four dimensions of an organization. It also includes the concrete activities necessary to fulfill the objectives, the expected results of the same as well as the related assigned responsibilities. What is special about the BSC is that it looks at the organization not only from a financial perspective, but also includes other perspectives such as personnel, learning and growth, business processes and customer satisfaction. It therefore yields an integrated, balanced picture of an organization and makes it easy to observe/steer organizational performance.

Getting Started:
Implementing Balanced Scorecards typically includes the following steps:

- Formulate mission, vision and strategic goal of the organization
- Develop the balanced scorecard matrix
- Break down the strategic goal into objectives and concrete activities within the relevant dimensions (e.g. customer view, internal business processes, learning, growth and innovation, finances).
- Come up with and select strategic initiatives/activities (goal, action, indicator)
- Club initiatives into strategic projects.
- Implement strategic projects (clear assignment of responsibilities!).
- Communicate the planned activities and results by means of a reporting scorecard.
- Organize the learning process – reflection, adaption and new projects.

Original methodology
The earliest Balanced Scorecards comprised simple tables broken into four sections – typically these "perspectives" were labelled "Financial", "Customer", "Internal Business Processes", and "Learning & Growth". Designing the Balanced Scorecard required selecting five or six good measures for each perspective.

Many authors have since suggested alternative headings for these perspectives, and also suggested using either additional or fewer perspectives. These suggestions were notably triggered by recognition that different but equivalent headings would yield alternative sets of measures.

The major design challenge faced with this type of Balanced Scorecard is justifying the choice of measures made. "Of all the measures you could have chosen, why did you choose these?" This common question is hard to ask using this type of design process. If users are not confident that the measures within the Balanced Scorecard are well chosen, they will have less confidence in the information it provides. Although less common, these early-style Balanced Scorecards are still designed and used today.

In short, early-style Balanced Scorecards are hard to design in a way to build confidence that they are well designed. Because of this, many are abandoned soon after completion.

Improved methodology
In the mid 1990s, an improved design method emerged. In the new method, measures are selected based on a set of "strategic objectives" plotted on a "strategic linkage model" or "strategy map". With this modified approach, the

strategic objectives are typically distributed across a similar set of "perspectives", as is found in the earlier designs, but the design question becomes slightly less abstract.

Managers have to identify five or six goals within each of the perspectives, and then demonstrate some inter-linking between these goals by plotting causal links on the diagram. Having reached some consensus about the objectives and how they inter-relate, the Balanced Scorecard is devised by choosing suitable measures for each objective. This type of approach provides greater contextual justification for the measures chosen, and is generally easier for managers to work through.

The four perspectives

The grouping of performance measures in general categories (perspectives) is seen to aid in the gathering and selection of the appropriate performance measures for the enterprise. Four general perspectives have been proposed by the Balanced Scorecard:

The **financial perspective** examines if the company's implementation and execution of its strategy are contributing to the bottom-line improvement of the company. It represents the long-term strategic objectives of the organization and thus it incorporates the tangible outcomes of the strategy in traditional financial terms. The three possible stages as described by Kaplan and Norton (1996) are rapid growth, sustain and harvest. Financial objectives and measures for the growth stage will stem from the development and growth of the organization which will lead to increased sales volumes, acquisition of new customers, growth in revenues etc. The sustain stage on the other hand will be characterized by measures that evaluate the effectiveness of the organization to manage its operations and costs, by calculating the return on investment, the return on capital employed, etc. Finally, the harvest stage will be based on cash flow analysis with measures such as payback periods and revenue volume. Some of the most common financial measures that are incorporated in the financial perspective are revenue growth, costs, profit margins, cash flow, net operating income etc.

The **customer perspective** defines the value proposition that the organization will apply in order to satisfy customers and thus generate more sales to the most desired (i.e. the most profitable) customer groups. The measures that are selected for the customer perspective should measure both the value that is delivered to the customer (value position) which may involve time, quality, performance and service and cost and the outcomes that come as a result of this value proposition (e.g., customer satisfaction, market share). The value proposition can be centered on one of the three: operational excellence, customer intimacy or product leadership, while maintaining threshold levels at the other two.

The **internal process perspective** is concerned with the processes that create and deliver the customer value proposition. It focuses on all the activities and key processes required in order for the company to excel at providing the value expected by the customers both productively and efficiently. These can include both short-term and long-term objectives as well as incorporating innovative process development in order to stimulate improvement. In order to identify the measures that correspond to the internal process perspective, Kaplan and Norton propose using certain clusters that group similar value creating processes in an organization. The clusters for the internal process perspective are operations management (by improving asset utilization, supply chain management, etc.), customer management (by expanding and deepening relations), innovation (by new products and services) and regulatory & social (by establishing good relations with the external stakeholders).

The **learning and growth perspective** is the foundation of any strategy and focuses on the intangible assets of an organization, mainly on the internal skills and capabilities that are required to support the value-creating internal processes. The learning and growth perspective is concerned with the jobs (human capital), the systems (information capital), and the climate (organization capital) of the enterprise. These three factors relate to what Kaplan and Norton claim is the infrastructure that is needed in order to enable ambitious objectives in the other

three perspectives to be achieved. This of course will be in the long term, since an improvement in the learning and growth perspective will require certain expenditures that may decrease short-term financial results, whilst contributing to long-term success.

GETTING STARTED:

Implementing Balanced Scorecards typically includes the following steps:

1. Formulate mission, vision and strategic goal of the organization
2. Develop the balanced scorecard matrix
   a) Break down the strategic goal into objectives and concrete activities within the relevant dimensions (e.g. customer view, internal business processes, learning, growth and innovation, finances).
   b) Come up with and select strategic initiatives/activities (goal, action, indicator)
3. Club initiatives into strategic projects.
4. Implement strategic projects (clear assignment of responsibilities!).
5. Communicate the planned activities and results by means of a reporting scorecard.
6. Organize the learning process – reflection, adaption and new projects.

The Balanced Scorecard Matrix

Vision and Strategy				
	Objectives	Measures	Targets	Initiatives
Financial Perspective				
Customer Perspective				
Internal Process Perspective				
Learning and Growth Perspective				

Key Performance Indicators (KPIs)
According to each perspective of the Balanced Scorecard, a number of KPIs can be used such as:

⇒ **Financial:** Cash flow, Return on Investment (ROI), Financial Result, Return on capital employed, Return on equity

⇒ **Customer:** Delivery Performance to Customer – by Date, Delivery Performance to Customer – by Quality, Customer satisfaction rate, Customer Loyalty, Customer retention

⇒ **Internal Business Processes:** Number of Activities, Opportunity Success Rate, Accident Ratios, Overall Equipment Effectiveness

⇒ **Learning & Growth:** Investment Rate, Illness Rate, Internal Promotions %, Employee Turnover, Gender/Racial Ratios

Further information can be found on Balanced Scorecard within Phase III (Measuring Results).
Source: The Balanced Scorecard Institute http://www.balancedscorecard.org/

USEFUL LINKS AND RESOURCES:

Douglas W. Hubbard "How to Measure Anything: Finding the Value of Intangibles in Business" John Wily & Sons, 2007. ISBN 978-0470110126

Cobbold, I. and Lawrie, G. (2002a). "The Development of the Balanced Scorecard as a Strategic Management Tool".

Performance Measurement Association 2002

Kaplan R S and Norton D P (1996) "Balanced Scorecard: Translating Strategy into Action" Harvard Business School
Press

Kaplan, R. S., & Norton, D. P. (2004). Strategy maps: Converting intangible assets into tangible outcomes. Boston:

Harvard Business School Press.

Niven, Paul R. (2006) "Balanced Scorecard. Step-by-step. Maximizing Performance and Maintaining Results".

Enterprise Performance Management Review – A Resource Portal http://www.epmreview.com
http://www.daretoshare.ch/en/Dare_To_Share/Knowledge_Management_Toolkit/media/Balanced%20Scorecard/BalancedScorecardFullTextE.pdf

SUPPORTING TOOL/RESOURCE 10: KNOWLEDGE RISK ASSESSMENT

ASSESSING THE NEED FOR KM/KT – RISK FACTOR ANALYSIS

Factor 1: Expert(s) Retirement Horizon

0pts ☐	1pt ☐	2pts ☐	3pts ☐
3+years	2-3 years	1-2 years	Less than 1 year
Lower Risk			

Factor 2: Importance of Knowledge

0pts ☐	1pt ☐	2pts ☐	3pts ☐
Important to a Specific work team	Important to specific occupation	Important to on component of the Sector e.g. Solar	Critical to the entire Sector
Lower Risk			

Factor 3: Internal Scarcity of Knowledge

0pts ☐	1pt ☐	2pts ☐	3pts ☐
Ample potential number of transferences	Sufficient number of transferences	Limited number of transferences	No/Extremely limited number of transferences
Lower Risk			

Factor 4: External Scarcity of Knowledge

0pts ☐	1pt ☐	2pts ☐	3pts ☐
Ample recruiting pool	Sufficient recruiting pool	Limited recruiting pool	Severely restricted recruiting pool
Lower Risk			

Factor 5: External Scarcity of Knowledge

0pts ☐	1pt ☐	2pts ☐	3pts ☐
Training and documentation is current and complete	Systematized training/documentation is in progress and will take less than 1 year to complete	Ad hoc training/documentation may be put in place or in progress	Knowledge undocumented; exists in experts heads
Lower Risk			

Factor 6: Position Learning Curve

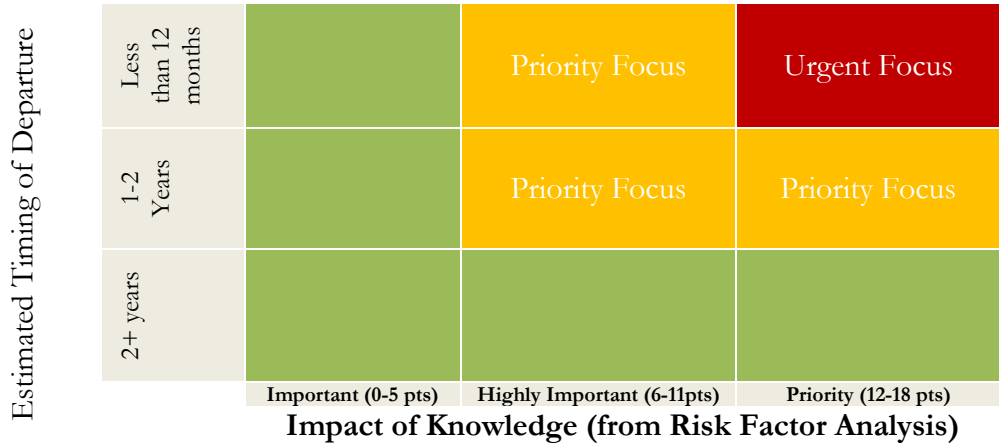
0pts ☐	1pt ☐	2pts ☐	3pts ☐
External/Internal new hires possesses job knowledge	1-2 years	2-3 years	3+ years
Lower Risk			

Scoring		
12-18	High Priority	Immediate Action Needed
6-11	High Importance	Establish Plans/Strategy Now
0-5	Important	Actively watch for changing status / requirements

Your Score:

The information within the above tables are to be used to complete the matrix below. Based on where each priority or business focus may fall, the matrix will help define which should be addressed immediately, thereafter and those that may not need much attention.

KNOWLEDGE RETENTION MATRIX



Adapted from Source: http://www.thelearningcafe.net/downloads/KTInteractiveDemo.pdf

SUPPORTING TOOL/RESOURCE 11: SWOT ANALYSIS

SWOT analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in any other situation of an organization requiring a decision in pursuit of an objective. It involves monitoring the environment of the organization with the aim to identify the key internal and external factors that are important to achieving the objectives. It can be used to develop a plan that takes into considerations many different factors and maximizes the potential of the strengths and opportunities while minimizing the impact of the weaknesses and threats.

A SWOT session also is a means of obtaining information from participants. It enables participants to take a breath, make a judgment and share their visions on the four pillars mentioned above in order to enrich the collective perception of the way the objectives are pursued.

Getting Started:

- Make sure that the objectives pursued are clear to all participants
- Build the SWOT grid (past/future; positive/negative)
- Fill the SWOT grid respecting this order :
  a. Strengths
  b. Weaknesses
  c. Opportunities
  d. Threats
- Ensure that all experiences are taken seriously
- Have the individual actors comment on their contributions and clarify comprehension questions
- Record common aspects first and discuss contradictory opinions later

BENEFITS OF SWOT:

In practice, SWOT proves to be an adaptable and flexible method. The procedure allows different perceptions to be recorded and directs the attention of those involved towards joint action. This procedure is also a simple one and has the advantage of being comprehensible even in an intercultural setting. SWOT facilitates:

⇒ The portrayal of the varying experiences made by different groups of actors. It enables those involved to express their experiences, disappointments, hopes and fears in view of future changes.
⇒ Participatory evaluation and assessment of experiences and perceptions.
⇒ Respect for the experiences, opinions and estimations of marginal groups. It reveals the diverse visions entertained by the various actors and make them comprehensible to all.
⇒ Finding a common language and step-by-step problem-solving. It facilitates the quest for common interest and values.
⇒ The approach to self-evaluation and the elaboration of a built-in evaluation system which reinforces independent piloting by those involved.
⇒ The linking of evaluation (review) with the adjustment of objectives and planning.

The application of the SWOT method is based on values which are the following:
⇒ We build on what the actors in the project know and do and take up their ability to and their interest in guiding and evaluating their work themselves
⇒ We create possibilities which enables the actors to see the effects of their work on the achievement of the project's objectives

⇒ We let them ascertain whether the energy expenditure and the material investment is effective and cost-effective
⇒ We give the actors the opportunity to see the project in the broader context of space and time and to look beyond the pressing immediate objectives
⇒ We develop and strengthen the awareness of joint responsibility.

In short, SWOT converts the persons affected into partners and promotes responsible conduct. What more could be desired of a method of participatory self-evaluation?

GETTING STARTED:

The SWOT method is based on our fundamental ability to repeatedly recall the past and to anticipate the future, and it assigns four universal questions to these two dimensions,

1. Make sure that the objectives pursued by the project are clear to all participants. If SWOT analysis does not start with defining a desired end state or objective, it runs the risk of being useless

2. Build the SWOT grid:

   i. First and foremost, the SWOT grid invites the participants to illuminate a past experience or activity. It locates the experience on the time axis.

   ii. Both the look into the past (review) and the look ahead into the future (anticipation) are complemented by a simple evaluation criterion (positive/negative) creating the four-part SWOT grid.

3. Fulfill the SWOT grid respecting this order :

   a. **Strengths:** successes (qualitative and quantitative), aims achieved, strengths, pleasure, fun
   b. **Weaknesses:** failures, weaknesses, difficulties, bottlenecks, anxiety, dejection
   c. **Opportunities:** potentials, ideas, wishes, trends, unused abilities
   d. **Threats:** obstacles, resistance, unfavourable frame-work conditions

4. Ensure that all experiences find space in SWOT and are taken seriously.
5. Have the individual actors comment on their contributions and clarify comprehension by asking questions.

6. Record common aspects first (consensus) and discuss contradictory opinions (dissent) at a later stage.

SWOT will be referenced throughout each of the 3 phases within the toolkit as it is a tool/resource which can and should be utilised throughout the KM/KT Strategy planning, design and implementation to ensure that all aspects of an organization's corporate strategy are also being aligned and captured.

Source:
Schall Nikolaus, Becker Michael, *Method Finder, Practitioner's guide: Strengths, Weaknesses, Opportunities and Threats (SWOT),* Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Bundesministerium für wirschaftliche Zusammenarbeit und Entwicklung.

Wikipedia : SWOT analysis.

KEK/CDC Consultants, SDC, *SWPO*, Zürich, Bern.

Useful Links and Resources

An example of SWOT analysis in the assessment of the gender dimension of development programmes
http://www.ifad.org/gender/tools/gender/swot.htm

Website providing free SWOT analysis worksheet
http://www.mindtools.com/pages/article/newTMC_05.htm

Examples of SWOT analysis, case studies out of the private sector (Wal-Mart, Starbucks, Nike)
http://marketingteacher.com/Lessons/lesson_swot.htm

SUPPORTING TOOL/RESOURCE 12: APPROACHES TO CONTROLLING IT EXPENDITURES

Use the "stay under one-third of resources" litmus test to ensure IT does not become the "be all and end all" of KM/KT. Two helpful rules of thumb in this regard include:

- *The more "valuable" the knowledge; the less sophisticated the technology that supports it.* Databases and data-mining tools, for example, are high on technological sophistication scale. The knowledge they contain, however, is truly low-grade. In fact, databases do not contain knowledge at all. They contain data. In contrast, help desks, equipped with nothing more than humans and a telephones, are low tech but offer a very high knowledge value. Hence, the higher the grade of knowledge, the lower-tech the solution. The two are inversely correlated.
- *Tacit knowledge is best shared through people; explicit knowledge can be shared through machines. Or, the more tacit the knowledge, the less high-tech the solution.* If you take the continuum between tacit and explicit knowledge (from totally tacit, poorly organized, somewhat documented, to highly documented and organized explicit knowledge), the more explicit the knowledge, the more it lends itself to high-tech solutions. Tacit know-how, meanwhile, is often best transferred via people or "help desks". For example, when World Bank began to organize a sharing mechanism for its tacit and poorly organized explicit knowledge, it set up discussion groups and help desks to help transfer best practices, instead of trying to document them in some mega database.

A company may not need the latest and most comprehensive IT to get their transfer efforts going. But companies will need a *standardized* company-wide architecture to ensure the sustainability and scalability of efforts. Perhaps unlike any other area of technological design, knowledge and best practice sharing cannot take place if companies do not allow for proliferation of separate systems and "IT archipelagos" – i.e. department-specific programs. If a firm does not have the architecture of an organization wide salutation in mind when designing local KM/KT/IT solutions, the organization will, over time, face problems in integration and scalability; subsequently, it stands to lose much of the leverage KM can create. In summary:

- IT and KM have a symbiotic relationship;
- Companies must be careful not to confuse databases and KM. new technologies are certainly enabling and catalytic but they are not a solution in and of themselves;
- Technology may not be the most important component of KM/KT, but try doing without it and you will quickly discover the limits of lunch clubs and informal get-togethers; and
- Finally, IT has to be used with intelligence, matching knowledge types and needs teeth the right IT applications.

Source: Davenport & Prusak (2000), An Investigation Of Environmental Factors Influencing Knowledge Transfer

SUPPORTING TOOL/RESOURCE 13: LEADERSHIP IN KM/KT ORGANIZATION

KM/KT Leadership

One research study that analyzed employee values and satisfaction at 26 large organizations, found that leadership was the single most important factor in successful KM practices. The reason being that employee behaviour is generally a reflection of management behaviours. Studies have found that at least two of the following success factors need to be present for the KM initiative to be successful;

- ⇒ Communication in the organization
- ⇒ Senior management commitment
- ⇒ Collaboration and teamwork
- ⇒ Employee commitment to the concept and practice of KM
- ⇒ Innovative corporate culture
- ⇒ Application of appropriate technology.

Other "enduring principles" have been identified:

- ⇒ Business values drive transfer benefits
- ⇒ Transfer of best practices is the most common and most effective KM strategy
- ⇒ KM must be woven into the corporate infrastructure
- ⇒ KM ear marked funding is rare
- ⇒ Having the 'right' culture is critical
- ⇒ Successful KM efforts employ a 'push-me-pull-you' approach
- ⇒ If it works it really works
- ⇒ Top level support is critical
- ⇒ Technology is a catalyst not a panacea
- ⇒ Mature KM efforts lead to transition from nurturing to measuring

Many experts have found that the most useful applications of knowledge occur when employees are given many opportunities to discuss and debate the definition and use of knowledge. Employees need help to identify what should be their roles as creators and users of knowledge. Managers need to focus on not just the information or facts, but also on what people think they know as they make decisions on behalf of the firm.

The International Institute for Sustainable Development (IISD) analyzed the success factors in KM and their research indicated the following success factors for strengthening KM initiatives:

- ⇒ **Stated rationale for knowledge initiatives**. There are a number of rationales including competitive advantage; knowledge retention, etc. Successful KM/KT strategies need to ensure a shared understanding throughout the organization as to why the KM/KT project/initiative is needed.
- ⇒ **KM efforts need to be connected to an organization's mission and operations.** This component answers the question "knowledge for what ends?" Other organizations (such as CIDA and the World Bank) have both noted that unsuccessful projects are often characterized by a disconnect between the knowledge sharing activities and the day-to-day operations of the organizations.

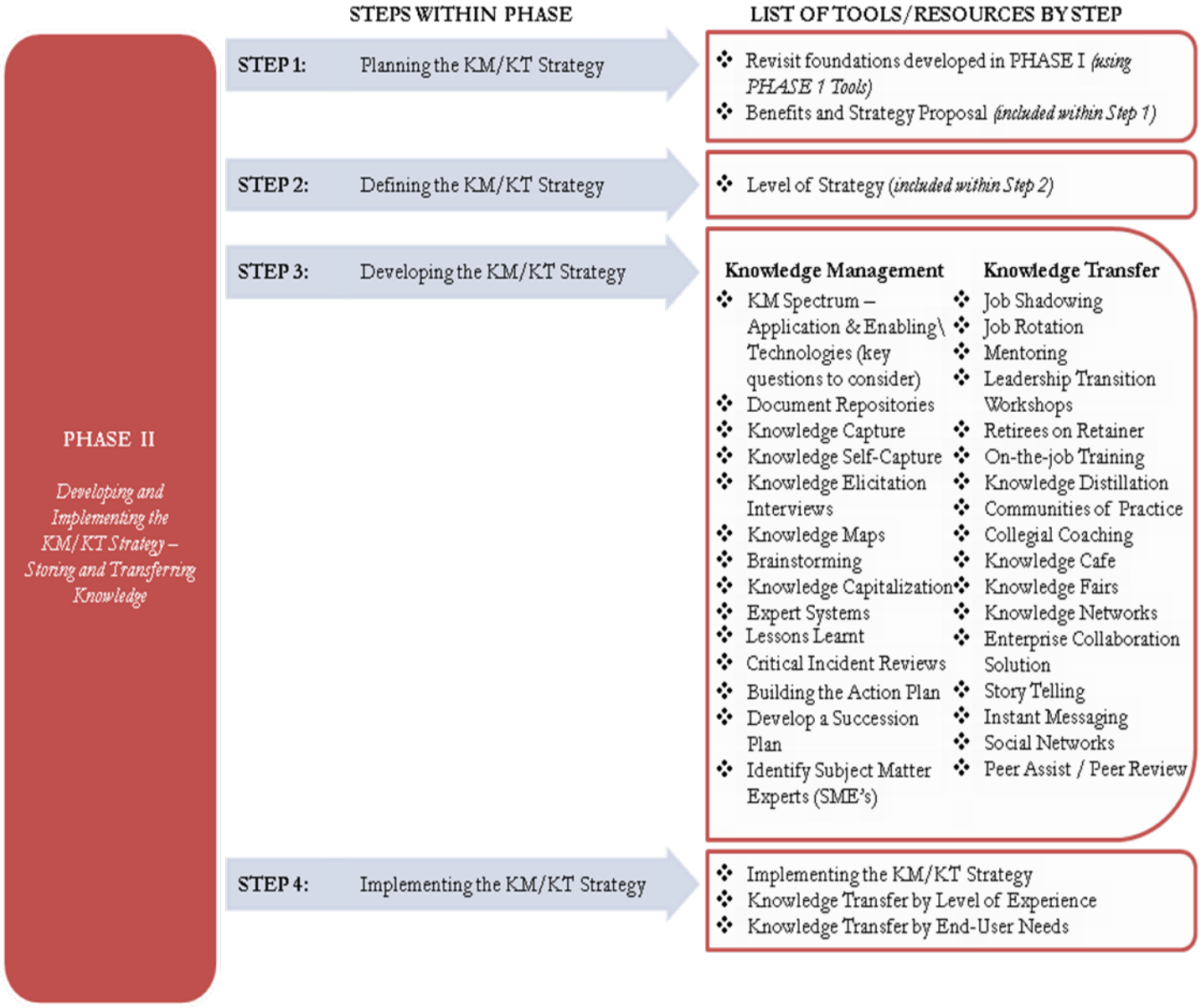
Source:

Heather Creech, Director Knowledge Communications http://www.iisd.org/pdf/2006/networks_km_success.pdf

PHASE II: TAKING THE NEXT STEP: DEVELOPING AND IMPLEMENTING THE KM/KT STRATEGY

Once senior management commitment and resources are secured to support KM/KT, it is important to ensure the right strategy and implementation plans are developed to move ahead in the most efficient, effective and economical direction for your organization. The following steps will help you begin laying the strategic components of the KM/KT strategy and get you started in collecting, organizing and managing information for transferring purposes:

1. Planning the KM/KT Strategy
2. Defining the KM/KT Strategy
3. Developing the KM/KT Strategy
4. Implementing the KM/KT Strategy



Overview

Knowledge and information can leak in all sorts of ways and at all sorts of times. To make sure that essential knowledge is retained by an organization requires, a range of techniques, from traditional information management tools such as shared drives, as well as more modern techniques such as blogs and knowledge based exit interviews can be employed to ensure that knowledge is not only stored but transferred.

What follows is a comprehensive compendium or inventory of various KM and KT methods gathered through an extensive literature review which provide a starting point to help establish clear entry points for using this toolkit. Some of the most popular methods outlined in this compendium are further supported by leading approaches/tools[8] or "how to guides" (where appropriate) which provide a brief introduction and orientation to the subject followed by comprehensive accounts of how to apply these tools and suggestions followed by further resources that might prove useful as well as best practices of their application within the sector (where available/applicable).

Many of these tools are simple and trying them out requires nothing more than the desire to try something new. Undertaking them effectively requires effective – sometimes advanced – facilitation and communication skills. Other tools covered here are more complex, and call for significant planning and resources if they are to be delivered effectively.

Some of the critical thinking and analysis that is needed to design and implement knowledge transfer activities relates to an assessment of the longer-term needs of the organization. In effect, the human and competency resources that should be retained and/or recruited to sustain a level of capacity to meet the organization's mandate need to be identified.

When a corporate KM and KT initiative is being led, it is also essential to ensure that there is a widespread acceptance and understanding of the nature of the issues to be addressed and shared vision on the strategies to be employed. Evaluation and feedback mechanisms are essential as well (*see Phase III: Monitoring and Evaluation – Examining our Return on Investment for more details*). It is also true that no organization can benefit from knowledge transfer if it does not have a robust system of human resource planning fully integrated with its business planning. In other words, knowledge transfer is an integral part of good business practices and not an isolated activity.

Strategies and actions to ensure knowledge transfer and retention efforts need to be a more integral aspect of workforce planning and management activities include:

- Engaging strong commitment to oversee knowledge transfer and retention activities and in developing incentive structures that promote knowledge sharing within and across work teams.
- Opening up hierarchical frameworks and bureaucratic divisions and boundaries to promote horizontal knowledge and information sharing.
- Introducing programs where older workers are expected to regularly work with younger employers in a mentoring role or job shadowing capacity to facilitate the transfer of important tacit knowledge.
- Valuing and rewarding knowledge transfer in planned work outcomes and performance appraisals.
- Using job redesign to create "special skill and knowledge transfer" roles that call on particularly skilled employees to undertake special organizational knowledge, history and skill development projects or training, mentoring or coaching based activities.

[8] O'Dell, C.S, Essaides, N. & C. Jackson Grayson, Jr. (1998) If Only We Knew What We Know : The Transfer of Internal Knowledge and Best Practice; Wyoming Government .Knowledge Transfer Concepts - Department of Administration & Information - Human Resources; Rothwell, W.J. (2004). Capturing the Lessons of Experience: Knowledge Transfer: 12 Strategies for Succession Management. IPMA-HR NEWS; Z:\J Drive\Projects\Electricity Sector Council\Lit Review\Docs from Deane\Best Practices\General Practices for Knowledge Transfer\Strategies tools and tips\Knowledge Cafe - Wikipedia.mht; Kiyonaga, N.B. & Berg. D. (2004) Passing the Torch: Knowledge Management and Transfer Techniques. NYS Department of Civil Service; Knowledge Transfer Concepts (2008) Division of Personnel State of Alaska; Greenes, K. & Piktialis, D. (2008a) Bridging the Gaps: How to Transfer Knowledge in Today's Multigenerational Workplace

- Creating specific opportunities for younger workers to enter into coaching, shadowing or on the job mentoring programs with experienced older employees and/or take on projects that are designed to stretch capabilities and transfer critical organizational knowledge.
- Using team based approaches to managing long term projects and good record keeping practices to ensure effective transfer of knowledge between existing and exiting employees.

STEP 1: PLANNING THE KM/KT STRATEGY

A knowledge management strategy is simply a plan that describes how an organisation will manage its knowledge better for the benefit of that organisation and its stakeholders. A good knowledge management strategy is closely aligned with the organisation's overall strategy and objectives. Revisit the benefits identified within the Value Proposition (Phase 1) business case to prioritize the benefits within a strategic approach to addressing KM/KT within the organization.

What are the benefits?
A good, clear knowledge management strategy can help to:

- Increase awareness and understanding of knowledge management in your organization
- Articulate the business case and identify potential benefits
- Gain senior management commitment
- Attract resources for implementation
- Communicate good knowledge management practice
- Give you a clear, communicable plan about where you are now, where you want to go, and how to plan to get there; and
- Give you a basis against which to measure your progress.

The strategy proposal
As a general guideline, a strategy of any kind tends to include answers to three key questions: where are we now, where do we want to be, and how do we get there? A relatively brief and informal knowledge management strategy might be structured around these three questions and include things like:

1. **Where are we now?** - An assessment of the current situation. How does current knowledge management practice (or lack of it) affect the organisation's ability to meet its goals? How does it affect the effectiveness of individuals and teams? To what extent do the organisation's culture, processes and systems currently act as enablers of, or barriers to, good knowledge management practice?

2. **Where do we want to be?** – An outline of what knowledge management will do for the organisation. How will it help the organisation and the people in it to meet their objectives? What might 'good knowledge management practice' look like for this organisation specifically? How will you know when you are there i.e. how will you measure the progress and value of your efforts?

3. **How do we get there?** – Describing the specific actions that will be taken to get to where you want to be. An action plan covering the three key elements of people, processes and technology: what specific knowledge management tools and processes will you use; how will you motivate people and realign your organisational culture to a 'knowledge friendly' one; and how will you develop the supporting technological infrastructure? Also needs to include details of resources required, deliverables, timescales and responsibilities.

The most important factor in guiding a knowledge management strategy is the organisation's overall strategy and goals. Given that the whole purpose of knowledge management is to help the organisation to achieve its goals, the knowledge management strategy should describe precisely that. In order to do that, you need to understand what your organisational goals are, and how you are currently performing against them.

Talk to key people throughout your organisation about strategy and goals. Look at what various departments or functions are doing. Discuss plans for the future, and look at factors that influence reaching goals. Get a feel for how sub-optimal knowledge management might be currently limiting the organisation in achieving its goals, and how better knowledge management might help it to achieve them.

Look for gaps that could prevent the organisation from achieving its goals. As you talk to people, be on the lookout for the issues that are really causing those problems – their 'pains'. As well as problems, look also for opportunities – not only the chance to fix things, but the chance to do something new or better. Needs, problems, pains and opportunities give you an opening to use knowledge to make a difference.

As well as being be an integral part of the wider organisational strategy, a knowledge management strategy should also be coherent with human resources and information technology strategies. By aligning the knowledge management strategy to these other strategies, commonalities and relationships among the strategies become clear, and further support the implementation of the KM/KT strategy.

Conduct a knowledge audit

A knowledge audit is an investigation into an organisation's knowledge management 'health'. It is imperative that some form of internal assessment be conducted to understand gaps and/or possible practices that may be leveraged across the organization. A typical audit will look at:

- What are the organisation's knowledge needs?
- What knowledge assets or resources does it have and where are they?
- What gaps exist in its knowledge?
- How does knowledge flow around the organisation?
- What blockages are there to that flow?
- To what extent do its people, processes and technology currently support or hamper the effective knowledge management?

The knowledge audit can reveal the organisation's knowledge management needs, strengths, weaknesses, opportunities, threats and risks. It provides an evidence-based assessment of where the organisation needs to focus its knowledge management efforts.

Think about people, processes and technology

When planning your approach to knowledge management, be sure to address each of the three key aspects of people, processes and technology. It is often said that any knowledge management strategy that does not incorporate all three is destined to fail.

Think about capturing versus connecting

A key decision in developing your strategy and in selecting knowledge management tools and techniques involves looking at the relative focus on explicit and tacit knowledge – in other words, do you want to focus on connecting people with information, or on connecting people with people? Of course this is not an 'either/or' decision and most knowledge management strategies tend to involve a combination of the two; the optimal balance between them will depend on your organisational context.

Balance a long-term vision with quick wins

A good strategy will reflect a balance between 'quick-wins' and building a sustainable knowledge management capability into the long-term. The advantage of quick wins is that they allow people to see immediate benefits, and therefore they are more likely to give their support.

As well as seeking a number of quick wins, try not to be over-ambitious in the short to medium- term. Avoid long lists of things to do. You cannot change an organisation culture and ingrained work habits overnight. Pick a few core activities where you can make a difference, and prioritise and focus on those. At the same time, do keep your long-term vision in view.

- Revisit foundations developed in PHASE I (*using PHASE 1 findings*): ROI, SWOT, Knowledge Mapping
- Benefits and Strategy Proposal *(included within Step 1)*

STEP 2: DEFINING THE KM/KT STRATEGY

Knowledge management can be as simplistic or as complicated as its definition and purpose. It is important that defining the strategy's purpose, objectives and both short and long-term goals are made clear and realizable for the organization.

KM/KT can be approached in several modes and the specific mode has specific benefits and disadvantages. The first question that needs to be defined is: What level of strategy do you want to develop?

⇒ Is it a Corporate-level strategy involving the entire organization?
⇒ Is it a Departmental-level strategy focusing on a high-prioritized business area? Or
⇒ Is it a specific Functional-level group that is in dire need of a strategy?

Understanding the scope of the strategy will help define the approach, and more importantly, the resources you will need to implement the strategy for success.

Corporate-Wide Strategy:

An enterprise wide assessment on KM/KT will be heavily involving and will require considerable funding and resources. These will likely be more long-term focused implementations comprising of several smaller launches of targeted, high prioritized areas deemed critical to organizational competitiveness or sustainment.

Departmental/Regional Strategy:

Based on organizational capacity, this strategy is the likely choice for piloting a KM/KT strategy and to assess effectiveness in the rollout and implementation prior to moving ahead into a corporate-wide strategy. This strategy typically focuses on a cross-functional work environment comprising of several positions across a broad region. Both short-term and long-term strategies can be derived within this model.

Functional Strategy:

This form of strategy is traditionally targeted towards a specific type or group of position such as Engineers or Technicians. This strategy is contained to collecting information from a specific field or expertise, it is more short-term focused, and can be reasonably attainable with minimal resources.

It is not always clear or easy to define the KM/KT strategy, and many human resource professionals encounter similar obstacles when attempting to do so. There are several questions/statements below that may ease this process, and they are based on common issues or problems organizations may encounter:

1. Our staff members can't find information and constantly waste time looking for information.
2. We have staff retiring with required expertise in their head with no back up.

3. Our staff needs to share information and knowledge more effectively.
4. We think there are ways to do things more productively/innovatively.
5. There is a lack of leadership and resources for KM/KT.
6. We do not have the knowledge or tools to perform the work in our area.

One or more of these statements will likely be linked to your KM/KT strategy, and will help you in choosing the correct path/mode of the strategy which may suit your organizations best interests. By answering or defining your strategy around key KM/KT issues, the strategy will be strengthened and supported by the people within your organization that it aims to help.

- ❖ Defining the Level of KM/KT Strategy (*included within Step 2)*

STEP 3: DEVELOPING THE KM/KT STRATEGY

The KM/KT strategy **Action Plan** is a vital mapping of the strategy in developing an understanding and answering the question: **How do we get there?**

⇒ Describe the specific actions that will be taken to get to where you want to be. An action plan should ideally cover the three elements of:
- ➢ **People**: how will you motivate people and realign your organizational culture to a knowledge-friendly one?
- ➢ **Process**: what specific KM/KT tools and processes will you use?
- ➢ **Technology**: how will you develop the supporting technological infrastructure?

Highlighted below is a brief example of a KM/KT Action Plan that illustrates how the flow of the action plan should be developed and move forward. It should include:

⇒ Activity – what is the main objective?
⇒ Responsibility – who needs to review, approve and move this process forward?
⇒ Timeline – sets a due date for when this activity needs to be completed.
⇒ Resources Needed – assigns a team that will aid the activity and persons responsible.
⇒ Indicators of Success – key component in measuring activity success/failure.
⇒ Date Completed – assigns the real date of completion and identifies any delays and supporting rationale.

Activity	Responsibility	Timeline	Resources Needed	Indicators of Success	Date Completed
Prioritizing the business objectives for 2011-2012 with KM/KT incorporated.	Senior Executives	April 2010	HR Team (with KM/KT champion)	➢ KM/KT proposal submission ➢ Funding for implementation approved. ➢ Resources (people and technology) allocated for the duration of the project.	April 2010
Complete development of a 'core team' representing divisions across the organization to identify the data/informational needs of the whole organization.	Senior Executives	June 2010	Personnel to serve as core team members (Subject Matter Experts) from key groups	Core team created. ➢ Names of personnel ➢ Functional group they represent ➢ Specific roles and responsibilities assigned; and ➢ Date of core team completion.	June 2010

The tables below are designed to aid in the identification of possible KM/KT activities, approaches and tools to support your organization's KM/KT strategy. They are arranged by the following themes:

⇒ KM Methods

⇒ KT Methods
- HR Related Methods
- Team-based Methods
- Project/Process-oriented Methods
- Best Practices
- Mapping
- Knowledge Sharing & Learning Methods
- Existing & Emerging Technologies

Additionally, guidelines for implementing KM/KT approaches within organizations are also available at the end of this section. The Toolkit was not able to find examples of all KM/KT tools/resources/activities within the tables listed below. In these cases, N/A (not available) in the page reference indicates that additional information and resources were not evaluated.

KNOWLEDGE MANAGEMENT AND KNOWLEDGE TRANSFER METHODS

Description	Page Reference for More Details
Digital Knowledge Repository: An on-line 'container' of content used to convey what is known about a specific topic or practice. The most effective of these use various forms of media (audio, video and simulations) in addition to documents to facilitate understanding and uptake of the content.	**N/A**
Document Management Systems: Management of the intellectual property that is locked up in the documents of an organization. Management of the entire life cycle of a document from creation through multiple revisions and finally into storage and records management	**N/A**
Document Repositories: A formal document repository is a collection of textual showrooms that can be viewed, retrieved and interpreted both by humans and by automatic systems. A document repository adds navigation and categorization to the information stored.	**79**
Expert System: an expert system, usually automated, is organized around problems and how to troubleshoot them. Common or difficult problems are logged into the system. Advice about troubleshooting and solving those problems is provided by the system.	**79**
Interactive Point of View: Video capture and production services focused on knowledge capture.	**N/A**
Mind Map: Mind Maps are a graphic technique to enable participants to implement clearer thinking in their approach to many different tasks. It is useful both for individuals and for groups, and provides as nonlinear method of organizing information. Mind mapping software from Mind Jet "helps align people to work smarter, think creatively and save time by visually capturing, organizing and communicating ideas and information effectively."	**N/A**
One Note: From Microsoft this program is a great notes organizer that offers the ability to record from your laptop (both audio plus video via webcam) and integrate these into your notes. Good search ability that's useful during conversation with the SME - you can go back to where similar topic was discussed both in your notes and on the audio and link new information on the spot.	**N/A**
Shared Network Drives: Shared Network Drives work in most organizations to store and categories information. If used correctly, and under systematized good practices, they can enable better retrieval of knowledge and improved information sharing across an organization.	**N/A**

It is important to remember that basic information technology is necessary but not sufficient in order to ensure KM/KT works. As such, an infrastructure of organizations and people must also be mobilized to make KT happen; and KM/KT must be institutionalized into the organization through the creation of new support systems, other than information technology with new job responsibilities, new teams and new formalized networking. Samples of these "new support systems" are outlined as part of the extensive list of KT methods noted on the following pages.

HR RELATED METHODS (RECRUITMENT, DEVELOPMENT AND SUCCESSION PLANNING)

Summary Description	Page Reference
Apprenticeships: a system of training individuals that are new to a complex skill or craft; most of the training is done on the job while working for an employer who helps an apprentices learn their trade	**N/A**
Collegial Coaching (Peer Coaching): A professional development method aiming at increasing collegiality and improving performance. There are five main functions: *Companionship*: Talk about success and failure with a new approach. *Feedback*: Give each other objective, non-evaluative feedback. *Analysis*: Help each other extend the control over a new approach. *Adaptation*: Work together to fit an approach to the special needs of an assignment. *Support*: Provide needed support	**138**
Exit Interviews: Exit interviews have evolved from feedback interviews with employees leaving the organization to a knowledge management tool, as a way of capturing knowledge from leavers. Rather than simply capturing human resources information, the interview also aims to capture knowledge about what it takes to do the job. Done correctly, exit interviews can be a win-win situation for both the organization and the leaver. The organization gets to retain a portion of the leaver's knowledge and make it available to others, while the leavers get to articulate their unique contributions to the organization and to 'leave their mark'. Exit interviews are relatively quick and inexpensive. In a knowledge-focused exit interview, a face-to-face interview is needed.	**100**
Experience Capitalization: refers to the transformation of (individual and institutional) knowledge into capital by those directly involved in order to change a collective, institutional practice. It aims at changing one's own practices or structures	**103**
Internships: formal arrangements where an experienced person passes along knowledge and skill to a novice who, after a designated period of time, reaches the journey level. This includes summer internships used by many State agencies.	**N/A**
Job Rotation: a form of training that involves moving an employee from one workstation to another. In addition to achieving the training objectives, this procedure is also designed to reduce boredom.	**113**
Job Shadowing: a less-experienced performer is paired up with a veteran performer in their workplace to transfer knowledge/ to observe and learn about a particular occupation. The veteran is asked to share knowledge (and perhaps hands-on practice) in dealing with everyday problems in addition to the most difficult situations he or she has faced on the job.	**115**
Knowledge Distillation : intended to help extract meaningful knowledge from recorded conversations of individuals, or learning events involving groups of people	**109**
Knowledge Elicitation Interviews: Gather knowledge from individuals in a manner that others will find useful.	**88**
Knowledge Self-Capture: intended to help individuals capture and document their personal knowledge, lessons learned and insights	**85**
Leadership Transition Workshop: simple and highly effective workshop to help a team accelerate the process of transition and knowledge transfer following a change in leadership.	**147**
Mentoring: an experienced, skilled person (mentor) is paired with a lesser skilled or experienced person (protégé), with the goal of developing or strengthening competencies of the protégé. Rarely is the mentor a supervisor, since effective mentors should usually have no interest in the development of another person. Successful people have usually had one or more mentors in their	**149**

Summary Description	Page Reference
career and mentors offer advice on what to do, how do to it and why it is worth doing in a situation. Such programs can, of course, facilitate knowledge transfer.	
Retirees on Retainer: One way to capture the lessons of experience is for the organization's decision makers to do better than they have historically done in tapping their retiree base. Individuals with valuable knowledge can be placed on retainer to provide one-on-one phone guidance—or even online or video-conference advice—to less-experienced workers as they face problems. Retirees on retainer are typically having experts available to train or share specialized knowledge. Managing the retiree base of the organization may prove to be an important trend of the future.	**159**
Risk Assessment: Completing a risk assessment at the business unit operating level, focusing on who is leaving, what necessary knowledge must be captured what is not easily replicable, nor inherent in the systems themselves to help determine the gap that will exist, over what period of time, to determine appropriate risk mitigation strategies.	**45**
Skills Inventory: used to generate information about the knowledge and skills individuals possess that come from previous employment or activities outside the work environment. Maybe gathered through questionnaires or interviews.	**N/A**
Structured On-the-Job Training: instruction takes place on the actual job site, usually involving learning skills or procedures in a hands-on manner following a defined structured learning process.	**159**
Succession Planning: used to identify those positions at risk of turnover (either through internal transfers, exits or retirements) supported by effective transition planning to ensure that the knowledge and expertise held by the individual who are expected to leave is effectively captured and/transferred. Key initiatives such as mentoring, retirees on retainer, job shadowing, job rotation, etc. are often employed to support knowledge transfer in these instances.	**163**
Training: encompasses a large variety of activities designed to facilitate learning (of knowledge, skills and abilities or competencies) by those being trained. Methodologies can include: classroom instruction, simulations, role-plays, computer or web-based instruction, small and large group exercises and more. It can be instructor-led or self-directed in nature.	**N/A**

TEAM-BASED METHODS

When working together with others, the whole of our efforts often proves to be less than the sum of the parts. Why? Frequently, there is not enough attention paid to facilitating effective collaborative practices. The tools in this section can be applied to reflect on the workings of teams, and to help strengthen relationships and develop shared thinking.

Summary Description	Page Reference
After Action Review: a discussion of a project or an activity. It enables the individuals involved to learn for themselves what happens, why it happened, what went well, what needs improvement and what lessons can be learned from the experience. The spirit of an AAR is one of openness and learning - it is not about problem fixing or allocating blame. Lessons learned may be tacitly shared on the spot by the individuals involved or explicitly documented and shared with a wider audience.	**159**
Peer Assist/Peer Review: most economical way of designing a project and avoiding errors and mistakes based on others' experience and knowledge. A work team starting up a new project or task – the hosts – call on another team having acquired experience in the respective field of activity. Peer assist allows the requesting team to gain input and insights from people outside the team, and thus, reusing existing knowledge and experience rather than having to reinvent the wheel. It is worth using a peer assist when a team is facing a challenge, where the knowledge and experience of others will really help, and when the potential benefits outweigh the costs of travel.	**171**
Retrospect: a simple tool for learning after an event, activity or major milestone in a project or program. It is a team meeting called after completion of a piece of work.	**205**

PROJECT/PROCESS ORIENTED METHODS

These methods provide different frameworks which can be used to plan and monitor knowledge and learning initiatives

Summary Description	Page Reference
Job Aids: These are tools that help people perform jobs in real time. They include things such as checklists, flow diagrams, reference tables, decision tree diagrams, etc. that provide concrete information to the user and serve as a quick reference guide to performing a task. Knowledge can be stored in aids and accessed through low-tech methods when the need arises. Job aids are not the actual tools used to perform tasks, such as computers, measuring tools or telephones.	**N/A**
Process Documentation: Popular as a result of ISO and the quality movement. Process documentation involves flowcharting how work is performed. It may include special variations in what performers should do or how they should do it based on special circumstances such as deviation from norms. Clear process documentation, which may include flowcharts or procedure manuals, can be helpful in storing and transferring knowledge from a more experienced to a less experienced person.	**N/A**

MAPPING

The very process of mapping and analysis increases the speed at which knowledge transfer can occur. The entire process demonstrates the principle of collaboration by blending the elements of two successful strategic tools--continuous improvement and knowledge management. With the right tools, distilling a best- demonstrated practice down to its essential ingredients of success can be accomplished in days, as opposed to weeks or months.

Summary Description	Page Reference
Activity-based Knowledge Mapping: All activities require different inputs and generate outputs; increasingly, these inputs and outputs are information based. This tool, which has been drawn from the field of 'business process re-engineering', enables the mapping of inputs and outputs for key activities, with a view to improving their efficiency. This provides managers with an in-depth understanding of the different processes they are overseeing.	**39**
Information and Knowledge Audit Together: Gives you the ability to assign a level of strategic significance or importance to the knowledge assets. Provides an indication of the criticality of the information.	**39**
Information Audit: Identifies the information and resources and services people need to do their jobs. Shows how resources and services are actually used.	**39**
Knowledge Audits: Knowledge audits help an organization identify its knowledge assets, including what knowledge is needed and available. They provide information on how knowledge assets are produced and shared and where there is a need for internal transfer of knowledge. Why the need for knowledge audits? • To identify the people issues that impact on knowledge creation, transfer and sharing • To identify which knowledge can be captured, where it is needed and can be re-used • To determine the most effective and efficient methods of storing knowledge • To facilitate access to and transfer of knowledge	**39**
Knowledge Maps: These catalogue information/knowledge available in an organization, where it is located, what form it is in, ownership, value and use of knowledge. They point to information but do not contain it. An example is an Experts or Resource Directory that lists people with expert knowledge who can be contacted by others in need of that knowledge. Provides an opportunity to make better use of existing knowledge in the organization; and to identify barriers to knowledge flow.	**39**
SWOT analysis: SWOT analysis is a strategic planning tool used to evaluate the Strengths, Weaknesses, Opportunities, and Threats of a project. It means monitoring the internal and external factors of the project with the aim to identify the key elements that are important for achieving the objectives. It also enables participants to take a breath, make a judgment and share their visions on the four pillars mentioned above in order to enrich the collective perception.	**47**

KNOWLEDGE SHARING AND LEARNING AMONG PROFESSIONALS, PEERS, EMPLOYEES

So much of effective knowledge and learning is about two-way communication which takes place in a simple and effective manner, and applying simple techniques to try and build on past experiences to improve activities in the future.

Summary Description	Page Reference
Action Learning Sets: structured method enabling small groups to address complicated issues by meeting regularly and working collectively. This tool is geared especially towards learning and personal development at professional and managerial levels.	**N/A**
Activity networking: This tool gives all group members the opportunity to view and discuss a process based on actual experiences, which in turn allows other group members to see all the views of each individual teammate. An activity network begins by noting all the tasks in written form. Each task is then prioritized and the team must decide if more than one of the tasks can be done at the same time. A path of importance will generate from this tool.	**N/A**
Brain storming: makes it possible to quickly and, with a minimum effort, extend one's horizon to available experiences, ideas and opinions. For application in groups and in workshops, this method consists of collecting uncommented ideas or suggestions. Thus it is especially used at the beginning of a meeting or workshop in order to gain an overview of the available experiences or ideas to be built upon. Brainstorming sessions are used for solving problems, making product innovations, improving communication patterns, optimizing customer services, scheduling projects, budgeting, etc.	**95**
Communities of Practice: a group that comes together to share information about a common problem, issue or topic over a period of time, though not part of a formally constituted work team. Such communities may meet in person or online; critical incidents or best practices are often discussed at these meetings. It is a way by which to store and transmit knowledge from one person (or a group) to another person or group. Communities of Practice generally cut across organizational boundaries and enable individuals to acquire new knowledge faster.	**176**
Expert Interviews: Sessions where one or more people who are considered experts in a particular subject, program, policy or process, etc. meet with others to share knowledge with in person or these sessions could be videotaped for future reference. Expert interviews can be used in many ways, including capturing knowledge of those scheduled to leave an organization, conducting lessons learned debriefings and identifying job competencies	**N/A**
Information Exchanges: Have you ever attended a career fair? If you have, you have seen one form of information exchange. The same basic approach can be used for information exchanges. When this strategy is used, veteran performers sit at booths and dispense wisdom to less-experienced performers who visit them.	**N/A**
Knowledge café: type of business meeting or organizational workshop which aims to provide an open and creative conversation on a topic of mutual interest to surface their collective knowledge, share ideas and insights, and gain a deeper understanding of the subject and the issues involved.	**116**
Knowledge Fairs: These events showcase information about an organization or a topic. They can be used internally, to provide a forum for sharing information, or externally, to educate customers	**121**

Summary Description	Page Reference
or other stakeholders about important information. Attendees can focus specifically on what they are interested in learning. They can interact directly with the presenters, getting immediate answers to their specific questions. Knowledge fairs also provide opportunities to draw attention to best practices and recognize employee and team achievements.	
Knowledge Network: A process of human and computer networking where people share information, knowledge and experiences to develop new knowledge for handling new situations.	**123**
Learning Histories: A detailed account, intended to transfer knowledge and insights in a manner that enables others to learn from the experience or set of experiences; often written in narrative form using reflective interviews and story-telling, of the facts and observations affecting the development or result of a person or group under study.	**N/A**
Staff Profile Pages: Using this tool, an electronic directory storing information about staff in a given organization, can facilitate connections among people through systematizing organizational knowledge and learning initiatives. (also see Yellow Pages)	**N/A**
Storyboards: A storyboard is literally a group of pictures that tell a story. Think of a series of pictures on a wall or a poster that is intended to show how someone should perform in a specific situation and you get the idea. For instance, if you were trying to show someone how to perform the Heimlich manoeuvre, you could storyboard it. The same technique can be applied to other procedures to provide a graphic representation of what to do and how to do it. Thus, storyboards can be used in storing and transferring knowledge	**N/A**
Storytelling: Most wisdom in organizations is passed on through storytelling. A story is a description of what happened in a situation to illustrate a point and effectively transfer knowledge. Most people have heard many stories about their organizations. Two types: An organizational story is detailed narrative of management actions, employee interaction or other intra-organizational events that are communicated formally or informally within the organization. Future scenarios describing how things will be different once a particular initiative, change is fully implemented.	**142**
Yellow Pages: An organizational "yellow pages" is a tool to help people to find others in their organization that have the knowledge and expertise they need for a particular task or project. It is like a staff directory including details about knowledge, skills, experience and interests. The "yellow pages" is electronic rather than paper-based, so that users can efficiently search information. "Yellow pages" are particularly beneficial in organizations that are over a certain size or that are spread around in different locations, and so people don't have the opportunity to get to know each other well. "Yellow pages" are helping organizations to 'know what they know'. They allow to find people and to get access to their tacit knowledge. A "yellow pages" is not necessarily aimed at those embarking on a major project or piece of work; often the greatest value comes from a multitude of simple ten-minute conversations in which people ask each other for a quick word of advice or a steer in the right direction.	**72**

Social Technologies cover a broad array of tools, all using technology to build collaboration and sharing of tacit knowledge. There are many different fora for this, chiefly internet-based tools but also including telecommunications, radio and face-to-face socializing. The term social technology is often used to describe new tools based on the internet; however, we should not forget other equally important tools which do not require a web-platform: mobile telephone communications, radio services and other face-to-face socialising methods.

Summary Description	Page Reference
Blog: Can broadcast boomer knowledge across an entire organization, or across the world, for that matter. In a blog the author enters his or her thoughts onto a Web page, and the postings are displayed in reverse chronological order on a Web site available to anyone who has access. Readers of a blog have a chance to post comments and thoughts but cannot change the original author's contribution.	**125**
CMAP: Knowledge Modeling Kit developed by the Institute for Human and Machine Cognition (IHMC). The IHMC CMAP Tools software empowers users to construct, navigate, share, and criticize knowledge models represented as Concept Maps. This is a fabulous tool that I use on a daily basis. I use it for creating visual maps from elicited information and also as hyper linked "front ends".	**N/A**
Digital workspaces: use email and the web in order to create a virtual common area for distributed project teams to work together. The software tools enable the development of research project plans, project management, and the sharing of documents across organizational boundaries. These platforms often offer several services including: to do lists, personal information managers, collaborative editors, business-oriented chat-interface and customer resource management applications. They generally allow integration with a variety of other applications, notably the Microsoft Office suite.	**N/A**
E-learning : a web-based (as opposed to computer-based) application for long distance and on demand learning and includes the use of other communication technologies such as email, internet forums, collaborative software, and classroom management software; as well as hardware devises such as mobiles and PDAs (in this case it is sometimes called M-learning – for mobile learning). E-learning for international development allows individuals to gain access to technical and professional education. It reduces the traditional costs (printed materials) and outreach limitations of distance learning. In most cases, e-learning sessions are designed to fit professionals and are therefore accessible on an on-demand basis – allowing users to engage in their own time.	**N/A**
Electronic Performance Support Systems: Perhaps most sophisticated of all methods for storing and transferring knowledge is a so called electronic performance support system (EPSS). An EPSS combines artificial intelligence, an expert system, real-time e-learning methods, and a computer-based referencing system. As a user encounters a problem, he or she can access all organizational policies and procedures through the referencing system, gain advice from past experience from the expert system, and even learn in real time using the training component	**N/A**
Expert Systems: An expert system, usually automated, is organized around problems and how to troubleshoot them. A simple example is the "context-sensitive help" on most word processing programs. (If you should ever call in to the help desk of a major computer company for help, the person on the other end of the phone is probably equipped with an expert system.) Common or difficult problems are logged into the system. Advice about troubleshooting and solving those problems is also provided in the system. This approach, while requiring more technological sophistication, places information at the fingertips of even the least experienced performer, giving him other the ability to perform like a pro.	**81**

Summary Description	Page Reference
Instant Messaging: Instant messaging (IM) is a powerful method for fostering informal learning. This program allows two or more computers on a network to communicate with each other in real time. It has several advantages over e-mail: • Discussions occur in real time. • It allows you to see if the person is online and • Open to receiving messages. • It provides a quicker response than e-mail.	**128**
Knowledge Filter's Knowledge Center Software: A self-organizing system for tapping collective knowledge to build highly reliable information resources. http://www.knowledgecenter.com/	**N/A**
Learning Games: A type of structured learning activity used to make learning fun. They can be used to : • help prepare people for learning • review material presented • evaluate how much learning has occurred • practice what has been presented Why: • Increase participation • Engage people's creativity • Address different learning modalities • De-stress learning • Add variety to training programs to keep people engaged Types: • Scavenger Hunts • TV Quiz Shows, e.g. Jeopardy, Family Feud…. • Board Games, e.g. Trivial Pursuit • "Name That" games "20" Questions	**N/A**
Open Space: a meeting method (technology based) that helps individuals and groups become more effective in work environments that are rapidly and constantly changing by developing their skills as collaborative problem solvers and lifelong learners.	**130**
PodCasting: A podcast is a Web-based audio file distributed over the Web and downloaded for play onto a handheld device, the most popular of which is Apple's iPod family, whose widespread adoption has led to an entire ecosystem of tools, accessories, and content providers	**134**
Really Simple Syndication (RSS): Web technology that allows a person to subscribe to a feed from a Web site, a blog, a wiki, or other source of digital content and receive new information or content only when the original information is updated through a portal called an RSS aggregator. An RSS aggregator provides a consolidated view of the content as headlines, organized by topic and hyperlinked to the source material, in a single browser display or desktop application. One popular example is www.myyahoo.com, where you can establish your own page complete with links to any RSS feed you desire	**N/A**
Serious Games: Computer games used to train professionals in a variety of workplace capabilities including decision-making, project management, change management, and information analysis	**N/A**

Summary Description	Page Reference
Social network services: online spaces that allow different groups of people to come together under shared interests or causes. Their uses range from online dating and political activism to debating research interests. Most social network services include some of the other social technologies to enhance connectivity and promote peer-to-peer communications. Their usefulness to research and policy influence relate to their ability to develop and sustain social and professional networks, share knowledge between members and provide access or entry points to key individuals and spaces. These spaces provide a range of social networking tools that allow users to expand their social networks to those of their friends and colleagues; as well as to search through the network's space for individuals with similar interests. Spaces like the igloo and dgroups have been specifically created to enhance the social networks of professionals in the international development and governance sector. The network provides access to personal blogs of the members, specialized libraries and a clearing house for relevant links and external services. A more popular version of this type of social technology is LinkedIn, which is targeted at business relationships.	**122**
Social Media/On-line Dialogue: Hold promise in knowledge transfer because of the abilities to create simulated environments and/or socially connect people with immediacy and on a global basis. Collaboration tools have become much easier in a Web 2.0 world, particularly wiki's that people are building which allows them to post information and collaborate(e.g., Google Wave). As well Web 2.0 tools can be used in small areas without involving a big initiative, for example Google Groups. The use of Twitter and other micro-blogging tools internally to convey knowledge quickly and when needed, to document conversations, and to find people who know about the subject an individual is interested in.	**N/A**
Wikis: In contrast to the single contributions of a blog, collective knowledge can be gathered and distributed via a wiki. If a blog is a monologue, then the wiki is a discussion. Wiki technology, which takes its name from the Hawaiian term for quick, fast, or to hasten, allows the reader of a Web site to instantly add or edit content directly on the Web page, with no need to create code in HTML or to use any type of external editor—the ability to operate a basic word processor is enough. And the process is fast.	**136**

Knowledge Management

- KM Spectrum – Application & Enabling\ Technologies (key questions to consider)
- Document Repositories
- Knowledge Capture
- Knowledge Self-Capture
- Knowledge Elicitation Interviews
- Knowledge Maps
- Brainstorming
- Knowledge Capitalization
- Expert Systems
  - Lessons Learned
  - Critical Incident Reviews
- Building the Action Plan
- Develop a Succession Plan
- Identify Subject Matter Experts (SME's)

- **Knowledge Transfer**
- Job Shadowing
- Job Rotation
- Mentoring
- Leadership Transition Workshops
- Retirees on Retainer
- On-the-job Training
- Knowledge Distillation
- Communities of Practice
- Collegial Coaching
- Knowledge Cafe
- Knowledge Fairs
- Knowledge Networks
- Enterprise Collaboration Solution
- Story Telling
- Instant Messaging
- Social Networks

- Peer Assist / Peer Review

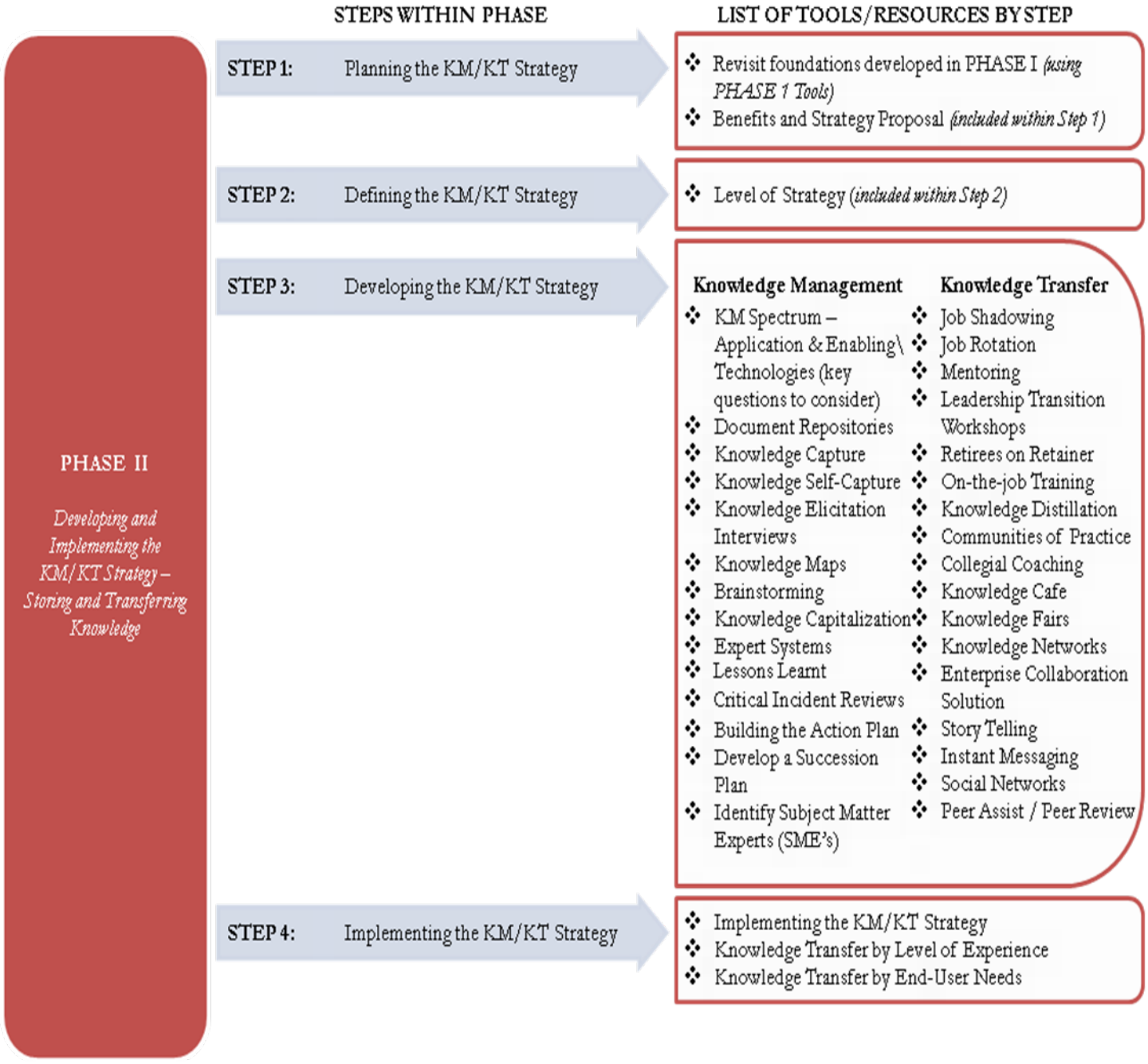
STEP 4: IMPLEMENTING THE KM/KT STRATEGY

In the final stage of KM/KT Strategy Development and Implementation, one final look prior to rollout will provide assurance that the correct plan is designed, the right focus on objectives and scope have been defined, and the people, processes, technology and funding are in place (or will be) over the course of implementation. It will be important to review the supports that are required to ensure effective implementation. For example, if the KM/KT project is small it may only require a project manager to oversee and monitor implementation. If the KM/KT project, however, is large or corporate-wide, it may require the support of an implementation oversight committee. The committee would work together to coordinate, support and monitor implementation.

Phase III outlines the importance of ensuring that realistic and measureable performance indicators are defined and established and that all parties responsible are aware and acknowledge use. The indicators selected should reinforce business drivers, goals and objectives whilst ensuring the overall success of the KM/KT strategy.

(PHASE II) SUPPORTING INVENTORY OF TOOLS

The KM/KT Toolkit will be structured according to 3 Phases of tools, tips, questions and approaches. Phase 2 will specifically focus on Knowledge Capture and Transfer– providing organizations with tools to capture, develop, organize, and store their information for future retrieval and transfer.



SUPPORTING TOOL/RESOURCE 01: YELLOW PAGES

An organizational "yellow pages" is a tool to help people to find others in their organization who have the knowledge and expertise they need for a particular task or project. It is like a staff directory, but rather than simply listing people's names, job titles, departments and contact details, it includes details about their knowledge, skills, experience and interests.

The "yellow pages" is electronic rather than paper-based, so that users can search it in a variety of ways, just like they might perform a search on the internet.

"Yellow pages" are often also known as experts' directories, expertise directories, and skills directories or capabilities catalogue.

BENEFITS OF YELLOW PAGES:
A "yellow pages" is particularly beneficial in organizations that are over a certain size or that are spread around in different locations, and so people don't have the opportunity to get to know each other well. Specific benefits include:

- "yellow pages" are technologically quite simple to create
- They can be extremely effective in helping organizations to 'know what they know'
- They allow people to find the tacit knowledge they need, by easily finding the people who have it
- They can underpin all of the organization's various initiatives to connect people with people, and to learn from others
- A "yellow pages" is not necessarily aimed at those embarking on a major project or piece of work; often the greatest value comes from a multitude of simple ten-minute conversations in which people ask each other for a quick word of advice or a steer in the right direction.

By way of an example, can you find an asthma expert who has considerable experience in a specific treatment, has successfully used that treatment with children under five, and is currently in or around the Birmingham area, all in under a minute? A good "yellow pages" could enable you to do that (assuming of course that such a person exists!).

GETTING STARTED:

1. Be clear about your aims: What purpose will the yellow pages serve?
2. Create ownership with the people contributing to, and using, the system.
3. Balance formal with informal information. Personal information and a photograph help in building contacts.
4. Include name, job title, team, job description, current projects, professional qualifications, CV, areas of knowledge and expertise, areas of interest, key contacts (internal and external), membership of knowledge networks or CoPs (Communities of Practice), contact information.
5. Organise entries for ease of loading and retrieval.
6. Keep it up-to-date.
7. Encouraging use – make marketing efforts to create peoples curiosity.

Be clear about your aims First, be clear about your aims. Using a "yellow pages" to find people is a means to an end, not an end in itself. How do you intend for people to use it? For what purposes do you envisage them using the system to find people? How will they approach and use the system? It is vital to be clear on this before you

begin designing any system. Talk to people in your organization to find out about their needs and views. Talk to people in other organizations who have already implemented a "yellow pages" to find out what you can learn from their experiences.

Ownership and onus Opinions vary about whether to make individuals' inclusion a "yellow pages" compulsory or voluntary, and similarly whether to create and manage entries centrally or provide a template for individuals to create and update their own entries. Organizations such as BP-Amoco and Texaco who have implemented successful "yellow pages" strongly favour the voluntary approach in which individuals create their own entries if they so choose. Their experience would seem to show that ownership needs to be with the people contributing to, and using, the system.

This has a number of advantages. First, it creates a sense of personal responsibility for the system which in turn fosters support; second, it allows people to present their entries in a way that reflects how they want to be known rather than how the organization sees them and hence third, it helps to create a 'living' system that reflects real personalities and therefore encourages personal relationships.

Balance formal with informal information While the purpose of a "yellow pages" is to help people find others with relevant knowledge and expertise, the chances of them actually acting on that information and calling that person will be greatly increased if they feel they 'know' them. This sense of 'knowing' or familiarity can be created to some extent by including some personal information and a photograph in people's entries. Allow people to be creative in how they present themselves. For example, at BP people are encouraged up upload photographs of themselves at home or at play – perhaps with their children or enjoying their favourite sport– rather than using a more sterile passport-style photograph.

What to include Common fields found in a ""yellow pages" include:

- Name
- Job title
- Department or team
- A brief job description and/or description of what is currently being worked on and what has been worked on in the past
- Relevant professional qualifications
- An uploaded CV
- Areas of knowledge and expertise (selected from a pre-defined list of subjects/terms; people might also rank their knowledge, for example from 'extensive' to 'working knowledge' to 'basic')
- Main areas of interest
- Key contacts – both internal and external
- Membership of communities of practice or other knowledge networks
- Personal profile
- Photograph
- Contact information

Organising entries for ease of loading and retrieval In order to encourage people to create entries, you will need to make it easy for them. Most organizations use a simple template into which users enter their information. In creating a template, think not only about ease of entry, but also about how users will search the system to retrieve information. You will need a common language or taxonomy to describe information in the essential fields, in particular those relating to knowledge, expertise, areas of work and interests. You might like to create fixed terms and options for these fields that users can select from a menu or a selection of tick-boxes. This could also be

supplemented with a box for users to enter free text, perhaps with some suggested terms alongside it to guide their use of language.
In contrast, personal information can of course be relatively unstructured – leave scope for more creativity and free expression here!

Keeping it current A "yellow pages" must be maintained and kept up-to-date. People are constantly moving locations, changing jobs, and adding to their knowledge and skills. If your "yellow pages" is linked with your human resources system, then job details and contact information can be automatically updated. Alternatively if individuals have sole responsibility for their own entries, then you might build a reminder process into your system, whereby an e-mail is sent automatically to remind users who haven't updated their entries since a certain time period, such as three to six months. Similarly, be sure to build information about the "yellow pages" into processes for new joiners and leavers, so that new joiners know about the system and are encouraged add their entry, and leavers remember to either delete their entry or delegate it to someone else to 'own' (assuming they are happy for people to still contact them after they have left).

Encouraging use You will need to actively market your "yellow pages". Don't assume that if you create it, people will automatically use it. Your marketing efforts will need to encourage both participation and use; the two are inextricably linked as you need a certain amount of submissions for people to see the "yellow pages" as being worth using. Possible ideas might include posters, presence at events such as learning fairs, nominating champions to promote the "yellow pages" in various parts of the organization, or competitions that give prizes to the first departments in which everyone is uploaded, or for those with the best success stories of how using the "yellow pages" has helped them in their job. Be sure to focus on the benefits in your marketing efforts – people will want to know 'what's in it for me?'.

KEY CONSIDERATIONS:

- A "yellow pages" need not just include individuals – for example you might like to include formal communities of practice, project teams, etc.
- Similarly, a "yellow pages" need not just cover internal people; you can also have a similar system, or a section, for suppliers of various types (e.g. IT outsourcing, consultancy services, recruitment agencies, etc), and for other organizations with which you work or collaborate, both within and outside the NHS.
- You can add further value to your "yellow pages" by linking it with other knowledge management tools, such as those available on an intranet. For example you might have collaborative working tools or best practice databases that list relevant contacts – these contact listings can be linked directly into the "yellow pages" – and vice versa.
- Be careful when using the term 'expert' – it can be quite a 'political' one and may create hierarchies; if some people are considered as experts, this might make others feel that their knowledge is less valuable so it may discourage their contribution.
- Be aware of issues relating to data protection – check with your legal department to ensure that your "yellow pages" will comply with relevant requirements, and to create a policy on its correct use.

Source:
NHL http://www.library.nhs.uk/knowledgemanagement/ViewResource.aspx?resID=94140&tabID=290

Websites related to Yellow Pages
Yellow Pages and Blue Pages A short description of the yellow page / blue page methodology
http://www.artm-friends.at/am/km/tools/gelbe-blaue-seiten-e.html

Clemmons Rumizen Melissie. (2002) The complete idiot's guide to knowledge management. Madison, WI: CWL Publishing Enterprises.

Collison, Chris and Parcell Geoff. (2001) Learning to fly: practical lessons from one of the world's leading knowledge companies. Oxford: Capstone.

Cromack, Keith. Needles in a haystack: using a capabilities catalogue to locate knowledge. Knowledge Management, 2001, August, Vol 5 No 1

SUPPORTING TOOL/RESOURCE 02: KNOWLEDGE CAPTURE

PURPOSE

Codify and document specific and analytic knowledge in a manner that others can re-use and adapt it for their specific use.

DESCRIPTION

Knowledge capture is a very common method of transferring knowledge. While it is often not the most effective method, it is the most visible and easy to understand. After all, libraries (real or virtual) are full of books that have contributed greatly to our base of knowledge.

Knowledge capture is process that involves identification, elicitation, distillation, packaging and publishing. (Note: The elicitation and distillation steps are fairly complex and have their own guides to help in their application.) It is laborious and time consuming. But, when done right, it can enable knowledge to move from one to many regardless of time and space.

GENERATIONAL ASPECTS OF KNOWLEDGE CAPTURE

The Research Working Group's latest understanding of **generational learning styles** and our discussion sessions have been incorporated into the following outline of steps and tasks. Some highlights that stood out for our members include:

- If captured knowledge and relevant content is not found on the first page of results from a search on Google, a Gen Yer will either stop looking or perform another search. There's a good chance they will not go to the next pages of search results to find what they are looking for.
- Stories take too long and are not something Gen Yer's seem to need to make sense of knowledge that is being offered. "Get to the point and tell me what I need to know, and then ask me if I need more context," was a common request from that generation.
- Knowledge in the form of 'bit-sized chunks' or 'nuggets' have the best chance of being read or ingested by people in all generations.

KNOWLEDGE CAPTURE PROCESS – 10 STEPS

The following steps are provided to guide knowledge harvesters through the main activities necessary to harvest and capture knowledge for re-use and adaptation by others:

1. Identify a customer for the knowledge. Have a clear customer – current or future – in mind when considering the need to capture knowledge. Who will use the knowledge, what needs will it address, and how will people access it?

2. Identify a community of practice relating to this subject, whether one exists or not. Practitioners will be the source of the knowledge in the first place, the users of the knowledge in future, and the people who validate the captured knowledge. If the community doesn't currently exist, consider engaging people in the relevant social or personal network of the knowledge sources you intend to tap.
3. Get clear what the captured knowledge is really about. What is the scope? Knowledge that is packaged and published needs to cover a specific area of business activity or subject/domain – boundaries can provide focus.

4. Collate any existing material upon which you can base your captured knowledge and look for general guidelines. Provide some context so that people can understand the purpose and relevance of the knowledge. Are there general guidelines that you can distil out of this material?

5. Elicit knowledge from individuals, teams and groups with relevant experience. This can be accomplished through retrospective interviews of individuals, or formal learning processes and meetings (Action Reviews, Retrospect's, etc) designed to glean and capture lessons learned, good practices etc, from recent projects or activities or events.

6. Distil the knowledge into concise and highly relevant 'nuggets' that represent the key insights, lessons learned and practices of the knowledge sources. If multiple sources of knowledge are harvested, identify common and contending knowledge and highlight these accordingly.

7. Organize and package the knowledge with the customer in mind:

- Build a checklist or guidelines illustrated with examples and stories. These should inform the user of the knowledge:
- 'What are the questions I need to ask myself?'
- 'What are the steps that I need to take?'
- Illustrate it with examples, stories, pictures, models, quotations, video and audio clips if possible.
- Develop a process map or workflow of the knowledge, and link the specific nuggets of knowledge with the relevant process sub-processes, activities and input and output elements.
- Develop a set of questions from the knowledge and organize the distilled 'nuggets' around these. Design these questions to reflect the knowledge content that has been gleaned from the sources and to prompt the thinking of others.
- Include links to people. Create a hyperlink to the knowledge sources personal home page or e-mail address wherever you mention them in the text. Include a list of all the people with any relationship with the content and/or a link to the relevant community of practice or other relevant networks.

8. Validate the Guidelines. Circulate the guidelines around the relevant community of practitioners and knowledge sources such as those interviewed. Ask them the following questions: 'Do the guidelines accurately reflect your knowledge and experience?' 'What do you have to add?'

9. Publish the knowledge. Store and manage the knowledge in a space where it can be easily searched, found and accessed by its community or other potential users. Often this will be the company intranet in the form of a digital knowledge asset as described here. New social media are also now available that make it easy to publish without having to master the programming or systems required to produce content on the Web to store the content include Wikis, Blogs, and Content Management Systems.

10. Initiate a feedback and ownership process. Encourage feedback from users, so that they pick up and eliminate any invalid recommendations. Instil a sense of obligation that 'if you use it, then you should add to it'.

Capturing Just Enough

Often the level of effort to capture knowledge gets in the way of it happening. Imagine you have just completed a project and learned something new that you think your fellow practitioners might find useful. But you don't have the energy or motivation to document this in a manner that you think it would take for someone to really understand what you did and learned. In this case, a Knowledge Capture One Pager Template (refer to the guide for the Knowledge Self-Capture Method for more information and useful templates) can be used to capture just enough about some important knowledge or experience that will prompt someone to reach out to the source and find out more.

Technical Considerations

The following questions are intended to help guide the technical implementation toward successful outcomes:

- Will the Knowledge Asset (knowledge repository) be a turn-key, word hyperlinked document, or Excel baseline (knowledge breakdown structure) delivery
- Who will host the Knowledge Asset?
- Where will the Knowledge Asset be hosted?
- What is the technology upon which the Knowledge Asset will be constructed?
- What are the governance rules for hosting the Knowledge Asset?
- Who will have access and if access is to be controlled, what are the impacts to ensuring "sufficient capture and reuse of the knowledge contained within?"
- Will you as the developer have access to a site that enables you to monitor, add, tweak, and change the asset as it evolved or will you have to do this through someone else?
- How will access be accomplished?
- Who is responsible for making the technical changes to the Knowledge Asset on the site?

COMMON PITFALLS

The following barriers and problems in the implementation of knowledge capture have been observed across many organizations:

- Trying to capture too much - Knowledge capture efforts should focus on what customers for that knowledge need, and not attempt to capture everything that is known about a particular topic. The basics of how to do something or foundational knowledge are probably already documented somewhere in a manual, guide, etc. Emphasis should be on what isn't widely known, new learning, and other knowledge that isn't typically documented in the usual manner.
- Underestimating the time and effort - It's a laborious process to harvest knowledge and present it in a manner that people can make sense of it for re-use and adoption. For example, it may take eight hours to distill a handful of powerful knowledge nuggets or insights from a one hour interview with an expert.
- Capturing knowledge that isn't used – unless you have identified what the potential customers for the captured knowledge are interested in, there's a good chance it's not what others will find useful.
- Assuming one size fits all - when it comes to methods for presenting captured knowledge it's important to understand people's preferences as receivers of knowledge. Some people find reading text a useful way to learn something. Others learn more by listening to an audio version of the knowledge shared by someone or by viewing a video of someone speaking or performing an activity.

Source: This guide is based on the work of Kent Greenes (www.greenesconsulting.com) and the KM Teams at British Petroleum and SAIC from 1995 to 2006.

Useful Links and Resources;

Balancing Act: How to Capture Knowledge Without Killing It by John Seely Brown and Paul Duguid, Harvard Business Review, May – June 2000

Learning to Fly: Practical Knowledge Management from Leading and Learning Organizations by Chris Collison and Geoff Parcel, 2000, Capstone, ISBN 1 84111250 9 1

SUPPORTING TOOL/RESOURCE 03: DOCUMENT REPOSITORIES

A Document repository is often termed knowledge repositories or a knowledge base. A Document repository is a tool employed to capture, organize and store codifiable knowledge and is an important component of knowledge management initiatives in organizations. Projects of any size can generate a lot of documents. Some large projects will last several years and generate hundreds of documents. In addition, almost every project is worked on by more than one person (not all of whom are necessarily located in the same office), and the documents that make up the project often need to be shared with stakeholders both inside and outside the organization. Simply emailing files back and forth prohibits real-time collaboration and is typically too unwieldy a process anyway, so knowledge workers often rely on a document repository of one sort or another. A document repository can be managed with software tools, simply placed on a shared directory using a folder and file structure, or replaced with a virtual data room (an online document repository).

A Document repository is an important part of an organization's information and knowledge initiatives. Smart companies use a document repository to store and distribute employees' knowledge, such as best practices or research results, across firms. This has the benefit of enabling employees to reuse information already acquired by co-workers, rather than engaging in expensive, inefficient, and duplicative efforts to reacquire the knowledge on their own. A Document repository can therefore provide companies with a valuable source of competitive advantage, especially in knowledge-intensive industries such as information technology, consulting, and biotech or life sciences.

What:

A collection of textual showrooms that can be viewed, retrieved and interpreted both by humans and by automates. A document repository adds navigation and categorization to the information stored.

Why:

- Manages the intellectual property that is locked up in the documents of an organization
- Can be used by multitude of users
- Different from an expert system; can be paper, electronic or both

When:

- Processes have been / are being documented
- Historical knowledge of an organization's practices is important to current business needs
- Performers use and need to be able to find documents in order to perform their tasks

How:

Determine which documents need to be categorized and stored. Develop system to manage the entire life cycle of a document from creation through multiple revisions and finally into storage and records management.

One of the biggest mistakes companies make regarding their information strategy is the fact that all too often companies formulate their document repository based on the assumption that structured data represents the majority of the data that will be housed there. In fact, the general rule of thumb is that structured data comprises less than one third of a company's total data. The overwhelming majority of a company's data is found in unstructured documents such as proposals, purchase orders, invoices, employee reviews, and reports.

Since all of these different types of documents are usually stored in many different document repositories, including customer relationship management systems, enterprise resource planning systems and different folders on employees' hard drives, if the document repository does not have a robust search capability, the ability of information workers to locate a document and incorporate his or her organization's knowledge base into daily work will be severely hampered.

Source:
Document Repositories – definitions and usage:
http://www.nongnu.org/sdx/docs/html/doc-sdx2/en/presentation/bases.html

V-Room – Document Repositories and Collaboration Solutions
http://www.v-rooms.com/document-repository.php

Document Repository Organization
http://telephonecollectors.info/index.php?option=com_content&view=article&id=8&Itemid=12

SUPPORTING TOOL/RESOURCE 04: EXPERT SYSTEMS

Many expert systems are not complex or difficult to build. An expert system, usually automated, is organized around problems and how to troubleshoot them. Common or difficult problems are logged into the system. Advice about troubleshooting and solving those problems is provided by the system. This type of tree structured logic can easily be converted to a computerized system that is easier to use, faster and automated. More elaborate systems may include confidence factors allowing several possible solutions to be selected with different degrees of confidence.

Expert systems can explain why data is needed and how conclusions were reached. A system may be highly interactive (directly asking the user questions) or embedded where all input comes from another program. The range of problems that can be handled by expert systems is vast.

Traditionally expert system development has been a major expense both in time and money. Getting even a single system built was a big project. The cost of system development prohibited building expert systems on more than a few projects. The key to implementing expert systems widely, effectively and at low cost is to have easy-to-use expert system development tools readily available to the experts. As more power is needed for certain applications, higher level tools can be used with advanced features to give you complete control over the inference engine, modularization of the knowledge base, flow of execution, the user interface and integration with other programs.

Why:

- Easily accessible
- Available 24/7
- Can be used by multitude of users
- Documents organization's practices

When:

- Future problems can be anticipated with some degree of accuracy
- Solutions can be documented and explained via an expert system

How:

Identify potential problems and their solutions. Document the problems and solutions, using a common language, so it can be accessed by performers on an as needed basis.

The Do's, Don'ts and Disadvantages:

- Document newly encountered problems and solutions as they occur to keep the system up to date;
- Expert systems should not be the sole method of gaining knowledge in-person back-up may be necessary;
- Common sense - In addition to a great deal of technical knowledge, human experts have common sense. It is not yet known how to give expert systems common sense;
- Creativity - Human experts can respond creatively to unusual situations, expert systems cannot;
- Learning - Human experts automatically adapt to changing environments; expert systems must be explicitly updated. Case-based reasoning and neural networks are methods that can incorporate learning;

- Sensory Experience - Human experts have available to them a wide range of sensory experience; expert systems are currently dependent on symbolic input; and
- Degradation - Expert systems are not good at recognizing when no answer exists or when the problem is outside their area of expertise.

Source:

What Is An Expert System?
http://www.ericdigests.org/pre-9220/expert.htm

Expert Systems
http://www.referenceforbusiness.com/encyclopedia/Ent-Fac/Expert-Systems.html

Alberico, Ralph. (1990). AI/expert systems: The library connection. In Nancy Melin Nelson (Ed.), Technology for the '90s: Microcomputers in Libraries (pp. 65-95). Westport, CT: Meckler.

SUPPORTING TOOL/RESOURCE 05: KM SPECTRUM

The KM Spectrum was originally developed to help organizations asses their KM capabilities and select a suitable KM approach for their situation. KM activities are grouped into six categories and each of the categories has particular KM systems of approaches to support them. The KM categories are:

1. Transactional – Knowledge is embedded in technology (e.g. codifying knowledge and embedding it in applications for use by Help Desks, call centres, cased based systems, etc)
2. Analytical – knowledge is derived from external data sources (e.g. customer information)
3. Asset management – explicit management of knowledge assets which can be reused in different ways.
4. Process based – the codification and improvement of business practices and sharing improvements within the company.
5. Developmental – building the capabilities of the company's workers through training and development.
6. Innovation / Creation – fostering and environment which promotes the creation of knowledge (e.g. focuses on facilitating knowledge transfer through facilitating and sharing and creation of new knowledge which rests in tacit form in people's heads) (MARS Centre approach in Toronto).

Rule of Thumb for Selecting KM/KT Applications
The more valuable the knowledge, the less sophisticated the technology that supports it. Tacit knowledge is best shared through people while explicit knowledge can be shared through machines. Tacit knowledge generally means less high-tech.

Caution: any KM strategy must put people first.

O'Dell & Grayson (1998)

These 6 categories form a progression from the management of explicit knowledge at one end to tacit knowledge at the other. For each element in the spectrum, enabling technologies are listed that are used to implement the kinds of KM applications. This information provides a way to identify the KM activity already being done in an organization, even if it was not previously perceived in KM terms (Binney, 2001).

The following table refers to approaches in classify KM and the associated technologies used to capture/store knowledge. For example, if the business is primarily customer service oriented then it is likely a more transactional and an organization might then examine the types of KM solutions found under *"transactional"*. If a company is a consultant think tank, for example, then their core business might be *"analytical"* and would therefore look for solutions under this heading. If an organization is mainly concerned with improving internal processes – then the *"process"* KM solutions may be most appropriate. If you are an emerging technology firm such as RIM / APPLE etc., and see your company competitive edge as innovation then *"innovation/creation"* would be the KM / KT solutions.

Table 1: KM Spectrum, Applications and Enabling Technologies

Transactional	Analytical	Asset Mgmt. & Improvement	Process	Developmental	Innovation / Creation
Applications					
▪ Cased Based Reasoning ▪ Help Desk Applications ▪ Customer Service Applications ▪ Order Entry	▪ Data warehousing ▪ Data Mining ▪ Business Intelligence ▪ Management Information Systems ▪ Decision Support	▪ Intellectual Property ▪ Document Mgmt ▪ Knowledge Valuation ▪ Knowledge	▪ TQM ▪ Benchmarking ▪ Best Practices ▪ Quality Mgmt ▪ Business Process	▪ Skills Development ▪ Staff Competencies ▪ Learning ▪ Training	▪ Communities ▪ Collaboration ▪ Discussion Forums ▪ Networking ▪ Virtual Teams

Applications ▪ Service Agent Support Applications	Systems ▪ Customer Relationship Mgmt ▪ Competitive Intelligence	Repositories ▪ Content Mgmt ▪ Supply chain Mgmt ▪ Allocation of resources ▪ Time/Motion studies	Reengineering ▪ Process Automation ▪ Lessons Learned ▪ ISO. Sigma Six, Standards, etc.		▪ R&D ▪ Multi-disciplinary Teams
Enabling Technologies					
▪ Expert systems ▪ Cognitive technologies ▪ Rule based expert systems ▪ Rule induction decision trees ▪ Geospatial Information systems ▪ Probability networks	▪ Intelligent Agents ▪ Web Crawlers ▪ Relational DBMS ▪ Neural Computing ▪ Push Technologies ▪ Data Analysis & Reporting Tools	▪ Document Mgmt Tools ▪ Search Engines ▪ Knowledge Maps ▪ Library Systems ▪ Logic Models ▪ Operational Research techniques	▪ Workflow Mgmt ▪ Process Modelling Tools	▪ On-line training ▪ e-learning ▪ Training	▪ Groupware ▪ Email ▪ Chat Rooms ▪ Video Conferencing ▪ Search engines ▪ Voice Mail ▪ Bulletin Boards ▪ Push technologies ▪ Simulation technologies

Source: Binney, 2001

The table, reproduced below, is useful for understanding the similarities and nuances of the different approaches and provides links to various authors who have written on this area of the KM spectrum.

Table 2: KM Spectrum Mapped to other KM Classifications *(Haggie and Kingston, 2003 p. 9)*

KM Spectrum	Transactional	Analytical	Asset Mgmt	Process	Developmental	Innovation / Creation
KM Accessibility	Explicit		Implicit		Tacit	
KM Conversion	Combination		Externalization		Internalization	Socialization
Social Learning Cycle (Boisot)	Problem solving	Scanning Abstraction	Impacting		Diffusion	Absorption
KM Type	Mostly procedural	Mostly declarative	Declarative	Procedural	Either	Either
Value Disciplines (Treacy & Wiersema, O'Dell & Grayson)	Operational excellence	Customer Intimacy	Any	Operational excellence	Any	Product Leadership
KM Strategies (Wiig, APQC)	Knowledge transfer	Customer focused knowledge	Intellectual asset Mgmt	Knowledge transfer	Personal Knowledge Asset Mgmt	Knowledge creation
KM Strategies (Day & Wendler)	Developing & transferring best practices	Creating new industry from embedded knowledge	Creating a standard by releasing proprietary knowledge	Developing & transferring best practices	Transferring best practices	Fostering and commercializing innovation
KM Strategy Type (Zack)	Conservative (exploiting existing knowledge)				Aggressive (creating new knowledge)	

For a listing of factors impacting KM, which include technology and its limitations please refer to An Overview of KM and KT Theory.

SUPPORTING TOOL/RESOURCE 06: KNOWLEDGE SELF-CAPTURE

Knowledge self-capture is intended to help individuals capture and document their personal knowledge, lessons learned and insights.

GETTING STARTED:

Two methods are provided to guide an individual through self- documentation of their knowledge. The ***Knowledge Self-Documentation Inquiry*** method is used when a person wants to capture their broad-based learning and knowledge from a project or team experience, but may not have a clear idea about what is important to document. For example, a person may be leaving a position or job and want to document key learning and insights they gained for future use. The guide is designed using a process of inquiry to help draw this knowledge out as the person answers the questions provided.

A different method is recommended for documenting a specific practice or lesson learned that a person knows they want to capture. For example, someone may have a good practice they used to accelerate integration of people in a merger and acquisition. Or, a person may have just piloted a new approach to phased retirement and learned a valuable lesson that they want to capture. The ***Knowledge Self-Documentation Template*** method provides a simple one-page form with instructions for documenting knowledge about a specific subject area or topic.

If it's not obvious which approach to use to document your knowledge, review them both to see which one best fits your needs.

Knowledge Self-Documentation Inquiry Method

Complete each Part of the following guide in order, following the instructions provided.

PART 1. PREPARATION

Personal reflection is key to capturing meaningful knowledge. Like anything worth doing, it takes time and effort, and getting started is often the hardest part. Here are a few simple steps you can take to start your thinking and reflection process.

- List the major objectives, initiatives, projects or programs that you have been directly involved in during the course of your most recent job or career. If you want to capture what you've learned from a particular experience, then list the major objectives, milestones, and accomplishments from that experience.
- Ask yourself, "What stands out for me from these experiences, or single experience? Why?"
- Create an environment where you will have minimal distractions for an hour or so to start the actual documentation process in Part 2.

PART 2. DOCUMENTATION

Use the categories that follow as the major headings in your document.

Title: Select a title that reflects the knowledge content of the document you are about to create.

Background and Context:
The information gathered from these questions provides a context for the rest of the documentation.

- Name/Title and Current Position/Company
- Contact Information: Phone and Email
- Name of Team, Project or Initiative

- Description of Team, Project or Initiative:
  - Purpose and objectives of the effort
  - Approach used to plan and perform the work
  - Relevant environmental aspects in which the work was performed
- My Role

Knowledge Specific to Role & Project

Answer the questions that are relevant to the experience you are documenting.

- Explain how the outcome of the effort met or didn't meet your expectations.
- For the functions and activities that you participated in, what are some of the key factors that led to success?
- What surprised you most?
- What frustrated you most?
- Describe the process or work steps you went through to accomplish the work.
- Who are other critical participants in the effort and why?
- If you were starting again tomorrow, what would you do differently and why? What would you do the same?
- If you only had five minutes, what would you say to someone about to begin a similar effort?

As you answer these questions, ask yourself whether the response you are providing is precise enough to enable someone else to act on it. For instance:

- 'Take enough time': How long a time you would say would be appropriate?
- 'Everybody should participate': What organizations would you say should be involved?
- 'This project went really well': How does this compare with other projects you have been involved in? What was different this time?
- 'This was a difficult problem': What made it difficult?
- 'We couldn't do better': What would other teams need to do in the future, in order to assure they do better?

Customer Knowledge Needs

A proven practice in documenting knowledge is to ask potential customers for your knowledge what they would like to know and learn from you. Fellow practitioners, experts and novices are good sources to ask. Including their questions and your responses as part of the documentation will add significant value to your contribution.

Summary

Summarize your knowledge by answering the following question: "What would you say are the two or three most important pieces of information or knowledge that anyone beginning work on a similar project should know?"

PART 3. PUBLISH & DISSEMINATE

- Gather and attach any materials that were used in the work you performed and that you refer to in the documentation, and feel others may be able to modify and re-use in similar work. This supporting content may be in the form of reports and other text documents, spreadsheets, presentations, etc.
- Make the document searchable and available online in your company Intranet. If you are not sure how to do this, contact your IT department or others responsible for content management.
- Create awareness of its existence through alerts and relevant networks, functions and lines of business. Think of people, teams and groups that may find this knowledge useful and let them know it is available.

Example of Knowledge Self-Capture:

Complete the instructions provided for each part of the Template.

Title
Create a short, descriptive title that describes how you and others would refer to this knowledge, practice or lesson learned when talking to a fellow practitioner.

Guidelines/Instructions:
Each of the following 5 sections represents a single paragraph. The total length of the complete document should not exceed 1 page in length. The idea is to be brief and concise, and document some knowledge in a manner that's good enough to entice someone to contact you for more information. Most people will read a page, but many will not take the time to read more than that. *(A helpful hint: take 5 minutes and reflect on the knowledge you want to share before you write anything! If you were in an elevator with someone that you really wanted to share this with, what would you say in the few minutes you have?)*

Business Context
Describe what was going on in the environment (internal and external drivers relating to business, organization/culture and local conditions) where and when the knowledge was created. Think of what someone else would need to know to be able to make sense of what you did and adapt and apply it in their situation.

What Was Done
Describe the knowledge in the form of an experience, good practice or lesson learned and how it was applied. Explain the actual business implementation – the steps you took, and/or core processes/activities you worked through. Be as specific and concise as possible. Attach any relevant artefacts or support documents from the work you did that you feel others may find useful.

Impact
Describe the business result impacted by the application of this knowledge and ***why*** it made a difference. Where possible, share the experience through the words used by those who felt the impact of the knowledge - a quote or paraphrasing someone can go a long way toward getting someone to really consider using the knowledge.

Key Learning & Advice
Describe what you learned from the application of the knowledge What's the one thing that stands out for you that you want to remember the next time you apply this knowledge? What would you advise someone else who may want to apply this knowledge in the future?

Contact Information: Your name, date of this documentation and how best to contact you

Source: This guide is based on the work of Kent Greenes (www.greenesconsulting.com) and the KM Teams at British Petroleum and SAIC from 1995 to 2006.

Developing a knowledge capture system based on sharable and self-documenting learning objects
http://www.ifets.info/journals/6_3/1.pdf

SUPPORTING TOOL/RESOURCE 07: KNOWLEDGE ELICITATION INTERVIEWS

Knowledge interviews are conversations between people who have relevant knowledge to share and a person that is responsible for harvesting and eliciting the knowledge for potential use by others at some future point in time.

BENEFITS OF KNOWLEDGE ELICITATION INTERVIEWS:

Gather knowledge from individuals in a manner that others will find useful.

GETTING STARTED:

The questions provided here have been developed with the customer for the knowledge you want to capture in mind. In addition to these, it is good practice to ask other experts and practitioners for specific questions they think are important to ask of someone experienced in their subject area. It is also helpful to seek questions from novices or people who are new to the subject area.

Careful consideration of the above along with thoughtful preparation and execution will result in elicitation of relevant knowledge that others could benefit from. In practice, it is often helpful to use a one-page reminder (included at the end of this document) for the interviewer to bring to the interview to help ensure the keep questions and process steps are followed.

Transcription of the interview is often necessary, especially if you use an audio-recording device to record the interview. This approach is encouraged so that the interviewer can focus on what is being said and not trying to capture everything by hand in note form.

Some key learning and insights emerged from Leda Favor from Dade-Behring in her application of this guide and are included in this document.

In addition, Robert Ward from Amerada Hess provided a template that he developed to support the hand-over process as an employee of a business unit transitions out of their present role. It is included at the end of this document.

PART 1. PREPARATION

- Provide the interviewee a few sample questions as part of an Interview Confirmation Letter you send 2-3 days in advance, so they have a chance to start thinking about the topic. Mention that you would like to record the session (so you can concentrate on what is being said) for future reference. Belay any fears they have about this by promising to let them review and edit anything you capture before it publish…and never break this promise!
- If you have witnessed the project or event take place, or if you've had informal conversations with managers or participants and other users of the knowledge you are gathering, you may know there are a few issues that others would like to hear about. Print out a list of those issues along with the more general questions suggested in the following sections. Rather than forcing the interviewee to follow your list, use it as a checklist at mid-interview and then again near the end or it. You will usually find most of the issues have been covered, and you can ask about the few missing ones.

- At the beginning of the session, make the point that the results of interview distillation will be submitted to the interviewee for approval prior to publication of the material *(only relevant if you plan to publish the interview results).*

- Try and make this session more of an open conversation than an interview by a journalist. Remember, this is not about what you want to hear, but rather, what the interviewee thinks is important for others to know.

- Ask open-ended questions – rather than ones with "yes or no" answers.
  Maintain the interviewee's energy and train of thought:

    a. Follow the energy and interests of the interviewee, not what you may have thought were important before you started. Watch the body language and listen to voice inflections. This will tell you where the interviewee's areas of interest or areas of concern exist.
    b. Respect the interviewee's line of thought, and help develop it by asking follow-up questions if you perceive there is more the interviewee would like to say or that more precision is needed.
    c. Refrain from telling your own stories, or from drawing conclusions on what the interviewee said. Even when reaffirming the interviewee's point, they will distract him from his own train of thought.
    d. Once a line of thought is completed then introduce another topic and ask a question in a new direction, to keep the interview moving forward.

Robert Ward has performed several knowledge elicitation interviews and provides the following information from his experience. "I sometimes use a questionnaire to elicit the administrative data from people, like their contact details, where they keep their files, in what format, etc. This needs to be captured as well as the knowledge stuff.

Additionally, getting useful knowledge by looking forward using the five year business plan gets the interviewee thinking about what will be happening and acts as both a prompt and makes the whole experience more relevant to all engaged.

PART II. BACKGROUND AND CONTEXT

The information gathered from these questions provides a context for the rest of the interview.

1. Name/Title and Current Position/Company

2. What was your role in _____, or in which function(s) did you participate in the _____ effort?

PART III. KNOWLEDGE SPECIFIC TO ROLE & PROJECT

These questions pertain to the role and functions identified in Questions 1-2. Start with the first few questions and then select from the rest as the conversation dictates.

- Did the outcome meet your expectations?
- For the functions that you've participated in, what are some of the key factors that led to success?
- What surprised you most?
- What frustrated you most?
- What "aha" insights did you gain during the process?
- If you were starting again tomorrow, what would you do differently?
- Describe the steps you'd go through to accomplish X, Y, Z.
- Who are other critical participants in the process and why?

As you hear an answer, ask yourself whether the implicit advice is precise enough as to be followed. We are looking for specific actionable recommendations that a future team could follow. Once the interviewee finishes answering, and if needed, ask for relevant clarifications. For instance:

- 'Take enough time': *How long a time you would say would be appropriate?*
- 'Everybody should participate': *What organizations would you say should be involved?*

- 'This project went really well': *How does this compare with other projects you have been involved in? What was different this time?*
- 'This is a difficult problem': *What makes it difficult?*
- 'We couldn't do better': *What would other teams need to do in the future, in order to assure they do better?*

An iterative questioning process, open question – clarifications as needed – open question – etc. is often a very fruitful and respectful approach to follow.

PART IV. KNOWLEDGE AS MEMBER OF PROJECT TEAM

These questions seek knowledge that relates to participation on the project team rather than being function-specific.

- What 2 or 3 things would you want to know prior to starting a new effort?
- What is the key piece of advice that you would give to a future project team?

Part V. Wrap-up / Summary

Often the session has created some new knowledge for the interviewee, which builds during the course of your time together. They may have some different things to share at the end of the session than they did at the beginning. These often turn out to be the most valuable questions to ask. (In an emergency, skip right to these!)

- To summarize, what would you say are the three most important pieces of information or knowledge that anyone beginning work on a similar project should know?

- Is there anything you expected me to ask you, or anything not covered that you think might be important?

- What's one thing no one has ever asked you about _____, that you think is important to share?

Part VI. Completion

After the interview is finished, cover the following items.

- If you haven't done so already, ask if the interviewee is willing to share materials referred to in the interview. Arrange for receipt of these.
- Confirm the next steps, in particular the fact that you will be sending the interviewee your extracts of the conversation for approval.
- Provide the interviewee with your contact information so that if they think of anything else to share they can get hold of you.

Transcription

In most cases and with the agreement of the interviewee, you will have recorded the session with a professional transcription service (e.g. a digital audio recorder. It is highly recommended that you use www.escriptionist.com**)** to convert the audio to text to enable distillation (of the knowledge into meaningful content and to perform the other steps in knowledge capture to make the knowledge visible and accessible by others. Engaging the transcription service provider in advance is important to ensure that the equipment and audio-recording process you use will meet their requirements for transcription.

KEY LEARNING AND INSIGHTS

Dade-Behring used the knowledge elicitation interview method and this guide to harvest knowledge from a person in a key position that was leaving to take on another role in their company. Their learning's are included here to help others benefit from their experience.

Known lessons that were reinforced through their experience using this method include:

- Knowledge elicitation interviews are a good way to assist in retirement transition process-excellent from an HR perspective.
- Top Vice President level support made the initial launch of process accepted by the functional group.
- Providing all questions in advance helped to prepare participants.
- It is challenging to have one person serve all roles of interviewer/harvester/distiller – it's a lot of work!
- This process works well for the carefully selected positions that require this detail of harvesting; there are better ways to which to transfer knowledge from positions that require hands-on mentoring or shadowing
- Harvesting and placing final distillations on a web site is the most useful way to broadly and efficiently share this information.

New lessons that emerged from their experience using this guide and approach include:

- There was a high level of emotionalism associated with this process.
- There was energy at all levels to participate in the interviews once they got started talking.
- It is a time consuming process depending on the number of interviews required.
- Value of utilizing a professional transcription service (e.g. www.escriptionist.com) and the equipment/process associated with it.
- Intangible benefits to the incumbent (who is retiring) and the recipient (successor to the role); provides a standard structure to collect information and share it.
- Benefits to the person(s) being interviewed—real morale booster that someone cared enough to ask their opinions.
- In the absence of creating the web site, the individual transcripts were valuable to the new incumbent.

ONE PAGE REMINDER FOR THE INTERVIEWER

Interview about:	
With:	
Date:	
Role during project / activity:	
Current role and activity:	

This effort aims at improving future results in all projects, in this region and others. All the results of this interview will be submitted to your approval prior to publication.

GENERAL QUESTIONS:

To provoke reflection	**To elicit details**
Did the outcome meet your expectations?	What are the key steps in accomplishing *Role*, *Project*
Did anything surprise you?	How long a time?
Were there some 'aha' moments?	Depends on what?
Was there anything that frustrated you?	Good/Bad compared to what?
For the area of *Role*, what are the key factors for success?	What made it easy/difficult? What did we do to make it easy/difficult?

If you were starting again tomorrow, what would you do different?	What could a future team do, even if the circumstances remain the same?
What is the key piece of advice you would give to a future project team?	How did that help / hinder the project?

ISSUES OTHERS WOULD LIKE TO HEAR ABOUT OR ISSUES OPENED DURING THE INTERVIEW:

Artefacts mentioned:

- ⇒ Ask your co-interviewer (interview buddy): Do you have any other questions?
- ⇒ To the interviewee: Thank you very much for your insights.
- ⇒ Is it OK if I contact you about –artefacts- ?
- ⇒ I will contact you / send an email with what we extracted from this interview, to make sure we understood correctly and that you approve of it being shared.

This guide is based on the work of the Kent Greenes (www.greenesconsulting.com) & the KM Team at British Petroleum from 1995 to 1999.

ASSET KNOWLEDGE TRANSFER FORM

This tool is intended to support the hand-over process of responsibilities as an employee transitions out of his/her present role. This questionnaire is designed to facilitate part of the process by:

- ⇒ Capturing information that will help others more easily access the knowledge and information needed to carry out their new role, and
- ⇒ Providing someone with a better understanding of the business environment in which they will be working.
- ⇒ Add value to the previous team - providing valuable insights, knowledge & experience after you've gone

The form template included below is divided into 6 sections:

- ⇒ Personal Information (You should fill this out only once)
- ⇒ Field Asset Information (This and subsequent sections should be filled out once for each Asset on which you have worked)
- ⇒ Asset Management Strategy
- ⇒ Asset Politics
- ⇒ Asset History
- ⇒ Asset Administration

ASSET KNOWLEDGE TRANSFER FORM

Personnel information	
Interviewee's User ID:	
Interviewee's Name	
Job Title:	
Manager Name:	
Other Reporting Relationships: (e.g. "dotted line reports")	
Business Unit:	
Location:	
Job Description:	
Length of Time in Job Role:	
Previous Incumbents of Job Role and Dates Job Held:	
Where will your personal hard copy files be stored?:	
Where will your personal electronic files be stored?:	
Which shared drives do you use? (Please give name and owner):	
Are there important files on your personal ("m:") drive? If so, how are they organized:	

Are there any important files on your c: drive? If so, we would prefer that they be transferred to your m: drive.	
If you would like us to do this for you, please indicate here (Yes/No)	
New Phone Number: (to be used to check and clarify your responses over the next month or so)	
New Email Address: (to be used to check and clarify your responses over the next month or so)	
Longer term, are you willing to be included in HessConnect as an 'External contact"?	
Other information you deem important:	

Field Asset information	
Field Asset Name:	
Where is the original FDP?	
Where is the project sanction presentation with economics?	
Where are all the drilling records, including exploration and appraisal, stored and how can they be accessed?	
Where are the reservoir models and reservoir history?	
Where are the production records and access to databases like OFIRS?	
Where is the safety history and access to databases like SYNERG	
What are the current economics, which model is used and who is the economist?	
Where is the schedule of partner related activities and meetings?	
Where is the latest AVP?	
Where is the database of presentations and how is it accessed?	
Where is the database of past AFEs and how is it accessed?	
Where are the details of capex and opex spent over the last 3 years, including budgets?	
Other information you deem important:	

Asset Management Strategy	
What is the Operator's strategy for managing the Asset?	
Is this a key asset for the Operator? (Yes/No)	
What is your view of the Operators strategy?	
Is this a key asset for us? (Yes/No)	
What is our strategy for the Asset?	
What is your view of this?	
Where are the opportunities to generate additional value?	
Are there any commercial issues ongoing, if so what are they?	
What issues are there on tariffs and export routes?	
Are there any satellite developments ongoing or being considered, if so what are they?	
What are the related issues?	
What is your view on the project(s), the opportunities and risks?	
Other information you deem important:	

Asset Politics	
Who are the key players in the meetings?	
How do you get things done?	
Are there pre-meetings, if so please describe?	
What is the best way to influence the Operator?	
What other factors will influence the Operator's actions?	
Is the Operator on track in delivering the strategy, if so how, if not why not?	
How do you monitor how the Operator is performing?	
Are there internal tensions or alliances within the Operators team, if so what are they?	
Other information you deem important	

Asset History	
What has our historic strategy been in managing the Asset?	
What alliances have we made?	
What alliances are there between others in the group?	

Are there lingering grudges between ourselves & others or between others in the group, if so please describe?	
Other information you deem important	

Asset Administration	
Who else is in the Hess team on the Asset?	
Who do you talk to, both internal and external, for legal aspects?	
Who do you talk to, both internal and external, for commercial aspects?	
Who do you talk to, both internal and external, for reservoir aspects?	
Who do you talk to, both internal and external, for facilities aspects?	
Who was your predecessor in the role?	
What about others within the Partners who you contact?	
Anyone else who you consult?	
Where are the records on the Asset stored, both electronic and hard copy?	
Where can I find the list of Committee members?	
What are the issues that you think may get missed when the new organisation takes over?	
Who are the people who will be in the new organisation that know the most about this work?	
Other information you deem important:	

Source:
http://www.cognizant.com/html/content/bluepapers/amseries-kt.pdf

Knowledge Management and New Organization Forms
http://www.brint.org/KMNewOrg.pdf

SUPPORTING TOOL/RESOURCE 08: BRAINSTORMING

Brainstorming makes it possible to quickly and with a minimum effort widen one's horizon about available experiences, ideas and opinions. This method, good for application in groups and in workshops, consists of collecting uncommented ideas or suggestions. Thus it is used especially at the beginning of a meeting or workshop in order to gain an overview of the available experiences or ideas to be built upon.

Brainstorming sessions are useful for solving problems, making product innovations, improving communication patterns, optimizing customer services, scheduling projects, budgeting, etc

Getting Started:

- Introduce a brainstorming question both orally and in writing on chart paper. Set time limits.
- Invite participants to respond with as many ideas or suggestions as possible, ideally in concise words.
- Refuse any comment on participants' contributions. Emphasize that all ideas are equally valid.
- Record each response on cards or chart paper.
- Group same and related ideas in clusters. Ask "What is missing?"
- Prioritize and analyze the results. Make participants feel the value added of the brainstorming in a bigger context. Decide on further steps.

KEY FACTORS TO SUCCESSFUL BRAINSTORMING

There are a numerous approaches to brainstorming, but whichever approach you use, there are several key factors which make the difference between a successful brainstorming session and a mediocre brainstorming session.

State your challenge correctly. In order to get the right ideas, you need to ensure that you are giving the brainstorm session participants the right challenge. Otherwise, you could end up with a lot of ideas which do not actually solve your problem. It is important to indicate very clearly the challenge in such a way as to indicate the kind of ideas you want, while not making the challenge so restricting that participants cannot get creative. The most common problem is that the challenge is vaguely phrased. A manager who is look-ing for ideas on how to improve product X in order to make it more attractive to younger customers all too often phrases the challenge like this: "New product ideas" or "product improvements". Such vague challenges encourage vague ideas, many of which do not respond to the managers' needs.

No squelching! Squelching is when you criticize an idea or a person contributing the idea. Squelching can be obvious, such as "That's the dumbest idea I have ever heard!" or subtle, such as "you'd never get the budget to do that." No matter what the form, squelching does two terrible things to a brainstorming session. Firstly, it makes the person who contributed the idea feel bad. As a result, she is unlikely to contribute any more ideas to the session. Even if her idea was not a good one, it is likely she would have had other, better ideas to contribute. Secondly, squelching tells other participants that unusual ideas are not welcome at this brainstorming session. Since most creative ideas are also unusual ideas, a single squelching effectively prevents participants from offering creative ideas. So, if you remember nothing else about brainstorming, remember: no squelching!

Mixed participants. When brainstorming works well, it is because the session taps into the combined creativity of all the participants. Clearly, then, the more varied the participants, the wider the range of creative thinking and the more creative the ideas generated. It is a common mistake for managers to think: we need marketing ideas, so let's get the marketing department together to brainstorm ideas. These people work together all the time, have similar backgrounds and know too much about marketing. As a result, their ideas will be limited in scope. Bringing together a dozen people from a dozen departments is a far better approach to generating a wide range of creative ideas.

Enthusiastic facilitator. The facilitator is the person who manages the brainstorming session. Normally, she does not contribute ideas, rather she makes note of the ideas, encourages participation, prevents squelching, watches the time and directs the session. A good facilitator will have a sense of humour and a knack for encouraging people to contribute ideas and be creative in their thinking. A good facilitator compliments ideas and gives high praise to the most outrageous ideas - that's because she knows that outrageous ideas en-courage outrageous thinking which generates creative ideas. Moreover, what at first might seem a crazy idea may, on reflection, prove to be a very creative idea. Incidentally, if the facilitator is in the same company as the participants, care should be taken not to use a facilitator who is significantly higher in the corporate hierarchy. A high ranking moderator can make participants reluctant to take the risk of proposing an outrageous or highly unusual idea.

Good environment with no disturbances. An uncomfortable environment, an overly small room, mobile phone calls and secretaries calling their bosses out of the room for a moment all not only interrupt a brainstorming session, but also interrupt the continuity and thinking of participants. If you want an effective brainstorming session, you must insist participants turn off their telephones and inform their staff that they are not to be disturbed short of a total catastrophe. You should find a space that is large enough for the group and comfortable. A supply of water and coffee should be provided. Sometimes a little alcohol, such as wine or beer, can loosen people up and reduce inhibitions about proposing crazy ideas. Where possible, hold the brainstorming session outside your office, in a pleasant environment where participants are less likely to be disturbed or worry about their other work obligations.

PITFALLS

Not all Brainstorming sessions are effective. Many times these types of meetings suffer due to various factors, such as:

- unclear objectives or ill-defined goals
- disorganized or less-than-enthusiastic participation
- failures in note taking
- conflicts among team members
- strong or overbearing personalities
- "class system" in a pecking-order hierarchy
- micro-management by various decision makers
- "not invented here" (NIH) syndrome

Having a defined and communicated plan or objective, having agreed-upon and enforced "meeting guidelines," and knowing what kind of brainstorming techniques to use will make your creativity and decision making meetings more effective.

Variations of brainstorming procedures

An important rule of facilitation is: "The goal determines the methods". This naturally applies to brain-storming as well. Sometimes time constraints are the most important consideration; sometimes the aim is an abundance of creative answers, and sometimes the social process. Depending on the situation, there are many variations of brainstorming that can be used to achieve the desired results in a short time.

In a "pure" brainstorming participants are invited to contribute as many ideas as possible. However, when planning brainstorming sessions, it is helpful to fix three variables deliberately for staying within the time limit and also limiting the number of cards. A brainstorming session should fulfil a purpose; depending on the goal, it may last for shorter or longer periods according to whether many or only a few ideas are collected. The three variables are: X = Number of participants per brainstorming group (N = 1 … 5)
Y = Number of minutes for thinking and writing
Z = Number of answers per group

Facilitator leads the brainstorming
Goal: To group a number of idea-cards in clusters.
Procedure: Ask a clear question. Give participants time to write their ideas on cards. Collect all cards, mix them up, and with the support of the group form meaningful clusters.
Alternative procedure: Collect one first card, read it out and hang it on a pinboard. Ask for cards from other participants with same / similar content and form a first cluster. Collect a second card, etc. until all cards are clustered.

Participants group the cards
Goal: To group a large number of cards and simultaneously get participants to make contact with one another. This has the added advantage that participants become actively engaged and identify with the result.
Procedure: Plan the brainstorming session so that grouping will be required for several topics (e.g. for a party: bar, food service, entertainment, decorations). All participants write cards; then they divide into four groups. Each group receives a set of cards, groups them together on the pin board, and then presents the cards it has grouped in a plenary session. It is advisable for participants to put their initials on the cards they write in case they need to answer questions about them.

Checklist method
Goal: To make a comprehensive compilation of equivalent ideas in a short time.
Procedure: Participants write ideas on a piece of paper. Each participant specifies his/her most important idea, and the facilitator (or a secretary) writes these on a card or flip chart (in the form of a list or mind map). Other participants who have the same idea strike this idea from their list; only new ideas will thus be mentioned. The facilitator collects ideas until all the lists are exhausted or until a predetermined number of answers have been compiled.

The paper carousel
Goal: To collect as many creative ideas or suggestions as possible in a group.
Procedure: Each participant writes an idea in response to the question posed on a piece of paper, and passes it to the person on his/her right. The neighbour reads the idea and writes a second idea underneath it, and so on. Normally five to seven steps are sufficient before participants run out of creative ideas. Participants meet in groups of three with their pieces of paper and choose three to five of the best ideas from the total of approximately twenty ideas, and write these ideas on cards which the facilitator then collects. This method is limited by the fact that some ideas will not be explained and thus be eliminated hastily.

Autumn leaves
Goal: To have participants move about and develop plenty of creative ideas.
Procedure: Participants write while standing and strolling around the room, recording answers to brainstorming questions on cards, which they deposit in a visible place on the floor. Cards with related ideas are already combined while being arranged on the floor. Participants may be inspired to think of new ideas while reading the cards that have already been written.

Brainstorming in small groups
Goal: Participants exchange experience and opinions on selected ideas.
Procedure: Brainstorming takes place in groups of 3-5 participants. Participants give answers to a brainstorming question and exchange opinions. The revised answers are written on cards. This variation is a mixture of brainstorming and discussion that offers a chance to rank the ideas. It is a procedure that requires proportionately more time.

Poster Chat
Goal: To collect simultaneously ideas under several headings in a big group.
Procedure: The topic of interest is subdivided into six to twelve aspects (or: the topic seen from different perspectives). For each aspect, a brainstorming question is written on a chart paper. Participants move around and write their ideas, suggestions, and answers on the respective chart. After half to three quarters of an hour, at least 100 suggestions are made and documented.

Weighing or Ranking of Options
After numerous ideas have been collected in creative steps in a group, the ideas must be reduced to manageable proportions with which the group can work. Establishing priorities is the best method for doing this. The process of establishing priorities among many different ideas can already be initiated during brainstorming by using a suitable procedure such as forming discussion groups or limiting the number of cards per person.

Simple weighing
Brainstorming frequently results in a number of options. The task at this point is to select the options that the group considers most important. First, however, all participants must understand the available options, and they must be visible to everyone. The facilitator distributes stickers to each participant, taking care to see that each person has approximately one-third as many stickers as there are options. No clear majorities will become apparent if too many or too few stickers are distributed. It is also important for participants to be in clear agreement about how to apply the stickers: should ideas be evaluated in clusters or individually? Can only one or several points be attached to one option?
If stickers are not available, participants can also make marks with a felt pen. Using initials rather than ticks will prevent sly participants from giving undue weight to their preferred option.

Making rankings
Participants rank the options from 1 to X. This step can take place through discussion in a plenary session or as a group task where the group has to reach agreement. It is helpful to make a simple preliminary weighing in order to rank the options, which can then be examined in discussion and adjusted wherever the scores are the same.

Cherry-picking
Cherry-picking is appropriate as a follow-up to the "autumn leaves" or "paper carousel" method. Participants "pick cherries" from among the ideas they find on cards on the floor or from a list for further work.

Open or anonymous prioritization?
With respect to some topics or in certain cultures, participants are fearful of expressing their opinions openly and prefer to assign points inconspicuously. To accommodate this situation, the pin board can be turned around, and each participant may then assign points privately, and thereby express an opinion or make an assessment. If this procedure really needs to be "top secret," ballot boxes (large envelopes for each option) or paper ballots can be used, completed anonymously, and then collected and evaluated.

Delegation
Ranking can be delegated to decision makers or the responsible person, if the role if the brainstorming is to produce a lot of ideas only. Ideas thus may be submitted to an evaluation process with formal and transparent criteria. A process that is tiring to be done in bigger groups.

Variety in methods here as well
In making priorities, many other procedures are possible to imagine. When the expected result is clear, an appropriate method can be chosen. Here are several possible choices:

- Distribute the various options throughout the room. Participants choose their preferred option. Only these options are subsequently dealt with. When there are many participants and few options, this process is suitable for simultaneously forming working groups that will work further with these options; it should be possible to change the groups prior to beginning the work.
- Multi-step procedure: After each round of voting, the option (or options) with the least number of votes is eliminated.
- In large gatherings, sub-groups dealing with a particular topic have the task of reaching a joint decision about their preferred idea.
- Participants evaluate options according to a list of criteria. When a parallel evaluation takes place in smaller groups, differing assessments must be discussed. This method is relatively transparent but very demanding.
- Project marketplace: Participants use play money to decide in which project they want to invest. Beans, coloured glass beads, pieces of cardboard or bricks can be used as play money.

Sources:

jbp-Website: http://www.jpb.com/creative/brainstorming.php

Human Rights Education Handbook:
http://www1.umn.edu/humanrts/edumat/hreduseries/hrhandbook/methods/1.htm

Agridea: Facilitation Manual. 2007.

Useful Links and Resources:

Value based Management: http://www.valuebasedmanagement.net/methods_brainstorming.html

Mindmap Software
http://www.smartdraw.com/specials/context/mindmapping.htm?id=217674&gclid=CIb5vZ7ClJICFQcGuwodvg_D7g

SUPPORTING TOOL/RESOURCE 09: EXIT INTERVIEWS

Exit interviews have evolved from feedback interviews with employees leaving the organization to a knowledge management tool, as a way of capturing knowledge from leavers. Rather than simply capturing human resources information, the interview also aims to capture knowledge about what it takes to do the job.

Done correctly, exit interviews can be a win-win situation for both the organization and the leaver. The organization gets to retain a portion of the leaver's knowledge and make it available to others, while the leavers get to articulate their unique contributions to the organization and to 'leave their mark'. Exit interviews are relatively quick and inexpensive. In a knowledge-focused exit interview, a face-to-face interview is needed.

Traditionally, exit interviews are conducted with employees leaving an organization. The purpose of the interview is to provide feedback on why employees are leaving, what they liked or didn't like about their employment and what areas of the organization they feel need improvement. Exit interviews are one of the most widely used methods of gathering employee feedback, along with employee satisfaction surveys.

More recently, the concept of exit interviewing has been revisited and expanded as a knowledge management tool, as a way of capturing knowledge from leavers. Rather than simply capturing human resources information, the interview also aims to capture knowledge about what it takes to do the job.

Example 1:

Getting Started:

- **Start early**. Plan the exit handover with replacing staff.
- **Identify persons that might benefit from the captured knowledge**. Check their interest.
- **Make sure explicit knowledge captured throughout the whole working period is accessible**. Check for relevant additional aspects to be captured now.
- **For tacit knowledge, review the key tasks of the person leaving**. Ask about how to go about those tasks and the needed knowledge.
- **Ask for a 'walk through' to identify success stories and success factors, problems and pitfalls.**
- **Identify knowledge sources (persons, networks).**

The best exit interview happens during an overlap between the leaving and the replacing person.

BENEFITS OF EXIT INTERVIEWS:

- vital knowledge is not lost to the organization when people leave
- the learning curve of new people joining the organization is shortened
- they can be done relatively quickly and inexpensively
- they can result in the leaver having a more positive view of the organization

Done correctly, exit interviews can be a win-win situation for both the organization and the leaver. The organization gets to retain a portion of the leaver's knowledge and make it available to others, while the leaver gets to articulate their unique contributions to the organization and to 'leave their mark'.

Example 2: Exit Interview Process

GETTING STARTED:

Traditional exit interviews can be conducted in a variety of ways: face-to-face, over the telephone, using a written questionnaire, or via the Internet using an exit interview management system. In a knowledge-focused exit interview, a face-to-face interview is needed.

Step 1: Plan Early
You will need to think carefully about the information you would like to gather before the interview and start your preparations early. While the traditional exit interview will tend to collect mainly human resources information, the primary focus of the knowledge-focused interview is on knowledge that would be helpful to the next person who will do the job or to others in the organization doing similar jobs.

Start planning the handover and exit interview as soon as you know a person is leaving. Identify who in the organization might benefit from that person's knowledge and what they will need to know. Then work out a plan to capture the leaver's knowledge during the time remaining before they leave.

Step 2: Determine the scope of knowledge
The aim of the interview process is to tap into both explicit knowledge (knowledge that is already documented such as in fi les and emails, and knowledge that can be easily documented), and tacit knowledge (knowledge that is less easy to capture and that needs to be explained or demonstrated).

In the case of explicit knowledge, make sure the leaver moves relevant files – both hard copy and electronic – into shared folders or a document library. Ask them to prune and organize these files and to create role and task folders or notes for their successor.

Step 3: Conduct the Interview
For tacit knowledge, you will need to interview the leaver face-to-face. Prepare for the interview by reviewing the key tasks the person does based on a job description or annual performance plan. You can then use that information as the basis for discussing how they go about those tasks, what knowledge and skills they need, any problems or pitfalls to be aware of etc. Find out about their network of contacts and sources of knowledge. If possible, create an overlap period between the leaver and their successor so that a 'live' handover can be done.
When conducting exit interviews, think carefully about who will be the interviewer. Someone from the Human Resources Department conducts traditional exit interviews. However this need not be the case in the knowledge-focused interview. Often a peer or a relevant subject expert will be most appropriate. Over and above the obvious interpersonal and interviewing skills needed, you will need to consider issues of trust and honesty. For example, if an employee has had a difficult relationship with a manager or colleague, that person might not be best placed to conduct the interview. Whoever you select, make sure they are appropriately skilled and trained.

Step 4: Follow up
Record the Exit Interview as succinctly and accurately as possible. A third person may be present during the interview to take notes and summarize the main points. Use the interview summary as the basis for a handover note, which the leaver can then supplement with additional knowledge and information as necessary. If at all possible, there should be an overlap between the leaver and his or her successor so that a live handover can be done. The Exit Interview summary and handover note are useful starting points for discussions during a handover. If a live handover is not possible, then a temporary member of staff may be appointed to act as a bridge.

KEY CONSIDERATIONS:

Traditional exit interviews are usually only appropriate for employees who voluntarily resign or retire rather than those who are fired or made redundant. In the case of the knowledge-focused interview, much will depend on the extent to which the organization has a culture that encourages knowledge sharing.

Be clear about who will use the knowledge gathered and how it will be used, before you begin to gather it; the purpose of the interview is not to gather knowledge per se, but to gather useful knowledge that will actually be used. The less you capture knowledge on a regular basis, the more you need to capture it at exit. However you may decide that you could gain more value from capturing knowledge at more regular intervals. For example, The Post Office uses exit interviews as one part of a series of 'cradle-to-grave' interviews to collect knowledge, using a method called 3E. The three Es are Entry, Expert and Exit. Entry interviews allow you to gather knowledge when employees first join the organization when they have 'new eyes' and a fresh perspective, and also to ask them what they would like to know to help them 'get up to speed'. Expert interviews are conducted as they develop skills and become experts in a particular role or field. For more information about this wider approach, see knowledge harvesting.

Source:
http://www.library.nhs.uk/knowledgemanagement/ViewResource.aspx?resID=93605&tabID=290&catID=10404

Useful Links and Resources:
Disappearing knowledge: are exit interviews the wit's end? by David Skyrme - I3 Update, 2001, November, No 55

SUPPORTING TOOL/RESOURCE 10: EXPERIENCE CAPITALIZATION

A conceptual definition of experience capitalization

Experience capitalization refers to the transformation of (individual and institutional) knowledge into capital by those directly involved in order to change a collective, institutional practice. It aims at changing one's own practices or structures. Experience capitalization is one method of reviewing experiences in order to produce knowledge.

It is a learning process which brings about changes by reverting to existing but latent experiences. Capitalizing on experiences paves the way for change – or is a partial step in a process of change already in progress. It supplies a basis for the planned and purposeful sequence of changes. Although experience capitalizations are performed by experience holders, they can be used by anyone desiring to change a practice.

Experience capitalizations can be directed at both the strategic orientations of organizations and activities and their conceptual basis, as well as at improving operations and processes. In both instances the initiative may stem from the geographical divisions or from a topical department.

All of us continually undergo a learning process in the scope of our activities so that capitalizing on experiences is an ongoing process. But only when individual knowledge is made relevant to the organization it is capitalized institutionally. Only if experience capitalizations are configured and planned as collective events, when a procedure is agreed upon by all participants and is directed towards achieving a predefined goal, do they exhibit a useful and communicable form or become processes with controllable results which can be implemented methodically in order to improve a practice.

Conceptual differentiations

Experience capitalization is not the same as experience documentation. In addition to archiving and accountability functions, experience documentation is directed at „learning in the future", and making information available to third parties. The objective is to create a retrievable memory.

Experience capitalization is a form of organizational learning. It overlaps with a variety of other procedures, with the documentation and exchange of experiences, with evaluations, case studies, cross-section analyses and other methods used to evaluate, present and apply experience. One important difference is the fact that in the process of experience capitalization, available experience is collected from the "stakeholders", from the persons and organizations directly involved, and then assimilated and used to plan and implement changes.

Regarding contents, the experience capitalization process does not require the involvement of third parties. The processes and results of experience capitalization belong to the participants themselves – although its results can be made available to other organizational units or third parties.

Experience capitalization cannot be delegated. External players will only be called in when those directly involved – the experience holders – ask them to participate. In such case, a specific role is delegated to them, such as that of structuring processes.

PURPOSE OF EXPERIENCE CAPITALIZATION

Experience capitalization aims at changing a practice – within projects or programs (country programs, sectorial or thematic programs, etc.), or within concepts, strategies and policies. The accumulated and structured experience capital is then to be invested and implemented in order to achieve improved performance.

Typical questions in experience capitalization are e.g.:

- "What do we know that can help us improve our future performance?"
- "What experiences can we use to realize our project or program more purposefully and
- How can we accomplish this, or how can we do more justice to context when shaping our
- Concept or strategy?"
- "Our project or master plan is improved with respect to these aspects (cite aspects)."
- "We need insights on the following aspects (cite aspects) to improve our project or strategy."

Experience capitalization must been seen as a part of a bigger organizational learning process. Experience capitalization is a learning process which paves the way for change. Capitalizing experience means consolidating already acquired experience into common viewpoints within organizational learning processes and translating them into a basis for a new orientation of activities, for the adaptation of concepts.

Lessons learned and good practices are the output of experience capitalization. Their outcome refers to triggered changes. The application of experiences must be prepared and agreed upon by all participants. The investment of "knowledge" capital must be planned with a maximum of consensus and implemented as a project of change. The purpose of experience capitalization is only achieved when a practice has actually been modified.

Consolidated experiences are not automatically implemented as a logical consequence of experience capitalization. This depends on the willingness of the persons and organizations involved to change, including those in hierarchical functions, as well as on existing structures and decisions which experience holders cannot make on their own. Last but not least – local partners and target groups must also support the changes. Unlike experience capitalization, the players involved in projects of change are usually not "autonomous".

METHODS FOR EXPERIENCE CAPITALIZATION

Experiences can be capitalized in very different ways, using a variety of instruments and procedures. Common to all forms of experience capitalization is the objective of changing a practice. To this end, individual and organizational knowledge are integrated and relevant actions undertaken.

The form of experience capitalization and the selection of appropriate instruments depend on the motivation and the objective of experience capitalization, on personnel and institutional participation in the process, and on the geographical range. Finally, based on their form, experience capitalizations also become part of institutional traditions. Processes and reasons for experience capitalizations and participation therein are thus also determined by the history of the organization which capitalizes on experience. Hence, process managers and participants must also

select the appropriate instruments or even create them. However, the use of instruments is not an end in itself since experience capitalization is not limited to the routine application of methods and procedures. The results of having applied such instruments must be interpreted, compared and evaluated in order to suitably serve as a basis for planning changes.

BRIEF AND QUICK EXPERIENCE CAPITALIZATION

In the scope of smaller projects or a community of practice, or when very specific questions are formulated within complex structures or systems, experience capitalization can be performed quickly (within days), with a minimum of logistics and without elaborate process structuring. The experience holders themselves, i.e. those directly involved, can realize this form of experience capitalization without external support. The enlistment of process supporters is only required when time resources are limited.

Appropriate methods for rapid experience capitalization processes include brainstorming sessions; surveys; and previously realized, easy self-evaluations in the sense of the SWOT procedure (S = success, W = weakness, O = opportunities, T = threats), etc.

This type of experience capitalization can be realized in the form of short workshops, written questionnaires or interviews, etc., and should take advantage of any already-scheduled events in the scope of projects and the SDC's annual, country and medium-term programs, including annual planning, mid-year and mid-term reviews, etc.

COMPREHENSIVE AND FAR-REACHING EXPERIENCE CAPITALIZATION

Basic adaptations of projects and programs, of concepts and strategies and their thematic orientation require a more broadly structured experience capitalization process which extends over weeks or even months. It may get by without a central event and without all participants encountering each other face-to-face.

When required, external experts (who may have only an indirect connection to the theme of the experience capitalization process) may also be enlisted as experience holders, in addition to those directly involved, to the employees from the regional offices and from Headquarters. In any case, external advisors must receive a clear mandate to function as process supporters based on a detailed functional specification.

Depending on the need, all available instruments can be used in comprehensive experience capitalization to record, present and consolidate experiences. These include, for example, brainstorming sessions, surveys, interviews and consultations, previously realized self- or internal evaluations, cross-sectional evaluations, partner analyses, case studies, the evaluation of existing documents, cognitive mapping, portfolio analyses, scenario techniques, etc.

Usually this procedure cannot be completed within a few events (integrated, most of the time, within the framework of other events). Instead, it requires detailed process planning, with clearly defined stages, responsibilities and the presentation of intermediate results, etc. In comprehensive experience capitalization, it is imperative that participants be informed of (intermediate) results, and that they are invited to assess and comment on them as soon as a first synthesis of results achieved in the process has become available. The respective feedbacks flow into the experience capitalization process and its final results. Such concluding feedback rounds help to bring about a consensus (or to determine differences) in addition to having participants support the final results.

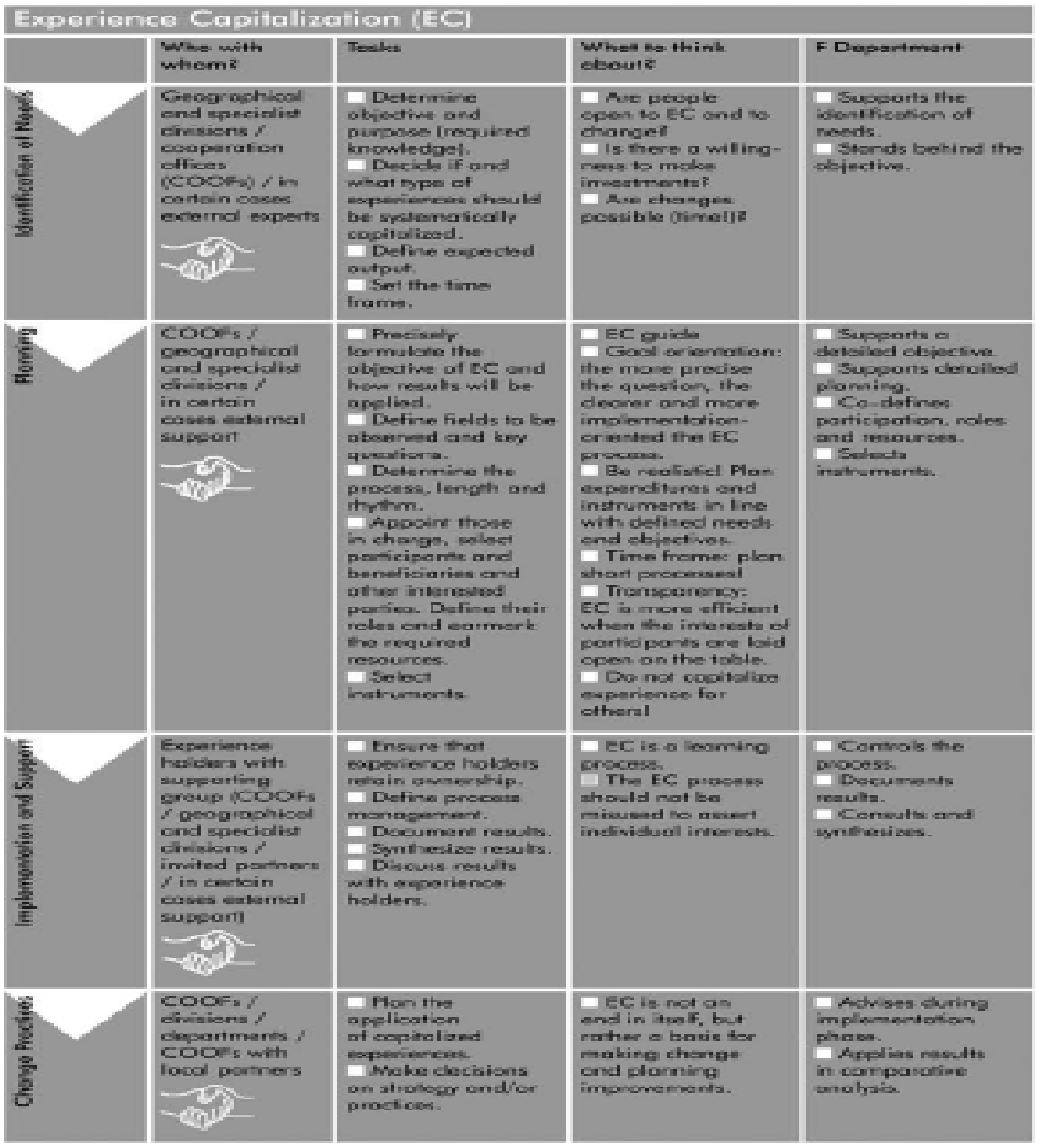
ORGANIZING THE EXPERIENCE CAPITALIZATION PROCESS

STAGES

It makes sense to divide experience capitalization processes into four stages: (see next side)

1. Identification of needs
2. Planning
3. Implementation (and support)
4. Change of practice.

SDC defines experience capitalizations as one of its key processes in a table (overview):



Experience Capitalization (EC)				
	Who with whom?	Tasks	What to think about?	F Department
Identification of Needs	Geographical and specialist divisions / cooperation offices (COOFs) / in certain cases external experts	☐ Determine objective and purpose (required knowledge). ☐ Decide if and what type of experiences should be systematically capitalized. ☐ Define expected output. ☐ Set the time frame.	☐ Are people open to EC and to change? ☐ Is there a willingness to make investments? ☐ Are changes possible (time)?	☐ Supports the identification of needs. ☐ Stands behind the objective.
Planning	COOFs / geographical and specialist divisions / in certain cases external support	☐ Precisely formulate the objective of EC and how results will be applied. ☐ Define fields to be observed and key questions. ☐ Determine the process, length and rhythm. ☐ Appoint those in charge, select participants and beneficiaries and other interested parties. Define their roles and earmark the required resources. ☐ Select instruments.	☐ EC guide ☐ Goal orientation: the more precise the question, the clearer and more implementation-oriented the EC process. ☐ Be realistic! Plan expenditures and instruments in line with defined needs and objectives. ☐ Time frame: plan short processes! ☐ Transparency: EC is more efficient when the interests of participants are laid open on the table. ☐ Do not capitalize experience for others!	☐ Supports a detailed objective. ☐ Supports detailed planning. ☐ Co-defines participation, roles and resources. ☐ Selects instruments.
Implementation and Support	Experience holders with supporting group (COOFs / geographical and specialist divisions / invited partners / in certain cases external support)	☐ Ensure that experience holders retain ownership. ☐ Define process management. ☐ Document results. ☐ Synthesize results. ☐ Discuss results with experience holders.	☐ EC is a learning process. ☐ The EC process should not be misused to assert individual interests.	☐ Controls the process. ☐ Documents results. ☐ Consults and synthesizes.
Change Practices	COOFs / divisions / departments / COOFs with local partners	☐ Plan the application of capitalized experiences. ☐ Make decisions on strategy and/or practices.	☐ EC is not an end in itself, but rather a basis for making change and planning improvements.	☐ Advises during implementation phase. ☐ Applies results in comparative analysis.

It is important to understand that any preliminary and follow-up procedures are part of the experience capitalization process. Without clarification of the need, careful planning and the implementation of results, i.e., without the application of any knowledge gained in a (changed) procedure, experience capitalizations are incomplete. At the

same time, processes should be kept as brief as possible – capitalization does not necessarily improve with longer process times.

Identifying the goal and theme
A prerequisite for the success of experience capitalization is the clear definition of a goal. The theme of experience capitalization must also be defined. Frequently, experience capitalization focuses on very specific aspects identified as needing revision and which are of more interest than large-scale or global topics. The more precisely these are formulated, the more solid will be the basis provided by the experience capitalization process for the planning and implementation of any changes.

Participation
Participants must be selected in accordance with the nature and demands of the respective experience capitalization process and the changes to which it should contribute. Two roles must be coordinated with one another: The experience holders and the process supporters.

Process quality
Regarding planning experience capitalization, there is a contradiction. On one hand, they need to be planned as precisely as possible; on the other, they remain learning processes with a limited scope for planning. Experience capitalizations are unpredictable, dynamic ventures because of their participative structure. By involving various players with diverging interests and perspectives, the objective is to illuminate all the different experiences and assessments rather than reach a consensus. It is not wise to strive for agreement on experiences; on the contrary, the presentation of different experiences should foster discussion among the players and thus enrich the process of experience capitalization.

Timing – experience capitalization and project, i.e. program cycle management
Experience capitalization taps into past experiences in order to adapt future practices and is thus basically future-oriented. In other words, capitalizing on experience is a meaningful process when a need for change exists and when the opportunities to initiate change are actually given. In cases where estimates reveal only a small chance for change to even take place within a program or project, experience capitalization is superfluous. For example, the end of projects and programs is not a suitable moment to carry out experience capitalizations because there is no longer any leeway for changing an unsatisfactory procedure.

By comparison, the most significant opportunities for capitalizing on experiences are given during periods of crisis in medium- and long-term projects and programs, as well as during routine planning. Nevertheless, systematic experience capitalization is not necessarily a part of managing project and program cycles since many of these do well without it. But whenever experience capitalization is realized in the scope of routine project sequences, it should consider and use such significant milestones as planning sessions, mid-year and mid-term reviews, etc. Experience capitalization is always used in organizational learning processes.

Participants and roles
Experience holders: The most important players in experience capitalization processes are the experience holders themselves. Not only do they own the process and its results, they are also concerned with making capitalized experiences available to third parties. Experience holders initiate the experience capitalization process, define its objectives and integrate their knowledge and experiences into the process. Often, they – or at least some of them – are also responsible for implementing capitalized experiences. In other words, they are the ones who change their own practice.

Process supporters: External players who are not necessarily familiar with the contents of an experience capitalization theme can be called in to support the experience holders in the process of capitalizing on their

experiences. They can provide advice on the structure of the experience capitalization process**,** document intermediate and final results, and may even participate in planning the implementation of capitalized experiences.

Other participants: Besides experience holders and process supporters, other functions can be involved in experience capitalization, e.g., external experts who support the validation of consolidated experiences, those responsible for change processes, decision-makers, as well as persons and functions entrusted with transfer and networking tasks.

Source: Guide to Thematic Experience Capitalization. SDC, 2005; available as flyer (short version, 6 pages) and as brochure with case studies (long version, 32 pages). Print versions available from SDC, Thematic and Technical Resources Department, CH 3003 Berne, e-mail: thematicinfo@deza.admin.ch.

SUPPORTING TOOL/RESOURCE 11: KNOWLEDGE DISTILLATION

Whilst there is beauty to be found in expanding an argument, and justification and evidence is required. Do we all need to read all the evidence for everything? We already take so much as read and this process already happens, undertaken by journalists, and also by society as its natural course. This should not replace books or the desire to gaze deeper, but allow us to understand the concepts into which we would like to peer more closely, and not live in ignorance of those we wish to understand but lack the time to research.

Imagine if rather than trying to shroud what we know in know in endless verbosity, we tried to distil important concepts into a sentence or paragraph in which the beauty of truth can be recognised.

GETTING STARTED:

These guidelines are intended to help extract meaningful knowledge from recorded conversations of individuals, or learning events involving groups of people. They assume a further step will be performed to package and publish the distilled knowledge in a manner that will be most useful to potential customers for the knowledge keeping in mind different generational learning preferences.

For each knowledge elicitation interview (refer to the Knowledge Transfer Method: Knowledge Elicitation Interviews guidelines for more details on this step of the process) or learning 'event', document the name of the person or event and provide some context that will help others understand the knowledge and content that is distilled and published.

To proceed with distillation, try a two-part process:

Part 1. <u>Highlight relevant content.</u>
Go through the transcribed manuscript or notes from the event and highlight content that jumps out at you, based on triggers and prompts that caught your attention during the interview or event itself. Highlight these passages of text by underlining or tagging them in some way that they stand out and are easy to find when you come back for a second pass (Part 2.).

Seek out content in the form of relevant experiences, recommendations and stories. An interviewee will often signal 'important' knowledge by their body language and tone of voice when something excites them to talk about it. Of course, when they say something such as, "What I think is really important is…", or similar phrases, these are obvious clues to what they think is important to capture. For the remainder of this document we will refer to these key thoughts or potential learning's as 'nuggets' of relevant knowledge.

Part 2. <u>Review & thoughtfully consider each highlighted passage</u>.
Looking from the point of view of the customer, go back and review each identified passage of text and test to see if it is meaningful—does it seem insightful, or important, maybe even represent new knowledge? If so, copy it 'as is' into a distillation spreadsheet referring to it as 'Transcript Content or Passage'. Use the Basic Distillation Table to capture and gather this information and the other content that follows in this guide. You may also want to refer to the Knowledge Distillation & Extraction Template Sample to get a feel for what this table looks like in practice.

<u>Create a knowledge nugget from each highlighted passage.</u> Nuggets are often not expressed by the interviewee or knowledge source in a form ready to share with others. They are often expressed in the form of a story with a message. This is typically 30 - 90 seconds of speech, which may result in several paragraphs of text. And the message is often conveyed through an example.

So, the content of a particular passage in a transcript of what someone said often requires further distillation or 'editing' to bring out the key thought behind the words that were spoken. This is something that requires thoughtful consideration on the part of the knowledge harvester and is one of the most laborious steps in the knowledge elicitation process. However, it is also the step that adds the most value to knowledge re-use and adaptation by others.

Craft a tagline to raise attention. When we distil and summarize a key thought or learning in nugget form, we also try to extract the broader principle or point that is being made and convey it as succinctly as possible. We refer to this as a 'tagline'. When someone reads the tagline it should catch their attention. The actual nugget provides the thinking and credible evidence behind it.

For example, a tagline that emerged from an interview with a Mergers and Acquisitions expert is, "Time kills all deals." The nugget associated with this is, "We began discussing the potential deal with the company we wanted to acquire 9 months ago. It took my management eight months to decide if the acquisition really fit our growth strategy. When they finally agreed it did, the target we were going after had decided to go with one of our competitors."

In summary, for each distilled knowledge nugget, a knowledge harvester should produce the following and capture these elements in a table or spreadsheet:

- Specific Context - Elicit the context of the passage. The context may be right next to the passage—for example, the interviewee explains a process first, then provides an insight—or it might be elsewhere in the transcript. Either way, capture and write the context for each nugget.
- Transcript Passage – Extract the relevant and specific text or words spoken by the knowledge source in it's raw form.
- Categorization Theme - Identify the major theme or subject area that the nugget refers to or is related to. This will be used to help merge, sort and present the knowledge in several ways, as well as make it easy to find for people. It may be necessary or helpful to also identify sub-themes for the extracted knowledge, depending on how complex the subject area is. The general rule here is if it helps and makes sense, then identify an additional layer of information the nugget relates to or is linked to.
- Tagline - Create a tagline for each nugget that will serve as a caption for the nugget in whatever format is used to package and publish. Its purpose is to catch the attention of someone interested in the knowledge subject or domain. As mentioned above, it will typically be the broader principle or point that is being made by the knowledge source, conveyed as directly and succinctly as possible in a one-liner or catchy phrase.
- Keywords – It is often helpful to extract or identify some keywords that could be used to find this nugget when searching, or link the nugget to other relevant documented knowledge.

BASIC DISTILLATION TABLE

Name of Interviewee or Event:						
Context of Interviewee or Event:						
Date of Interview or Event:			**Interviewed or Collected by:**			
Nugget	**Context**	**Tagline**	**Transcript Passage**	**Keywords**	**Theme**	**Sub-Theme**

When it comes to the practical side of knowledge distillation, there are other elements you will want to capture depending on the sophistication of your process and capture media. In almost all cases, you will want to assign a unique identifier for each nugget to enable tracking and management when it comes to packaging and publishing the content.

If you used video and/or audio to record the interview or event, then you will want to have columns in your spreadsheet to capture the video and audio clip timings of the specific nugget so that it can be easily identified in the media source and extracted to accompany the text. Of course, you will also need this info from the transcript if the audio from the session has been transcribed. See the attached spreadsheet for an example of detailed, working template used for knowledge elicitation distillation.

It is also recommended you share this with the technical support resources you plan to use to help you with this activity – they will probably have some ideas and suggestions for tailoring this to best meet their capabilities.

Lastly, you may want to collect the distillation tables in a common place for use during the knowledge packaging step. It will be helpful to be able to look across and compare/contrast different nuggets from difference sources (interviews and events) when you are dealing with multiple sources of knowledge for a common or similar topic.

KNOWLEDGE DISTILLATION & EXTRACTION TEMPLATE SAMPLE

Unique Number	Theme Name	Sub-Theme Name	Name	Nugget - Key Thought or Learning	TagLine	Transcript Content or Passage	Context	Video Clip	Relevant Question
###	Delivering Buisness	Operational Challenges	Putz 01	Carry something with you at all times to keep you occupied	Patience is a virtue - be prepared to do a lot of waiting	Always carry a book to read or something to keep you occupied during 'wait' time. There are lots of books available for trading or that others have left behind. If you have a hobby you can carry with you, that would be a good idea.	Getting ready to deploy to Iraq for first assignment		4.4f
###	Deployment Preparations	Mental Preparation	Putz 02	Know your job -- others won't	... especially those young military kids, they're looking at the civilians for guidance.	We've got a contract. Let's get people over there and get them to work. You really need to make sure the individual knows his job before he gets over there because the military, especially those young military kids, they're looking at the civilians for guidance. .....they're 18, 19, 20 year old kids. A lot of them are reservists who've never gone through this before.	Getting ready to deploy to Iraq for first assignment	00:41:0 3:02 to 00:41:4 0:09	3.2b

Source: This tool is based on the work of Kent Greenes (www.greenesconsulting.com) and the KM Teams at British Petroleum and SAIC from 1995 to 2006.

SUPPORTING TOOL/RESOURCE 12: ENTERPRISE COLLABORATION SOLUTIONS

An enterprise collaboration solution is a group productivity product vs. a personal productivity product and as such large scale adoption is critical to success. It can only benefit the group if used by the group. Enterprise collaboration solutions include Web 2:0 technologies such as wikis, blogs and social networking that are deployed by businesses for their ability to improve decision cycle times and organizational effectiveness. However, results produced are only to the extent the solution is adopted by users. Adoption occurs when users decide for themselves that the solution provides them with a net benefit, when they want to use the product.

Approach to Implementation

The following six steps to ensure successful adoption of the solution are deemed a best practice.

1. Encourage a range of use cases. Select 3 to 5 lead use cases to initially implement this solution. A mix of company-wide and group-specific is recommended. Company-wide use cases deliver a broad exposure within the company and group specific generate deep business value. Examples:
    a. Company-wide: intranet; company directory; new hire on-boarding; competitive intelligence
    b. Group specific: project teams; departments or business units; professional communities; social communities; customer or partner extranets.

2. Recruit energetic champions. Look for individuals to help drive adoption within the firm. Champions should connect to each other through their own dedicated social network or blog and through regularly scheduled conference calls. Common characteristics of champions include:
    a. Well networked within the company (professionally and/or socially)
    b. Personally enthusiastic and willing to take a stand
    c. Interested in the new uses of technology (though not necessarily tech-savvy)
    d. Well respected within their areas of influence (not necessarily senior rank).

3. Launch with hands-on activities for new users. Select the initial cases for ease of use with self evident benefits to users. Champions should introduce the solution in a hands-on way that encourages colleagues to get their 'feet wet' immediately. Examples that companies have used:
    a. If a social networking solution then get everyone in the firm to complete a personal profile
    b. Game incentive such as sponsoring a contest with token prizes for the first people who can find 20 specified pieces of information in the collaboration solution.

4. Focus on repeated activities. Route repeated activities through the solution – it is only when people use it in everyday work processes that the solution will be adopted. Examples:
    a. Post pre meeting materials and meeting minutes in the collaboration solution wiki (or other) pages. (This in itself produces efficiencies making it easy for participants to obtain meeting materials and decisions made in previous meetings).
    b. Post standard documentation
    c. Create question and answer forums about products, customers, processes etc.

5. Complement existing systems of record. The more tightly the collaboration solution is integrated into the daily flow of work, the more value it delivers. Make sure that the solution integrates with other systems that the company uses for core business activities. For example: use links and RSS feeds to integrate with the company's intranet and other legacy internal systems.

6. Leverage the community. Use the solution for posting ideas, posing questions, best practice tips etc.

Source: To test one of these products on the market: www.socialtect.com/prpducts/freetrial.php.

SUPPORTING TOOL/RESOURCE 13: JOB ROTATION

Job rotation, together with the development of job variety and job enlargement, is a common strategy of organizations from the point of view of workplace health and the improvement of productivity. But what do we know about it? There are still many questions that need to be asked: Is job rotation a way of preventing musculoskeletal disorders and disabilities (MSDs)? Does job rotation lead to increased job satisfaction or quality or productivity? Are there disadvantages of job rotation?

Job Rotation implies systematic movement of employees form one job to the other. Job remains unchanged but employees performing them shift from one job to the other. This is described as job rotation. With job rotation, an employee is given an opportunity to perform different jobs, which enriches his skills, experience and ability to perform different jobs. However, the jobs offered under job rotation are more or less of the same nature. As a result, he will be skilled to a new job which is more or less similar to his earlier job.

What:

A formal program in which a person or group of persons experiences a variety of tasks and responsibilities in several different positions. Typically designed to develop an individual's knowledge base to prepare him or her for positions of increasing responsibility and scope.

Why:

- Can develop a pool of qualified applicants for positions of increasing responsibility and scope
- Decreases the impact of "brain drain" when individuals leave key positions

When:

- Career development requires knowledge and experience in several different areas or programs
- On the job experience is the most effective method of knowledge transfer

How:

Determine what knowledge needs to be shared. Develop formal program that assures individuals will experience full variety of identified knowledge and tasks. Clarify requirements for successful completion of program.

The Do's & Don'ts:

- Program should have clearly defined requirements for acceptance and successful completion
- Program purpose and goals should be clearly communicated to all potential participants
- Program should be available to all who qualify for acceptance

Example: Areas that might use a job rotation program include: HR management team; Agency management teams; Expert programming positions

Job Rotation Implementation Plan:

Job rotation is the systematic movement of employees from job to job within an organization. Rotation programs are a respected means for learning how other functions operate, and that such knowledge is essential to becoming a better business. However, lack of time and resources prohibits many HR professionals from embarking on rotation programs.

Step 1:

Typically, formal rotation programs offer customized assignments to promising employees in an effort to give them a view of the entire business. Assignments usually run for a year or more. Rotation programs can vary in size and formality, depending on the organization.

There are many reasons for implementing a job rotation system, including the potential for increased product quality, giving employees the opportunity to explore alternative career paths, and perhaps most importantly, preventing stagnation and job boredom.

The best performing employees in organizations (those who receive the highest salaries and are promoted most rapidly) experience job rotation relatively early in their careers. People who rotate through a succession of jobs find it a valuable way for them to acquire the variety of skills they needed to be successful. So, if you are offered job rotation, accept it.

Step 2:

Sustaining employee interest in a single job is not easy, which is perhaps why retention poses such a big challenge for businesses, even in a slow economy. Employees outgrow their jobs quickly and it may not be possible for employers to provide enough diversity within a career path to maintain employee interest in the job.

This is where job rotation steps in to provide job enrichment from an employee's perspective. Employees who participate in job rotation programs develop a wide range of skills, are more adaptable to changes in jobs and career, and are generally more engaged and satisfied with their jobs when compared to workers who specialize in a single skill set.

Step 3:

As everything, there is a downside to job rotation programs that cannot be ignored. Job rotation may increase the workload and decrease productivity for the rotating employee and for other employees who must take up the slack. This may result in a disruption of work flow and a focus by line managers on short-term solutions to correct these problems. In addition, line managers may be reluctant to allow high-performing employees to participate in job rotation programs. Finally, there are costs associated with the learning curve on new jobs, including time spent learning, training costs and errors that employees often make while learning a new job.

This is why preparation is a key to the success of any job rotation program. The successful implementation of a job rotation program requires an understanding of the costs and benefits of implementation, as well as agreement and teamwork from all parts of the organization, including senior management, human resources and line managers.

Source

How to Implement an Effective Job Rotation Program in your Company | eHow.com
http://www.ehow.com/how_4763302_effective-job-rotation-program-company.html#ixzz0yCXBIDfa
http://www.ehow.com/how_4763302_effective-job-rotation-program-company.html

SUPPORTING TOOL/RESOURCE 14: JOB SHADOWING

What:
A less experienced performer is paired up with an experienced employee to transfer knowledge. The experienced employee is asked to share knowledge (and perhaps hands-on practice) in dealing with everyday problems in addition to the most difficult situations he or she has faced on the job.

Why:
- Provides "real life" exposure to the job
- Could be offered to several individuals; expanding the organization's overall knowledge
- Can be helpful in succession and workforce planning efforts

When:
- To allow opportunity for individual(s) to learn about a particular occupation
- Exposure to the job itself can enhance knowledge transfer, particularly with effective coaching

How:
Determine what knowledge needs to be shared. Identify experienced employee who possesses competency in coaching and knowledge transfer. Identify individual(s) who will shadow the experienced employee. Establish timeline and knowledge transfer goals.

The Do's & Don'ts:
- Job Shadowing should not be used as a comprehensive on-the-job training program
- Clarify roles and expectations up front
- Avoid pairing less-experienced employees with slightly more experienced employees
- Use debriefing sessions for coaching opportunities
- Discuss educational requirements; the career ladder for the job and related positions

Example: Attending strategic planning meetings with experienced employee; observing experienced employee for a day on the job.

Tips for job shadowing
- Share a little history of the job
- Talk about the roles & responsibilities
- Describe the personal attributes that match the job
- Discuss educational requirements, the career ladder for the job and related positions
- Describe your experience, likes, dislikes

Source:
http://www.ischool.utoronto.ca/alumni-careers/job-shadowing-program

Research companies and careers through job shadowing
http://www.quintcareers.com/job_shadowing.html

SUPPORTING TOOL/RESOURCE 15: KNOWLEDGE CAFÉ

This is a type of business meeting or organizational workshop which aims to provide an open and creative conversation on a topic of mutual interest to surface their collective knowledge, share ideas and insights, and gain a deeper understanding of the subject and the issues involved. Elizabeth Lank developed the concept creating a physical and mobile cafe area in the 1990s and it has been popularized in recent years by David Gurteen, a UK-based consultant specializing in knowledge management. The knowledge café begins with the participants seated in a circle of chairs (or concentric circles of chairs if the group is large or the room is small). It is led by a facilitator, who begins by explaining the purpose of knowledge cafés and the role of conversation in business life. The facilitator then introduces the café topic and poses one or two key open-ended questions. For example, if the topic is knowledge sharing, the question for the group might be: "What are the barriers to knowledge sharing in an organization, and how do you overcome them?"

GETTING STARTED:

When the introduction session is complete, the group breaks into small groups, with about five people in each group. Each small group discusses the questions for about 45 minutes. The small group discussions are not led by a facilitator, and no summary of the discussion is captured for subsequent feedback to the large group.

Participants then return to the circle and the facilitator leads the group through the final 45 minute session, in which people reflect on the small group discussions and share any thoughts, insights and ideas on the topic that may have emerged.

A knowledge café is most effective with between 15 and 50 participants. Thirty is an ideal number of people. If there are more than 50 participants it is usually necessary to employ microphones for the large group conversation, and this tends to inhibit the flow of the conversation. One to two hours is required for a worthwhile knowledge café. The only hard and fast rule is that the meeting is conducted in such a way that most of the time is spent in conversation. Presentations and feedback sessions have no place in knowledge cafés.

CAFÉ GUIDELINES

Clarify the Purpose

Pay attention early to the reason why you are bringing people together. Knowing the purpose of your meeting enables you to consider which participants need to be there and what parameters are important to achieve your purpose.

Create a Hospitable Space

Café hosts around the world emphasize the power and importance of creating a hospitable space – one that feels safe and inviting. When people feel comfortable to be themselves, they do their most creative thinking, speaking, and listening. In particular, consider how your invitation and your physical set-up contribute to creating a welcoming atmosphere.

Explore Questions that Matter

Finding and framing questions that matter to those who are participating in your Café is an area where thought and attention can produce profound results. Your Café may only explore a single question, or several questions may be developed to support a logical progression of discovery throughout several rounds of dialogue. In many cases, Café conversations are as much about discovering and exploring powerful questions as they are about finding effective solutions.

Encourage Everyone's Contribution

As leaders we are increasingly aware of the importance of participation, but most people don't only want to participate, they want to actively contribute to making a difference. It is important to encourage everyone in your meeting to contribute their ideas and perspectives, while also allowing anyone who wants to participate by simply listening to do so.

Connect Diverse Perspectives

The opportunity to move between tables, meet new people, actively contribute your thinking, and link the essence of your discoveries to ever-widening circles of thought is one of the distinguishing characteristics of the Café. As participants carry key ideas or themes to new tables, they exchange perspectives, greatly enriching the possibility for surprising new insights.

Listen for Insights and Share Discoveries

Through practicing shared listening and paying attention to themes, patterns and insights, we begin to sense a connection to the larger whole. After several rounds of conversation, it is helpful to engage in a plenary conversation. This offers the entire group an opportunity to connect the overall themes or questions that are now present.

Café Conversations at a Glance

- Seat four or five people at small Café-style tables or in conversation clusters.
- Set up progressive (usually three) rounds of conversation of approximately 20-30 minutes each.
- Questions or issues that genuinely matter to your life, work or community are engaged while other small groups explore similar questions at nearby tables.
- Encourage both table hosts and members to write, doodle and draw key ideas on their tablecloths or to note key ideas on large index cards or placemats in the center of the group.
- Upon completing the initial round of conversation, ask one person to remain at the table as the "host" while the others serve as travelers or "ambassadors of meaning." The travelers carry key ideas, themes and questions into their new conversations.
- Ask the table host to welcome the new guests and briefly share the main ideas, themes and questions of the initial conversation. Encourage guests to link and connect ideas coming from their previous table conversations – listening carefully and building on each other's contributions.
- By providing opportunities for people to move in several rounds of conversation, ideas, questions, and themes begin to link and connect. At the end of the second round, all of the tables or conversation clusters in the room will be cross-pollinated with insights from prior conversations.
- In the third round of conversation, people can return to their home (original) tables to synthesize their discoveries, or they may continue traveling to new tables, leaving the same or a new host at the table. Sometimes a new question that helps deepen the exploration is asked for the third round of conversation.
- After several rounds of conversation, initiate a period of sharing discoveries and insights in a whole group conversation. It is in these town meeting-style conversations that patterns can be identified, collective knowledge grows, and possibilities for action emerge. Once you know what you want to achieve and the amount of time you have to work with, you can decide the appropriate number and length of conversation rounds, the most effective use of questions and the most interesting ways to connect and cross-pollinate ideas.

The Importance of the Café Question(s)

The questions(s) you choose or that participants discover during a Café conversation are critical to its success. Your Café may explore a single question or several questions may be developed to support a logical progression of discovery throughout several rounds of dialogue.

Keep in mind that…

- Well-crafted questions attract energy and focus our attention to what really counts. Experienced Café hosts recommend posing open-ended questions – the kind that don't have yes or no answers.
- Good questions need not imply immediate action steps or problem solving. They should invite inquiry and discovery vs. advocacy and advantage.
- You'll know you have a good question when it continues to surface new ideas and possibilities.
- Bounce possible questions off of key people who will be participating to see if they sustain interest and energy.

How to Create a Café Ambiance

Whether you are convening several dozen or several hundred people, it is essential to create an environment that evokes a feeling of both informality and intimacy. When your guests arrive they should know immediately that this is no ordinary meeting.

- If possible, select a space with natural light and an outdoor view to create a more welcoming atmosphere.
- Make the space look like an actual Café, with small tables that seat four or five people. Less than four at a table may not provide enough diversity of perspectives, more than five limits the amount of personal interaction.
- Arrange the Cafe tables in a staggered, random fashion rather than in neat rows. Tables in a sidewalk café after it has been open for a few hours look relaxed and inviting.

Use colourful tablecloths and a small vase of flowers on each table. If the venue allows it add a candle to each table. Place plants or greenery around the room.

- Place at least two large sheets of paper over each tablecloth along with a mug or wineglass filled with colourful markers. Paper and pens encourage scribbling, drawing, and connecting ideas. In this way people will jot down ideas as they emerge.
- Put one additional Café table in the front of the room for the Host's and any presenter's material
- Consider displaying art or adding posters to the walls (as simple as flip chart sheets with quotes), and play music as people arrive and you welcome them.
- To honour the tradition of community and hospitality provide beverages and snacks. A Café isn't complete without food and refreshments!

I'm the Café Host, what do I do?

The job of the Café Host is to see that the six guidelines for dialogue and engagement are put into action. It is not the specific form, but living the spirit of the guidelines that counts. Hosting a Café requires thoughtfulness, artistry and care. The Café Host can make the difference between an interesting conversation and no conversation at all.

- Work with the planning team to determine the purpose of the Café and decide who should be invited to the gathering.
- Name your Café in a way appropriate to its purpose, for example: Leadership Café; Knowledge Café; Strategy Café; Discovery Café, etc.
- Help frame the invitation.
- Work with others to create a comfortable Café environment.
- Welcome the participants as they enter.
- Explain the purpose of the gathering.

- Pose the question or themes for rounds of conversation and make sure that the question is visible to everyone on an overhead, flip chart or on cards at each table.
- Explain the Café guidelines and Café Etiquette and post them on an overhead, an easel sheet or on cards at each table.
- Explain how the logistics of the Café will work, including the role of the Table Host (the person who will volunteer to remain at the end of the first round and welcome newcomers to their table).
- During the conversation, move among the tables.
- Encourage everyone to participate.
- Remind people to note key ideas, doodle and draw.
- Let people know in a gentle way when it's time to move and begin a new round of conversation.
- Make sure key insights are recorded visually or are gathered and posted if possible.
- Be creative in adapting the six Café guidelines to meet the unique needs of your situation.

I'm a Table Host, what do I do?

- Remind people at your table to jot down key connections, ideas, discoveries, and deeper questions as they emerge.
- Remain at the table when others leave and welcome travellers from other tables.
- Briefly share key insights from the prior conversation so others can link and build using ideas from their respective tables.

What are Café Conversations?

Café Conversations are an easy-to-use method for creating a living network of collaborative dialogue around questions that matter in service of the real work. Cafés in business have been named in many ways to meet specific goals, including Creative Cafés, Knowledge Cafés, Strategy Cafés, Leadership Cafés, Marketing Cafés, and Product Development Cafés. Most Café conversations are based on the principles and format developed by The World Café (seewww.theworldcafe.com), a growing global movement to support conversations that matter in corporate, government and community settings around the world.

Café Conversations are also a provocative metaphor enabling us to see new ways to make a difference in our lives and work. The power of conversation is so invisible and natural that we usually overlook it. For example, consider all the learning and action choices that occur as people move from one conversation to another both inside the organization and outside, with suppliers, customers and others in the larger community. What if we considered all of these conversations as one big dynamic Café, with each of the job functions as a table in a larger network of living conversations, which is the core process for sharing our collective knowledge and shaping our future? Once we become aware of the power of conversation as a key business process, we can use it more effectively for our mutual benefit.

The Café is built on the assumption that people already have within them the wisdom and creativity to confront even the most difficult challenges. Given the appropriate context and focus, it is possible to access and use this deeper knowledge about what's important.

Source

The World Café. Free to copy and distribute with acknowledgement & a link to: http://www.theworldcafe.com

David Gurteen and Dan Remenyi
http://www.slideshare.net/dgurteen/introduction-to-the-knowledge-cafe

Useful Links and Resources
There is also an online community for World Cafe practitioners and it is a great place to ask for ideas and advice.
http://www.theworldcafecommunity.net/

The original of this document: http://www.theworldcafe.com/articles/cafetogo.pdf

World Cafe materials in different languages: http://www.theworldcafe.com/translations.htm
or further detailed background information, including Café stories, additional hosting tips, supporting articles, and links to related Café and dialogue initiatives, please visit http://www.theworldcafe.com

SUPPORTING TOOL/RESOURCE 16: KNOWLEDGE FAIR

Knowledge fair is an event designed to showcase information about an organization or a topic. It includes methods such as speakers, demonstrations, booths displaying information, exhibition boards, workshops, videos, informal corners, open space, etc. A large amount of information can be made available and attendees can focus specifically on what they are interested in learning. Attendees can interact directly with the presenters, getting immediate answers to their specific questions. They also can establish contacts for further exploration of topics if needed.

Attendees often network with one another and booth developers often strengthen their teamwork. Knowledge fairs also provide opportunities to draw attention to best practices and recognize employee and team achievements.

Knowledge fair is particularly recommended when there is a lot of information to share with a lot of people and participants need a broader perspective, as well as an opportunity to interact on a one-to-one basis on specific topics. Knowledge fair is an alternative to formal presentations when more interactive experiences are desirable.

Knowledge fair is also pertinent if the organization is to adopt and sustain horizontal modes of operating and co-operating. Such a method can then foster a new organizational dynamic.

GETTING STARTED:

- Get top level support and publicize the fair widely.
- Put the fair where there is a lot of foot traffic, e.g. in the atrium of the organization. Don't accept a decision to put the fair in an out-of-the way space.
- Get common displays for booths so as to convey an image of diversity with integration.
- Be realistic about how much time it takes for presenters to prepare and display.
- Don't plan in too much detail for the actual booths - presenters can self-organize within a common framework.
- Don't be too serious - a fair can be fun!

BENEFITS OF KNOWLEDGE FAIRS:

A large amount of information can be made available and attendees can focus specifically on what they are interested in learning. Attendees can interact directly with the presenters, getting immediate answers to their specific questions. They also can establish contacts for further exploration of topics if needed.

Attendees often network with one another and booth developers' often strengthen their teamwork. Knowledge fairs also provide opportunities to draw attention to best practices and recognize employee and team achievements.
Knowledge fair is particularly recommended when there is a lot of information to share with a lot of people and participants need a broader perspective, as well as an opportunity to interact on a one-on-one basis on specific topics. Knowledge fair is an alternative to traditional presentations when more interactive experiences are desirable.
A knowledge fait is also pertinent if the organization is to adopt and sustain horizontal modes of operating and co-operating. Such a method can then foster a new organizational dynamic.

GUIDELINES

Thematic focus: Clarify why you are staging a Knowledge Fair and what theme it is focused on. Make sure the theme is valid and supported by stakeholders from all levels of the organization. The thematic focus needs to be both accurate and open: There needs to be a focus and room for innovation and surprise.

Nature of the fair: Be clear about the nature of a fair - there is a common theme, a broad variety of presenters and a multi-faceted public with diverse interests. A fair offers broad opportunities for getting information, for

making contacts, for interaction and for agreeing on follow-up activities. Be aware about the impact the venue may have on the event.

Target audience: Identify the target audience and tailor the knowledge fair to it. Market the event appropriately to the target audience. Take into account the cultural aspects for the audience(s) identified. Analyze the formal/informal mood you wish to and can achieve with the audience(s). Be open for surprises: There might be visitors that do not correspond to the expected profile.

Commitment: Get commitment from key stakeholders and involve them in appropriate ways at the planning stage and in execution. The values of the organization have an impact on the event.

Language: Decide if you want a multilingual event and accordingly prepare space for the different languages, decide about necessary translations. Be aware of budget impacts.

Preparation: Do not underestimate the time and resources required. 12 months are a minimum; 18 to 24 months are a more realistic frame. Decide about infrastructure and logistics provided; communicate it clearly to all presenters. Provide distance coaching to all presenters; half of them will need it.

Publicity: Publicize the event before, during and after. Provide a feedback mechanism for fair participants. Identify in advance how to measure impact in relation to the audience(s) identified. Capture the process – its ups and downs could help others later.

Interaction: Include a broad variety of interactive forms in the fair: Exhibition boards with attractive, but silent information; Market stands with "sellers" and "buyers"; short presentations with room for interaction; workshops with more formal presentations or experimental learning; video-corners or showrooms; an arena for innovative and crazy ideas; coffee corners with drinks and snacks and comfortable seating arrangements.

Sources:

http://www.cs.state.ny.us/successionplanning/workgroups/knowledgemanagement/knowledgefairs.html

Stephen Denning, *The Springboard: How Storytelling Ignites Action in Knowledge-Era Organizations*, Butterworth Heinemann, Boston, London: 2000. http://www.stevedenning.com/knowledge_fair.html

Useful Links and References

Collins, B., R. Diez de Medina and A. Trebilcock. 2005. The culture of knowledge fair: lessons from an international organization (ILO).
http://www.km4dev.org/journal/index.php/km4dj/article/viewFile/38/54
http://www.daretoshare.ch/en/Home/Dare_to_Share_Fair_2004
http://www.waterfair.org/content.spring?title=About+the+Fair
http://knowledge.usaid.gov/kmfair.html

SUPPORTING TOOL/RESOURCE 17: KNOWLEDGE NETWORK

WHAT IS A KNOWLEDGE NETWORK?

While it is difficult to come up with a good definition of Knowledge Networks, the following quotes help to grasp the nature of a knowledge network:

⇒ A process of human and computer networking where people share information, knowledge and experiences to develop new knowledge for handling new situations.

⇒ A different way of working that is about openness and collaboration across departmental, organizational and national boundaries and about building multiple relationships for mutual benefit.

⇒ The process of combining and recombining on another's knowledge, experiences, talents, skills, capabilities and aspirations in ever-changing profitable patterns.

⇒ Networks, by definition, connect everyone to everyone. Hierarchies, by definition, do not; rather they create formal channels of communication and authority. Networks operate informally with few rules, they depend on trust.

CHARACTERISTICS OF KNOWLEDGE NETWORKS

The key characteristics of a knowledge network are:

⇒ Knowledge networks are not just about providing access to data and documents: they are about interconnecting the social network of people who produced the knowledge; people are not necessarily related to each other, join through mouth to mouth propaganda; interaction based on exchange relationships: exchange of mutual services, obligations and social networks; the more members the better.

⇒ Individuals often belong to several networks and take different roles in them – in some they are more central than in others.

⇒ Consequently different networks are interconnected and there is often no discernible boundary between them. The nature and strengths of these connections and links varies over time and are difficult to map.

⇒ Non-hierarchical structure; self-organizing and self-regulating; network as such is normally not a topic of discussion.

⇒ Knowledge flows both on deliberately chosen and on unanticipated paths.

COMPONENTS OF KNOWLEDGE NETWORKS

⇒ Nodes and links (structural components): Nodes are the focal points (individuals or teams) for activities or formal organizational processes. Links provide paths for communication, knowledge flows and for building of personal relationships. The pattern of nodes and links continually changes. The intensity of the individual links resp. connections between nodes varies. Some links/connections may be more circular with obvious hubs others may be more diffuse and not easily traceable.

⇒ (Informal) inner structure with a smaller core of very active members (e.g. founding members) and many passive members around.

⇒ Member-generated content (e.g. profiles, ratings, documents)

⇒ Member-to-member interaction (e.g. discussion forums); one-to-one and multiple conversations; asynchronously or synchronously)

⇒ Events (e.g. expert seminars)

⇒ Outreach (e.g. newsletters)

NETWORKS VS. COMMUNITIES OF PRACTICE (COP)

In literature and in real life it is often difficult to clearly differentiate between networks and communities of practice in the framework of knowledge management.

There are some shared characteristics:

⇒ Both are hybrid forms of social interaction, developed by humans to pursue a common goal.

⇒ Communities and networks are characterized by the exchange of information. Both claim to generate individual as well as collective knowledge.

⇒ ICT plays in both cases a major role, because members no longer meet only at physical places.

⇒ Both are based on the understanding that a) knowledge is produced and actively constructed through the shared understandings that emerge through social interactions, where through mutual influence shared constructions of reality are created, and b) as opposed to document management that can be conducted in a more or less automatic manner, knowledge management cannot be accomplished without involving people as well as tangible content.

There are, however, also some differences as the following two descriptions show:

Networks: Non-hierarchical structure; self-organizing and self-regulating, people might come from very different settings and backgrounds but have a shared interest in a given topic; mostly free membership/membership by choice; interaction based on exchange relationships; exchange of mutual services and obligations; diffuse boundaries, very difficult to map; network as such is normally not a topic of discussion; large membership base is thought to allow for a lot of heterogeneous input; the more perspectives, the more criticism, the more innovative and valid is the result. The large number of members, the lack of strong leadership and clear roles make it easier for networks to substitute lost members; networks form because people need one another to reach common goals;

Communities: Partly hierarchical with clearly defined roles and responsibilities; people who are faced with same problems and issues (task-oriented); not constrained by typical geographic, business unit, or functional boundaries but rather by common tasks, contexts, and interests; Interactions based on exchange relationships (experiences, tips, knowledge in order to enhance learning and create a shared value for the group) and on a community feeling, solidarity, coherence and identity; clear boundaries; membership can be defined by specific criteria; community exists as a topic and forms part of the members' identity; In general coherence and feeling of identity within a community is stronger. The degree of organization is higher whereas networks in their structure follow more the anarchistic approach and focus on fuzzy, unanticipated growth.

Source:
A comprehensive book about establishing and managing knowledge networks (can be downloaded for free from the SKAT webpage www.skat.ch/publications)

Egger U. et al., Working the Net- A Management Guide for Formal Networks, 2006, gtz German Technological Cooperation, 140pp.

SUPPORTING TOOL/RESOURCE 18: BLOGS

PURPOSE

A Web log, or *blog* as it is commonly known, is used to broadcast information, knowledge or other content created by a single author across an entire organization or the Internet.

DESCRIPTION

Blogs are simple Web pages designed for frequent updates. They require little or no software coding, and little or no cost. They are usually written from a personal or individual perspective on a Web site available to anyone who has access.

In a blog the author enters her thoughts, perspective, information or knowledge onto a Web page, and the postings are displayed in reverse chronological order. Each entry, or post, has its own unique Internet address. And each post can contain links to other posts or sites. Readers of a blog can post comments and thoughts but cannot change the original. All of the posted content remains in searchable archive.

It's important to note the difference between purely personal blogging (i.e. a chronology of someone's pregnancy on the web or a cancer patient's documentation) verses business blogging. Although blogs are by their nature personal accounts, in the business world they are intended to focus on business issues and other topics relevant to an organization.

A blog's accessibility promotes transparency. Similar to a Wiki, content in a blog is not validated except through an informal process of peer review. Since anyone can read a blog that is posted on the Internet or an Intranet, the author knows that his content will potentially be subject to the scrutiny of experts on the topic they have written about. This often helps keep bloggers 'honest' about their contributions.

From a knowledge perspective, one of the more useful aspects of a blog is the personal insight about the author that they provide. While a reader should not necessarily believe everything they read in a blog, they may gain important context about the author that will help them make sense of any knowledge the author may want to share and transfer.

BENEFITS OF BLOGS:

In 2005, Bill Ives and Amanda Watlington interviewed over 70 prominent business bloggers and used their findings to write one of the most read guides for business blogging [(1)]. In their view, blogs are more lively and personal than normal publication, and more permanent and accessible than normal conversation.

"Blogs provide a transparent virtual space for:

⇒ Creation – publishing content within a personal voice
⇒ Collection – managing personal content in a searchable archive
⇒ Context – applying commentary to content you manage
⇒ Connection – discovering others with your interests
⇒ Conversation – engaging in dialogs on an organizational or global basis
⇒ Community – building networks around shared themes
⇒ Collaboration – finding new business partners and increasing team work within organizations

…and they lower the barriers to entering the Web further reducing the cost of communication."

COMMON BUSINESS APPLICATIONS

Blogs can be used to track the progress of a project, gather and post information about products, services, and competitors, and share ideas among geographically dispersed individuals.

Stewart Sutton, head of Collaboration and Knowledge Management at The Aerospace Corporation, observes the use of blogs in his service organization for two types of enterprise communications: (1) Personal Diary / Editorial - the typical use you see on public blogs. The focus of this style of blog is to communicate the opinion of an individual within the enterprise; (2) Project Log - this is an alternative use of the blog. An individual (or group) will assume the duty of making periodic entries into the Blog Log. According to Sutton, "With blogs that have good "feedback" features, the project blog is a pretty good approach to collaboration."

Blogs internal to an organization provide written, time-stamped, and searchable documentation. R&D organizations, for example, can track the growth and development of ideas in a single location, making them great tools for recording the development of a patent or the history and progress of research projects.

Karl Kapp [(2)] observes that the value of blogs is accelerating their adoption in many companies and organizations. "At IBM, for example, blogs are used to discuss software development projects and business strategies. Senior level consultants post information about client experiences and problem resolutions, which new employees can review and use in their own projects. In 2005 IBM encouraged its more than 320,000 employees to begin blogging, and many IBM employees now have public blogs.

At some DaimlerChrysler plants, managers use blogs to discuss problems, share information, and keep a record of solutions. Employees can then search through the blogs and find the information they are looking for concerning a certain production technique, design idea, or specification.

At the Dutch technology company, Macaw, up to 90 percent of its employees blog to share knowledge about technical issues and resolutions. This creates a vast store of knowledge that is used by new and experienced employees alike. The availability of this information has helped to streamline processes and make information more accessible at Macaw. Dr. Pepper/7 UP, Verizon, and Hartford Financial Services Group are just a few other examples of companies that have internal blogs."

MULTIGENERATIONAL CONSIDERATIONS

Kapp has identified some important aspects of generational differences and preferences in the application of blogs. "Blogs' inherently open, anarchic nature may be a bit unsettling for some boomers, but their simplicity and informality are what makes them so appealing to Gen Yers—and are the reason their rapid and widespread adoption was possible.

Gamers will often turn to internal blogs before looking for more "formal" channels of information. According to Technorati, a Web site that tracks blog information, "There are about 75,000 new blogs a day. Bloggers—people who write Weblogs—update their Weblogs regularly; there are about 1.2 million posts daily, or about 50,000 blog updates an hour."

GETTING STARTED:

Instead of re-inventing what many people have already created as 'how to' guides for creating a Blog, we recommend you read 'How to Start a Blog' which can be found online at http://www.wikihow.com/Start-a-Blog. It walks you through 10 easy steps from finding the right software to creating your first post. It also provides handy tips and hints to keep you from making any major mistakes.

Check out this blog from Jessica Lipnack, which shares Wisdom of Blogs that she's gathered to help people understand and make sense of this capability: http://www.netage.com/endlessknots/

GOOD PRACTICES:

⇒ IBM bloggers used a Wiki to create a set of blogging guidelines that would protect both IBM bloggers and the company itself as the company formally entered the "blogosphere." The guidelines were endorsed by IBM and initially posted internally, then their bloggers shared them with the world. The guidelines from IBM can be found at: http://www.ibm.com/blogs/zz/en/guidelines.html .

⇒ Refer to the references below for some other useful blog policy resources.

⇒ As is the case for many of the newer communication and social media tools, asking a younger staff member for help in how and when to Blog (Kent, need consistency in when you capitalize and don'e capitalize Blog.) is a good practice. You never know, but the behavior you exhibit by asking for may open up the floodgates for more frequent and effective knowledge transfer.

Source:
Chris Boorman, Knowledge Transfer, Best Practices, Training and Certification, 2010.

Others cited within the context.

Useful Links and Resources
(1) Bill Ives and Amanda Watlington, Business Blogs: A Practical Guide, 2005, ISBN# 0-9766180-0-1

(2) Karl Kapp, Techniques and Tools for Transferring Know-How from Boomers to Gamers

Blog Policy resources are:

- David Weinberger's Disclosure Statement
  http://www.hyperorg.com/blogger/misc/disclosure.html

- Tom Reynold's comprehensive blog policy post: "How to Blog and Not Lose Your Job"
  http://randomreality.blogware.com/blog/_archives/2005/3/17/443453.html

- List of blog policies collected by Lisa Williams http://del.icio.us/lisatmh/blog_policies

SUPPORTING TOOL/RESOURCE 19: INSTANT MESSAGING

PURPOSE

Instant Messaging (IM) enables people to instantly share and transfer specific knowledge by sending text messages to each other in real time.

DESCRIPTION

IM is a form of real-time communication between two or more people based on typed text. The text is conveyed via computers connected over a network such as the Internet. People often refer to this as 'chatting online' since a typical session involves people sending each other very short, sharp messages in dialogue form. Because it allows participants to see who is connected or online in their network at any moment in time, it can be a powerful enabler for one-on-one informal learning when it's needed verses when people happen to available.

IM has several advantages over e-mail:

⇒ Interactions and conversations occur in real time
⇒ It provides the ability to see if the person is online and open to receiving messages.
⇒ It provides a quicker response than e-mail.

With IM, you can keep a list of people you interact with. You can IM with anyone on your buddy list or contact list as long as that person is online. You type messages to each other into a small window that shows up on both of your screens.

Most IM programs provide these features:

⇒ Instant messages - Send notes back and forth with a co-worker or friend who is online
⇒ Chat - Create a chat room with friends or co-workers
⇒ Web links - Share links to your favourite Web sites
⇒ Video - Send and view videos, and chat face to face with co-workers
⇒ Images - Look at an image stored on a colleague's or friend's computer
⇒ Files - Share files by sending them directly to your co-workers or friends
⇒ Talk - Use the Internet instead of a phone to actually talk with others
⇒ Streaming content - Real-time or near-real-time stock quotes and news
⇒ Mobile capabilities - Send instant messages from your cell phone

GENERATIONAL CONSIDERATIONS

"Social software uniquely encourages people to learn together but also provides a level of flexibility that allows each individual to retain control of their time, place, activity and individuality," writes Jon Cardus in the Power of the Collective. These are all elements that are important to Gen Yer's, and probably many other generations of people in the workplace.

"While many boomers still prefer face-to-face communication, most gamers consistently choose IM over e-mail in a wide array of contexts," writes Karl Kapp in his paper titled Techniques and Tools for Transferring Know-How from Boomers to Gamers.

"In fact, gamers in a focus group defined e-mail as "something you use to talk to 'old people,' institutions, or to send complex instructions to large groups. According to research by the Pew Internet & American Life Project, 75 percent of online teens—or about two-thirds of all teenagers—use instant messaging, compared with 42 percent of online adults. Of the teens that use IM, 48 percent say they exchange IMs at least once every day. Even a new

lexicon has grown up around IM, with stroke-saving shorthand notations such as "lol" (laugh out loud) and "ttyl" (talk to you later)."

However, not all people are comfortable with instant availability and letting others know when they are online. Boomers are generally less comfortable with this notion of online visibility and may need a 'safe' environment to test this out to become comfortable with IM as a routine method of communication and knowledge transfer. One suggestion from boomers is to experiment IM'ing with their children as a place to start.

APPLICATION

More and more organizations are discovering the benefits of using IM. For example, at Sprint instant messaging is now viewed as a necessary and critical tool for internal communication and knowledge sharing. When the information technology department wanted to block IM at the corporation because it was a potential security problem, executives intervened to save this capability because they had begun to rely on it themselves. The executives at Sprint view IM as a productivity tool that facilitates real-time exchange of information and for ubiquitous connectivity.

Here are some of the more common applications that have been reported:

⇒ A tool for more experienced people to facilitate the real-time transfer of their knowledge within the organization, and particularly to younger employees. Just-in-time mentoring and coaching via IM are common in university and 'high-tech' environments.

⇒ Facilitate one-on-one informal learning and knowledge sharing across organizational boundaries. Employees often use IM to connect with people outside of their organization to instantly gain information or specific knowledge.

⇒ Enable groups of individuals to exchange information and specific knowledge by quickly creating an online chat room where a group can gather virtually to discuss a project, activity or perform a virtual Action Review to learn while they are working on a specific task. A manager can reach out to a geographically dispersed team and have a conversation or work on a problem with ease and quickness not available with other types of communication.

⇒ An IM session can be recorded and codified during the conversation itself. The transcripts can be made available to be searched by others looking for similar ideas or dealing with similar issues.

GETTING STARTED:

Instead of re-inventing what many people have already created as how to guides for IM, we recommend you read The Inner Workings of IM, which can be found on the Internet at this link:
http://communication.howstuffworks.com/instant-messaging2.htm.

Also, consider asking a Gen Xer or Yer in your organization, or outside work, to help you get started.

GOOD PRACTICES

⇒ Engage with someone in your IT organization and ask if IM is available in your organization. Even if it isn't, there a good chance one of your IT people has used IM and could point you in the right direction to get started.

⇒ Keep your messages short and concise. One liners, incomplete sentences and abbreviations are the norm.

Sources:

- Power of the Collective Cardus_2006
- Techniques and Tools for Transferring Know-How from Boomers to Gamers_Kapp_2007

SUPPORTING TOOL/RESOURCE 20: OPEN SPACE

OVERVIEW

Open Space Technology is a meeting method that helps individuals and groups become more effective in work environments that are rapidly and constantly changing by developing their skills as collaborative problem solvers and lifelong learners. Open Space Technology captures the knowledge, experience and innovation in the organization not captured through conventional closed system processes.

It is a self-organizing practice guided by a mix of collective activity and personal commitment, releasing inherent creativity and leadership in participants. By inviting people to take responsibility for what they care about, Open Space establishes a marketplace of inquiry, reflection and learning, bringing out the best in the whole group, community or organization. Because the nature of this process is open, risks are high; once the "door is opened" there is no turning back – committing the sponsor to support activities defined by the group.

Examples of operational questions the tool can help answer

- How can we cope with change as we move into an increasingly unclear future?
- How can we best utilize complex elements and diversity of players in X situation?
- How can we manage this conflict productively (at any organizational level or between the organization and the government)?
- How can we begin to tackle complex internal issues or issues with partnering organizations or governments that have strong emotional aspects or implications? (Issues in which passions run high?)
- How can we improve communications at all levels?

KEY CONSIDERATIONS:

a. Do you have a predetermined agenda or desired outcomes? If that is the case than Open Space is not a recommended approach. Only the topic is pre-chosen. The Open Space process allows the participants to create the outcomes. Open Space creates the "space", the opportunity for those who are passionate about the topic to raise the issues and decide outcomes. In that way strong commitment is almost sure to follow.

b. How open is the invitation list? The right people are those who care about the topic, who are already interested. Invitations should not be limited or determined by position or role, but by the interest the person shows in the topic. Passion is the key word. If the people are passionate about the topic, they are the right ones to invite. Passion and willingness to take responsibility should guide the invitation list. Open Space is about leveraging knowledge

b. That people bring into the Open Space. There can be a limit, however, to how many people are invited.

c. How focused is your issue. The broader the issue or topic, the more time it will take for common understandings to begin to take shape. Broad topics will attract a broad attendance; a more focused topic will likely attract a more specific group. The scope of the focus will influence how much time you allot for the Open Space meeting.

d. Be sure you have the right audience for the topic. The topic and audience should be matched or tailored for each other – lack of energy means a bad match.

e. Are stakeholder leaders prepared to lead differently, giving control of the agenda? Open Space depends on freedom for process and outcomes to unfold. Leaders can send signals seriously inhibiting or risking the success of an Open Space meeting. Stakeholder leaders must commit to the topic and to the openness of the process. It would be wise to hold a smaller Open Space if a larger Open Space is eventually in view. It is essential the stakeholder leaders understand and commit to Open Space processes and assumptions.
f. Do you have enough "critical mass" for this issue to move forward? The connections and communications set up during the process are essential for further movement. Again, shared passion for the topic is essential.
g. Boundaries are necessary even for such freewheeling process as Open Spaces. Limits often give freedom to act. Some starting boundaries might revolve around budgetary restraints, schedules, and project domain.

Facilitating the Process

The Open Space tool relies on two basic assumptions: (1) Groups will work well with democratic processes and (2) Groups will need little guidance. For facilitating an Open Space process, check three items:

The Group: Who will use the tool: Staff, government partners, implementing organizations? When in development operations can the tool be used? Which sector(s) of operations is the tool suited for? Evaluation and assessment, project inception, project design, program strategy formulation (organization planning), project implementation, problem solving. How long does it take? One day of Open Space produces good conversation; Two days – common understanding; Three days -tangible results (resolution, leadership and plans).

Questions for Measuring Impact:

- Was it a safe, inclusive environment where ideas could be freely exchanged emerging?
- Are people satisfied that issues have been fully explored?
- Were there significant knowledge gaps (missing people) from the process?
- Are plans ready for implementation or are parts still unclear?

Follow up Activities

Project teams can themselves select which emerging projects they will take part in according to those for which they have the most energy. Each team is encouraged to appoint a coordinator who is accountable to management for stewardship of resources. Each team decides the goal of the project and target completion date, team roles, identifies key challenges and essential resources needed and steps needed to achieve the goal.

In Open Space, even though the meeting ends, issues evolve. The on-going learning and discovery are important benefits that need to be nurtured. On-going, energized communication is essential. Create places where successes, new issues, and concerns can be shared. Key to eventual success is to keep the learning alive.

Doing an open space – a two page primer

WHAT IS OPEN SPACE?

It is a self-organizing practice of inner discipline and collective activity which releases the inherent creativity and leadership in people. By inviting people to take responsibility for what they care about, Open Space establishes a marketplace of inquiry, reflection and learning, bringing out the best in both individuals and the whole.

WHEN TO USE IT:

- Where conflict is holding back the ability to change
- Where the situation is complex

- Where there is a high degree of diversity
- Where there is an urgent need to make speedy decisions
- Where all stakeholders are needed for good decisions to be made
- Where you have no preconceived notion of what the outcomes should be.

PROBABLE OUTCOMES:

- Builds energy, commitment and shared leadership
- Participants accept responsibility for what does or doesn't happen
- Action plans and recommendations emerge from discussions as appropriate
- You create a record of the entire proceedings as you go along.

HOW IT WORKS:

The Law of Two Feet means you take responsibility for what you care about – standing up for that and using your own two feet to move to whatever place you can best contribute and/or learn. Four principles apply to how you navigate in open space:

- Whoever comes are the right people: Whoever is attracted to the same conversation are the people who can contribute most to that conversation – because they care. So they are exactly the ones – for the whole group – who are capable of initiating action.
- Whatever happens is the only thing that could have: We are all limited by our own pasts and expectations. This principle acknowledges we'll all do our best to focus on NOW – the present time and place – and not get bogged down in what could have or should have happened.
- When it starts is the right time: The creative spirit has its own time, and our task is to make our best contribution and enter the flow of creativity when it starts.
- When it's over, it's over: Creativity has its own rhythm. So do groups. Just a reminder to pay attention to the flow of creativity – not the clock. When you think it is over, ask: Is it over? And if it is, go on to the next thing you have passion for. If it's not, make plans for continuing the conversation.

HOW OPEN SPACE WORKS WHEN THERE IS CONFLICT:

The Law of Two Feet gives participants freedom to move at any time to a discussion they care about. Caring creates common ground, and helps to remind participants of higher purpose.

GROUP SIZE:

To date, we know that Open Space accommodates groups from 5 to 1500 people. It can be run for a couple of hours to 3 or more days; consecutively or over time; at one site or at multiple sites connected by computer and/or phone and video. The longer the space is open, the more transformative the outcomes.

THE STEPS IN BRIEF:

1. Select a focusing statement or question for your gathering. It should frame the higher purpose and widest context for your discussion in a positive way.
2. Invite the circle of people: all stakeholders or all the people you'd like to have in the room. Include the theme, date, place and time of gathering in the invitation.
3. Create the circle: Set up chairs in a circle or in concentric circles, leaving space in the center. Choose a blank wall for the Agenda Wall and label it AGENDA: AM, PM across the top. Set up a table for computers near a wall you label NEWS. Put blank sheets of news print (about quarter size of a flip chart page) and coloured felt pens in the center of the circle. Near the Agenda Wall and the News Wall put masking tape for people to post papers on the walls.

4. To begin the gathering: Facilitator explains: the theme, the simple process the group will follow to organize and create a record, where to put things up and find out what is happening, the Law of Two Feet, and the Principles of Open Space. Then, facilitator invites people to silently meditate on what has heart and meaning for each of them.
5. Opening the marketplace: the Facilitator invites anyone who cares about an issue to step into the middle of the circle and write the topic, their name, a time and place for meeting, announce it and post the offering on the Agenda Wall – one sheet per topic – as many topics as he/she wants. They will be convenors who have responsibility for facilitating their session(s) and seeing to it that a report is made and shared on the News Wall.
6. When ALL offerings are concluded, the Facilitator invites people to sign up for what they are interested in and take responsibility for their schedules, using the Law of Two Feet.
7. People participate in discussions. The Facilitator takes care of the space. Reporters enter discussion reports in the computers and printouts are posted on the News Wall.
8. Closing Circle: all reconvene an hour before closing to share highlights, "aha's" and key learnings in a Dialogue format: simply listening to whatever people have to offer without discussion, or you can pass a "talking stick" for each person to hold as s/he is talking, or to pass along if the person doesn't want to contribute anything.
9. Mail out whatever record is created and an address list to all who came.
10. If it is a several day gathering, do steps 3 through 8 daily.

Source

Adapted from: http://www.openspaceworld.org/tmnfiles/2pageos.htm

Useful Links and References

World Bank used Open Space. An Excellent overview of Open Space by Owen
http://www.worldbank.org/participation/LearningFinal.pdf

USAID Best practices box halfway down page. http://www.usaid.gov/about/part devel/docs/anthol5.html

OSLIST Archive – discussions on the OSLIST have been archived since 1998. The archives are fully searchable and contain countless stories, discussions, and musings on OST. http://listserve.boisestate.edu/archives/oslist.html

Link to Open Space World: http://www.openspaceworld.org/cgi/wiki.cgi

Owen, Harrison (1992).Open Space Technology: A User's Guide. Potomac, Maryland, USA: Abbott Publishing.

Owen, Harrison (1995), Tales from Open Space. Maryland: Abbott Publishing.

SUPPORTING TOOL/RESOURCE 21: PODCASTS

PURPOSE

Communicate, share and transfer knowledge to a broad audience using audio as the medium.

DESCRIPTION

A Podcast is defined as "a digital recording of a radio broadcast or similar audio program, made available on the Internet for downloading to a personal audio player." The concept became so popular that the New Oxford American Dictionary declared "Podcast" as the Word of the Year 2005.

Though the term Podcast is coined using a combination of iPod and Broadcast, you do not require an Apple iPod to listen or subscribe to Podcasts. Any device that can play MP3 files, like cell phones or portable MP3 players or even your computer, can be used for downloading and listening to Podcasts. They are no different from MP3 song file.

BENEFITS OF PODCASTS

The main benefits of podcasts are their accessibility and bandwidth. Because they are downloaded to a personal device, people can listen to the content according to their needs and schedule. PodWorx, a Business Podcast Consulting provider podcasting explains this in a powerful manner, "With the listen-when-I-want-to capability of podcasting, your customers (and prospects) expect content on their terms, not yours. If you choose not to give voice to your business™, your competitors will."

The audio form of communication can provide much more data and information than typically be found in a document, so a podcast can potentially convey more to a receiver than plain text. Some of this richer information contains cues about the source, such as tone of voice, etc, which helps to build a social relationship between sources and receivers. This is especially important because it provides context required for effective knowledge sharing and transfer.

COMMON BUSINESS APPLICATIONS

Some common applications in business today include:

- Business leaders raising attention to important, timely issues, such as business goals, performance reviews (what about them? That they are happening or more?), and burning platforms.
- Sharing a recent experience, new lesson learned or an insight that could impact others that you wouldn't reach in the normal course of interactions
- Highlighting new competitor pressure or threats
- Reinforcing key messages (can you give this some context?)
- Training
- New uses for podcasts are emerging every day.

For example, Kent Greenes was interviewed about his insights on Communities of Practice (CoPs) by the CEO of Tomoye Corporation, one of the leading vendors for CoP software systems. The interview was created as a Podcast and offered for downloading on the company website site as a value-added feature for Tomoye customers. Click here to download this podcast.

Check out these top 4 business podcasts (from Disney, BMW, This Week in Tech, and IBM) to learn how leading organizations are using this method to create new opportunities for their businesses:
http://podcasting.about.com/od/podcastsforbusines1/tp/topbizpodcasts.htm.

More examples of business applications can be found in the Reference section below.

GOOD PRACTICES

- Keep a podcast fairly brief (15 minutes or less) or partition it in segments that allow the receiver to listen in 'bite-sized' chunks. It's hard enough to get someone to listen to your message, let alone if it takes an hour to 'get' it.
- Stories are powerful ways to get a listener's attention and hold it, and they help people remember what you wanted to tell them. Refer to the Storytelling guide elsewhere in the Knowledge Transfer Guide or Multigenerational Knowledge Transfer Asset for more details on this method.

GETTING STARTED

To create your own podcast, all you need is a decent microphone, a computer and some interesting story to share with your audience. You can then record and edit your podcast using Audacity (http://audacity.sourceforge.net/), an open-source sound recording software. If you want to interview someone located in another city or country for your podcast; it can easily be done using Skype, a free voice chatting client that can also record your conversations in digital format through free plug-ins.

Once your podcast (MP3 file) is ready for sharing, you will need to host your file on a web space from where subscribers can download it to their computer hard drives or portable MP3 players.

Rather than re-inventing what others have already created as 'how to' guides for creating a Podcast, we recommend you read 'Getting Started With Podcasts', which can be found online at the following website: http://www.podcastingnews.com/articles/Getting_Started_With_Podc.html.

It walks you through 3 easy steps to find and install the right software for your personal devices, usage and synchronization.

SOURCES:

Top Ten Business Podcast Applications:
http://podcasting.about.com/od/podcastsforbusines1/qt/CorporateCasts.htm

What is a Podcast? From Podcast Alley, http://www.podcastalley.com/what_is_a_podcast.php

SUPPORTING TOOL/RESOURCE 22: WIKIS

PURPOSE

Wikis are used to facilitate fast creation, sharing and transfer of collaborative knowledge content in an easily in a highly accessible and visible manner.

DESCRIPTION

Wiki is the short form for "wiki wiki web," from the Hawaiian expression "wiki wiki" meaning fast or quick. It is a web site where anybody can create and edit a web page. The structure is not pre-determined, it is invented and evolved by the community of people that contribute to it.

Wikis make it easy to quickly and collaboratively author content anytime and from anyplace. While they are particularly suited to teams for sharing good practices, lessons to be learned from activities and projects, any visitors to the site can add, edit, or delete content. This means a team or organization can benefit from people other than the 'usual suspects', that is, people who have relevant knowledge to share on a specific topic that wouldn't normally tapped for their contribution in the course of a piece of work. In practice, all input to the site is usually filtered by an individual or group responsible to ensure inappropriate contributions do not show up on the site.

One of the most widely-known examples of a Wiki is Wikipedia (**www.wikipedia.org**), an online encyclopedia written collaboratively and subsequently edited, corrected, and updated in real time by many of its readers. To view a Wikipedia on Wikis, click on this URL: **http://en.wikipedia.org/wiki/Wiki** . Internet search results for many basic topics will often have a relevant Wikipedia site listed near the top of the result stack.

Unfortunately, the flexibility and openness of this method of knowledge transfer also raises concern about the nature and validity of the content. After all, anyone can contribute! However, all entries are tracked and all changes to the content are recorded. As a result, people tend to make legitimate and accurate contributions and modifications. In practice, inaccuracies or inappropriate content are quickly addressed because of the volume of visitors and ease of changing what has been added.

GENERATIONAL CONSIDERATIONS

"Social software uniquely encourages people to learn together but also provides a level of flexibility that allows each individual to retain control of their time, place, activity and individuality," writes Jon Cardus in the **Power of the Collective** . These are all elements that are important to Gen Yer's, and probably many other generations of people in the workplace.

"Gamers have embraced the technology of Wikis as a way to quickly exchange information, and the speed and ease of updating Wikis has accelerated their adoption within several organizations as a mechanism for collaborative knowledge sharing and transfer," writes Karl Kapp in his paper titled **Techniques and Tools for Transferring Know-How from Boomers to Gamers.**

Three types of information and knowledge that can quickly be posted by Boomers that younger generation workers find valuable include:

- Frequently asked questions that they get from young people in their organization;
- Links to information they find useful to make things happen in their job and company;
- Critical information or specific knowledge for re-use and adaptation.

COMMON USES

People and organizations are discovering many uses for Wikis. Here are some of the more common applications that have been reported:

- Enable teams and groups to form and work bottom up, and multiple groups to develop and transfer collective knowledge together with a broad range of contributors-- stitching together a highly visible and transparent fabric of their shared knowledge and experiences;
- Use wiki capabilities to remove barriers to groups of interested people coming together – 'lighting up' collaborative environments;
- Make it easy for people (non-techies) to get organized, discover and link to sources of information/knowledge they need, share and transfer knowledge, and develop and publish reference knowledge they develop;
- Project knowledge management - project tracking, brainstorming, coordination of ideas, agenda tool to collect topics, project notes repository, knowledge base, staff directory
- Personal knowledge management - Sketchpad to collect ideas, addresses, dates, tasks, bookmarks, etc
- Software development - Collaborative documentation, track bugs, e.g. most open source projects coordinate via wikis

Kapp provides an example in the above mentioned paper that demonstrates the perfect application for a Wiki: "One example is the Leukemia & Lymphoma Society, the world's largest voluntary health organization dedicated to funding blood cancer research, education, and patient service. With 66 chapters spread across the United States and Canada, the Society faces unique challenges around capturing and disseminating best practices—challenges compounded by staff turnover, varying levels of computer expertise among staff, and the need to disseminate information in a manner compatible with existing computer systems. In an initiative spearheaded by the Society's eMarketing team, the organization has implemented a Wiki to share best practices among chapters. The single online location and easy-to-use interface enable staff from all chapters to instantly post, review, and update best practices or training information, building a knowledge base available 24/7 to anyone in the organization."

GETTING STARTED

Instead of re-inventing what many people have already created as how to guides for creating a Wiki, we recommend you read **MediaWiki for Dummies** - *Everyone's talking about wikis; here's how you can get involved without being a techie* by Demir Barlas, Line56.

GOOD PRACTICES

- Ask a Gen Xer or Yer to help you get started
- Don't underestimate the level of effort and resource required to monitor a Wiki that is accessible beyond your normal span of control or readership. Since anyone can add content that has access to it, contributions can take place 24/7. This means that someone should be monitoring the inputs at all times if the openness of a specific Wiki may be a concern.

Source/ Useful Links and Resources:

- Power of the Collective Cardus 2006
- Techniques and Tools for Transferring Know-How from Boomers to Gamers Kapp 2007
- MediaWiki for Dummies Barlas, Line56

SUPPORTING TOOL/RESOURCE 23: COLLEGIAL COACHING (PEER COACHING)

Collegial Coaching is a professional development method aiming at increasing collegiality and improving performance. It is a confidential process through which professionals share their expertise and provide one another with feedback, support, and assistance for the purpose of refining present skills, learning new skills, and / or solving task related problems. Hence, actions that might improve the use of the skills and knowledge are explored.

There are five Functions of successful Collegial Coaching:

Companionship: Talk about success and failure with a new approach.
Feedback: Give each other objective, non-evaluative feedback.
Analysis: Help each other extend the control over a new approach.
Adaptation: Work together to fit an approach to the special needs of an assignment.
Support: Provide needed support.

Steps in a Collegial Coaching

- Define roles: (A) Requesting person and (B) coaches.
- A exposes the own situation and formulates the core question for the coaching.
- Coaches (B) ask questions of understanding; A provides answers.
- Coaches (B) discuss among themselves about A's case and about the way he presented it. They share own experience of similar situations and challenges. A just listens.
- A reacts on the discussion of the coaches. If needed, steps 2 to 4 are repeated (new core question).
- A declares next steps to do.

COMPONENTS:

What is collegial coaching? Collegial coaching is a process in which two or more professional colleagues work together for a specific, predetermined purpose in order that professional performance can be improved as well as validated. The purpose may be to reflect on current practices or to expand, to refine, and build new skills. Collegial coaching can be utilized to share new ideas; to teach one another; to conduct observations of meetings or workshops; or to solve problems in the workplace. Collegial coaching is non judgmental, and non evaluative. Collegial coaching is focusing on the collaborative development, refinement and sharing of professional knowledge and skills, as well as developing alternative behaviour.

There are a variety of collegial coaching terms and models: technical coaching, peer coaching, team coaching, cognitive coaching, and challenge coaching are a few of the more common types of coaching used.
Each model is slightly different but all have the same end goal – to improve professional performance – and all involve the use of peers/colleagues to achieve this goal.

Collegial Coaching has been developed by professionals in the field of teacher training. The concept is convincing and practice oriented; it can easily be transferred to other professional fields.

WHY COLLEGIAL COACHING?

Statistical support for collegial coaching comes from many sources. Bruce Joyce states following figures:

- 5% of learners will transfer a new skill into their practice as a result of theory
- 10% will transfer a new skill into their practice with theory and demonstration
- 20% will transfer a new skill into their practice with theory and demonstration, and practice within the training

- 25% will transfer a new skill into their practice with theory and demonstration, and practice within the training, and feedback
- 90% will transfer a new skill into their practice with theory and demonstration, and practice within the training, feedback, and coaching

BENEFITS OF COLLEGIAL COACHING:

After a period of practicing collegial coaching you may hear professionals saying: "The level of trust we developed made it possible for us to support and listen to one another." "The feedback has also given me insight into what is actually going on through another set of eyes. I feel that my effectiveness has been greatly increased through the collegial coaching process." "It brought to life a lot of things I knew I should do and had tried, but had not continued. It gave me an impetus, having a coach / colleague I respect."

Some of the benefits reported by professionals who have been involved in collegial coaching are:

- enhanced sense of professional skill
- increased ability to analyze their own way of working
- better understanding of what we know about best practices
- wider repertoire of professional skills
- deeper sense of efficacy
- stronger professional ties with colleagues
- more cohesive organizational culture and working climate

GETTING STARTED:

Make sure you have a team with an open and trustful working spirit. The minimum number would be one colleague, the maximum number a team of five to six members. Reserve enough time during the team meeting or invite for a special collegial coaching session. Act along the following steps:

1. Collect the cases of your team mates (there might be several cases asking for a coaching).
2. Select the case to be checked according to the interest, importance, urgency. Prospective cases (there will be an immediate step to be taken) provoke more passion than retrospective cases (lessons to be Learned).
3. Distribute roles: In groups of more than four members it is advisable that one assumes the role of a facilitator (checking the time frame and orienting the discussion if needed).
4. Expose the case: Describe the situation, tell the "history" of your case, make clear why this case is important to you, explain what you feel being difficult, share what you already tried out, and formulate a clear question the coaching should focus on.
5. Clarify questions of understanding asked by the coaches. Keep this step as short as possible! Coaches should restrict to what they really need to know.
6. Open a dialogue among the coaches. The person having exposed its case listens carefully, but does not intervene in the discussion. The dialogue may relate to:
    - The facts you perceived during the exposure of the case ("the red thread", key words characterizing the challenge, surprising facts)
    - What you perceived regarding the way the case has been exposed (voice, tone, body-language related to a special moment in the story).
    - The own feelings you had during the presentation.
    - What you perceive as the core challenge or what you assume might be a hidden challenge not mentioned by the presenter.
7. Optional: The presenter of the case comments on what has been said so far and states in how far his own perception of the case has already changed. He repeats or re-formulates his question for the coaching (focus-question).
8. The coaches resume their dialogue. In the second part they might share:

a. Their hypotheses and fantasies about the case
b. Questions they would clarify if they would be concerned
c. Information they feel important to know if they would be concerned
d. Experience they gathered in a similar case
e. Possible solutions they would go for

It is up to the facilitator to structure the discussion. The presenter only intervenes if the dialogue goes completely "off-road", i.e. the presenter is no more able to relate it to the focus question.

9. The presenter of the case states what elements of the dialogue attracted his interest and what was most meaningful to him. In a common discussion the whole team might clarify and probe the most promising track(s) and analyze benefits and possible risks. The most promising option might be explored through a role play, tentative action or comparison with a real similar case.
10. The presenter states what will be the next steps he is going to do. If needed, he may ask a team member to act as an accompanying coach (observer) in this next step.
11. The group reflects about the process and shares learning insights. Most often, other team members profit as well of the coaching by discovering parallel aspects with cases they are facing.

TIME FRAME FOR A COLLEGIAL COACHING

If there are only two persons (the coached person and a coach), 10 to 30 minutes will do.
If you conduct a more formal collegial coaching in a group (the coached person and four coaches), half an hour to one hour and a half will be an appropriate frame.

WHO IS A GOOD COACH?

Any team member or colleague can be a good coach. The following prerequisites are helpful:

- Own experience in a similar situation
- Capacity to understand and analyze social systems
- Ability to reframe an experience (transfer it into another context)
- Empathy with others.

Source: Peer Coaching for Improvement of Teaching and Learning (see Web-links) and coaching documents of AGRIDEA Lindau (translation).

Useful Links and Resources:

Peer Coaching for Improvement of Teaching and Learning
A short and informative presentation of peer coaching within the educational system, highlighting reasons and benefits of the method. A lot of convincing arguments to include it into the daily routine of other professionals as well, such as development workers. http://teachersnetwork.org/tnpi/research/growth/becker.htm

Peer Coaching: An effective staff development model for educators of linguistically and culturally diverse students. By Paul Galbraith and Kris Anstrom. This article highlights benefits and process of peer coaching in the light of staff development in educational settings. http://www.ncela.gwu.edu/pubs/directions/03.htm

Collegial Coaching at High Tech High

Though the Website aims at teaching situations, it is full of questions that help a lot in guiding a coaching process. Four pages full of inspiring questions, grouped according to various purposes of the coaching process.
http://staff.hightechhigh.org/~tfehrenbacher/Misc/Collegial%20Coaching.htm

Mentoring and Coaching Models
This Website explains the collegial coaching process. It clearly states the difference between coaching and mentoring and suggests splitting the coaching process in three parts, the pre-conference, the observation and the post-conference. http://209.85.129.104/search?q=cache:ndR-W100urQJ:my-ecoach.com/online/resources/925/peercoaching_ef.pdf+collegial+coaching&hl=de&ct=clnk&cd=15&gl=ch

SUPPORTING TOOL/RESOURCE 24: STORY TELLING

Storytelling is used in organizations as a communication tool to share knowledge with inspiration. The language used is authentic (experience, not fact oriented); it is the narrative form that most people find interesting and attractive.

Storytelling has of course existed for thousands of years as a means of exchanging information and generating understanding. However, as a deliberate tool for sharing knowledge within organizations it is quite recent but growing very rapidly, to the extent that it is becoming a favoured technique among an increasing number of management consultants.

If you hear "what really happened" in a promotion, demotion, termination or transfer, you are hearing a story. Storytelling is less structured than critical incidents but can serve the same ends. It can be a most effective way of transmitting wisdom from one person to another.

How to go about it (as a storyteller)?

1. Be clear about the key message you want to convey with a story.
2. Build your story on an own experience. Note key-words, from the beginning to the dramatic evolution, the turning point and the happy (sad) end. What is the lesson learned?
3. Tell your story starting from the beginning. Build an atmosphere of curiosity. Tell the surprising moment of your story with a dramatic voice. Observe your listeners.
4. If indicated, relate your story to the topic discussed.

How to go about it (as a listener / interviewer)?

2. Contribute to a good climate in the group. Show your interest. Give the storyteller an adequate reason to tell.
3. Be a great audience. Listen closely, be receptive and fully comprehending.
4. Don't resist the story. Hear it out and then come back with additional questions.
5. Observe an implicit contract of trust. Only break when you feel the teller is not telling the truth.

WHAT IS STORYTELLING?

Storytelling is quite simply the use of stories in organizations as a communication tool to share knowledge. Traditionally, organizational communications have had a tendency to be somewhat dry and lacking in inspiration. Storytelling uses a range of techniques to engage, involve and inspire people, using language that is more authentic (everyday language as opposed to 'textbook buzzword speak') and a narrative form that people find interesting and fun.

Storytelling has of course existed for thousands of years as a means of exchanging information and generating understanding. However, as a deliberate tool for sharing knowledge within organizations it is quite recent but growing very rapidly, to the extent that it is becoming a favoured technique among an increasing number of management consultants.

BENEFITS OF STORYTELLING:

Simple stories can illuminate complex patterns and deeper truths – one should never underestimate the power of the particular. The process of telling your story – and seeing it touch other people – can be empowering. Being touched by the stories of others makes a difference to bonds of trust, as well as insights. In addition the weaving in of narrative elements into more traditional reports not only captures the reader's attention but also sends a strong signal that many voices and perspectives are valued.

Storytelling experiences can create:

- shifts in attitudes and behaviour
- shared understanding about future ambitions and direction
- a sense that the "whole person" (the heart and the mind) has been engaged at work
- lasting personal connections that survive the immediate situation
- re-usable processes and raw materials
- story selection which identifies those stories that move beyond anecdotal and become small stories which illuminate bigger themes

Beyond these more basic interventions, you might be facing more complex challenges, for example developing a policy or strategy, a country programme or undertaking an evaluation.

In this case it will be necessary to adopt a more sophisticated approach, combining methodologies or embedding narrative elements into your processes in more systematic or strategic ways.

Story telling is not suitable for every situation. Methodologies should be selected by practitioners with due care to the wider working context and intention. Some methods need time to be accepted as part of the organizational culture; patience and management backing is asked for.

What makes a 'good' story?
Larry Prusak (see links below) defines 4 attributes of a good story:

- **Endurance** – Good stories endure. They may change a little – or even a lot, but the key lessons remain the same. They also need to be succinct enough for people to remember.
- **Salience** – Good stories are relevant to their audience, they have a point, and they have emotional impact.
- **Sense-making** – Good stories explain something, make sense of something. Perhaps they show you how to behave in particular situation, how to resolve a problem, or why something happened the way it did. They have a prescriptive normative value: do x and y will occur.
- **Comfort level** - To be effective, stories must make sense within the context of the listener's experience – they need to ring true.

Steve Denning (see links below) adds:

- **Fact versus fiction** - Storytelling can be counter-productive when the story told is not true. A story can be factually accurate while being authentically untrue and many corporate communications take this form, particularly those that are told more as a public relations exercise than as a means to promote genuine learning.
- **Oral versus written stories** - In the written word there is a distance between the speaker and the spoken, and so in an organizational context, it can lack some authenticity. Practitioners have found that oral storytelling has a greater impact than putting stories into booklets or videos or online. This doesn't mean that written stories can't achieve good effects, but that they work in different kinds of ways.
- **The 'happy ending'** – Steve Denning (see 'Resources and references' below) reports having had no success in telling a story along the lines of: "Let me tell you about an organization that didn't implement knowledge management and it went bankrupt." In other words, focus on the positive.
- **The 'hero'** – A story needs to be told from the perspective of a single protagonist, someone who everyone in the organization can instantly understand, empathize with, resonate with their dilemma, and understand what they were going through.

- **The 'plot'** - A story needs to have a certain strangeness or incongruity – something that is remarkable and therefore grabs attention. ('That's remarkable that you could get an answer to a question like that in such a short time frame'). But it is nevertheless plausible (email exists, the web exists).
- **A beginning, middle and an end** - A story needs to embody whatever it is you are seeking to get across as fully as possible. Don't leave loose ends.
- **Timing** - A story should be as recent as possible – older stories can work, but the fresher the better. 'This happened last week' conveys a sense of urgency.

KEY CONSIDERATIONS:

- Storytelling is not a panacea - it doesn't always work. Storytelling can only be as good as the underlying idea being conveyed. If that idea is unsound, storytelling may well reveal its inadequacy.
- Even when the underlying idea is good, there are times when storytelling is inappropriate or ineffective. For example: routine situations in which nothing new, unexpected or different happened; or situations that require objectivity in reporting.
- Storytelling does not replace analytical thinking. It supplements it by helping to give it context and meaning. Abstract analysis is often easier to understand when seen through the lens of a well-chosen story.
- Try to avoid telling a story for the first time at a high-profile, high-risk occasion. Test the story in advance on a variety of similar audiences, so that you know exactly the effect that the story will have.
- When using the knowledge contained in the stories of others to support your own decisions, consider how you will balance that anecdotal knowledge with evidence-based knowledge: how will you assess and integrate the knowledge from stories?
- We are all storytellers and spend much of our lives telling stories whether we realize it or not. However we can all get better at storytelling, particularly at using stories to achieve specific effects. Understanding how and why storytelling works and learning what kinds of stories work in different situations, and what kinds of effects different kinds of stories have, can enable us to be more adept storytellers in an organizational context.

GETTING STARTED:

If you are not the naturally born storyteller, there is a procedure to build your story:

Method for working in pairs

1. Close your eyes for a moment and think of a moment in response to a particular question that may be set for you, or which you may set for yourself, e.g. the moment at which you felt proud to part of a community, the moment at which you had to take a difficult decision, a moment when you were stuck in a project and did not know where to turn. Make prompt notes on a postcard, thinking: "what do other people need to know about my story?"
2. Find a partner and introduce yourselves.
3. Take it in turns to tell your story, describing the events before, during and after that moment of change. Do your best to transport your partner to that time and place by creating strong visual images linked in a clear sequence. Write nothing down.
4. Conducted as a conversation, the partner acts as scribe and interviewer, ask any question that helps you both achieve a deeper understanding. The partner digs deeper; probing for more detail around each part to ensure the story builds to a strong satisfying conclusion. Please note: Every story is about a change from one status quo to another. Be clear by the time you finish what the change implicit in each story is, or at least the change you most want to communicate.
5. End by naming the story and writing the names of the co-authors.
6. When the ingredients have been assembled in this way, spend time rehearsing the new teller, so that they can tell the story from the heart.

7. As the final test, the teller can give permission for their partner to tell their story to a broader group. This helps ensure that the story is memorable to someone else and that the essential meaning has been retained. Alternatively, the story facilitator could name the story and introduce the teller so that the partnership is maintained and acknowledged in a different way.

Variation for working as an individual

An individual wanting to deepen recollection of a particular episode can use this way of doing. Try finding someone to tell your story to. Rehearsing a written story by telling it out loud often illuminates imperfections and helps you write more fluidly.

Variations for working in larger groups

Pairs can share their stories, and then pairs join up to make a group of four and all four stories are told again. One of these four stories is then selected to work on in more detail, and the template is introduced at this point. Instructions from the facilitator can invite a "truthful" retelling, or invite people to feel free to develop a more fictional version of the story. Using this structure to create a group story around a flipchart for example – factual or fictional e.g. allegorical – can be an energising process, unleashing creativity and encouraging lively conversation. When introducing the chosen story back to the other groups, the teller should briefly recount the subjects of the other stories shared privately in the group. If capitalization of experience is important, you may wish to record they key points of the first four stories on postcards before choosing one story to work on in more detail with the template. If a story is sensitive you might construct 'factional' stories. Combining facts with fictional embellishments creates "Faction". It can be particularly useful when you are seeking to either write a story that carries group resonances (for example a 'who we are' story, articulating organizational culture) or to communicate difficult truths to your audience, for example when communicating the detail of an experience where lessons were learned the hard way and hence certain details have to be modified to protect the identities of those concerned.

A) Objects and displays – triggering memories and finding hidden histories

Objects and displays can create a very physical experience, a way for warm or surprising personal memories to be collected and passed on. When story telling you can use objects to trigger memories of specific experiences. Objects – unlike printed words on a page – have the power to both evoke and contain stories, conveying symbolic qualities. As symbols for an idea or experience they are easy for the memory to recall and can make deeper conversation possible. As tangible things it is possible to make collections, exhibits and displays from them. Making patterns visible arouses people's interest in the subject matter they relate to.

B) Postcards – gathering a wide range of ideas and insights

A way of collecting and recording insights and condensed stories this method uses the common postcard as a metaphor, a way to keep connection between the picture evoked by the story and the messages addressed to others which come from it.

C) Jumpstart Stories – an interactive way to start an event and build connections

Providing a physical forum for fast exchange and selection this is a transformative way to begin any event or gathering. The process introduces each person to other participants in a meaningful way, establishing warm connections through a common experience.

D) Half a Story – looking forward from the present

Groups use an unfinished story to shape possible paths to the future, logging any risks and opportunities encountered along the way. This is a 'light' way to respond to possibly difficult challenges.

E) Future Story – forming a common vision and planning collective action

Shifting the date and looking back from the future – talking about the future as if it has already happened – supports groups constrained by unproductive or 'stuck' patterns and enables the psychological shifts necessary for change and positive action. It can create a benchmark to look back on when the actual date arrives.

F) A Story in a Word – Finding the meaning in words

Words from mission statements, charters, core project documents, can be used as a trigger for personal stories that illustrate those words in action. This creates a deepened shared understanding of the qualities of the words, and strengthens bonds.

Sources:

SDC, *Story guide-Building bridges using narrative techniques*, SDC, Berne, 2007.
German : http://www.km4dev.org/index.php?module=uploads&func=download&fileId=345
French : http://www.km4dev.org/index.php?module=uploads&func=download&fileId=344
Spanish : http://www.km4dev.org/index.php?module=uploads&func=download&fileId=346
English : http://www.km4dev.org/index.php?module=uploads&func=download&fileId=347
http://www.nelh.nhs.uk/knowledge_management/km2/storytelling_toolkit.asp
http://en.wikipedia.org/wiki/Storytelling

Useful Links and Resources

http://www.creatingthe21stcentury.org/

SUPPORTING TOOL/RESOURCE 25: LEADERSHIP TRANSITION WORKSHOP

This is a simple and highly effective workshop to help a team accelerate the process of transition and knowledge transfer following a change in leadership. Whenever there is a change of leadership, the team goes through a period of establishing new norms and relationships, and understanding values and priorities. The new leader is seeking an understanding of the critical business drivers and the skills and abilities of the team while the team members are seeking to understand the new leader's "hot buttons", values and communication process. During the period of transition, the team's effectiveness can be greatly diminished.

A change in leadership also provides an opportunity for a departing leader to share and transfer their critical knowledge and insights.

GETTING STARTED:

The workshop is a facilitated, half to one day, workshop to help the leader and team "let go of" the departing leader and begin the building of the new relationships with the new leader and between the team members. The process contains four main phases with the outgoing team leader participating in only the first phase.

Phase one: The outgoing leader shares with the team his/her perceptions of the team's successes, disappointments and activities/initiatives that is important to continue. He or she also shares key insights, lessons learned and other relevant knowledge (key relationships with internal and external stakeholders, clients, partners and suppliers) that they feel is important for the team to know and understand The team and incoming leader asks clarifying questions where necessary and the outgoing leader departs.

Phase two: The team members and incoming leader introduce themselves to the "new team" and shares with the team what they have heard about the incoming leader.

Phase Three: The team members then generate and prioritize their ideas on the critical things for the incoming team leader to be aware of and give attention to during the next 6 months. The team then shares these with the incoming team leader using clarifying dialogue.

Phase Four: The incoming leader shares with the team his/her beliefs/values and "hot buttons" (behaviours that the person will not tolerate).

Leadership Transition Workshop Outline:

Attendees:

- **Outgoing Team Leader** (beginning only)
- **Incoming Team Leader**
- **Team Members**
- **Facilitator**

Bellow is an agenda template for a Leadership Transition Workshop.

Agenda:

1. Brief overview of mtg and reasons for holding it. **Facilitator** (10 mins)

2. **Outgoing Team Leader** (45 – 60 mins)

Summarize:

- Successes during tenure
- Things to continue
- Personal knowledge and insights they have gained during their tenture in the position

Final comments - **<Outgoing Team Leader leaves mtg>**

3. Introductions and goals for remainder of mtg (About 5 min per person)

- Everyone introduces themselves stating personal strengths, weaknesses, concerns and shares what they have heard about the incoming leader.
- Facilitator checks with the group: "Is there anything we need to specifically focus on or anything we need to specifically avoid?" (Facilitator captures all ideas on flip charts)

. **<Incoming Team Leader leaves** meeting for Item 4>

4. Facilitator leads group to capture main issues (1 to 2 hours)

What the new leader needs to be aware of - focusing on things critical to next six months. What stands out from the personal knowledge shared by the departing leader? Of these prime issues which are the highest priority. Differentiate between those issues which TL needs to be aware of vs. those that require his active participation. (Facilitator captures all ideas on flip charts)

<New Leader returns>

5. Team briefs leader on issues - dialogue- ask if TL is clear on issues - TL asks questions to clarify as necessary - Identify actions (1 hour)

6. New leader shares his/her values and hot buttons (20 mins)

7. Review Action Items and Close

Source:
This guide is based on the work of Kent Greenes (www.greenesconsulting.com) and the KM Teams at British Petroleum and SAIC from 1995 to 2006.

SUPPORTING TOOL/RESOURCE 26: MENTORING

The mentor is an experienced person who is able, willing and available to teach, train or coach a person with less knowledge in a specific area – regardless of age, gender, or expertise in other unrelated areas. The mother with four children may be a mentor to young parents, the young computer champion to a senior staff, and the senior expert to the young professional. Mentoring aims at (1) skills development, (2) fostering the understanding of the organization and its culture, and (3) career development.

Beside this traditional mentoring (with fixed roles), peer mentoring (with interchanging roles) and team mentoring (with a network structure) are practiced, the latter two having common features with other approaches (peer assist / peer review).

Getting Started:
Reflect on own past experiences as a mentor or mentee (beneficiary). What has been a great experience? What made it successful?

Check the mentoring concept (as a part of the knowledge management) of your organization: What are accepted standards?

1. Determine the goals of the mentoring process. Define the beneficiary's expectations and preferred learning styles, and reveal the mentor's concept.
2. Choose the right mentor. Experience, knowledge and skills are one thing – a fine relationship between mentor and beneficiary the other. Your boss might not be the best mentor for you.
3. Develop a mentoring plan. Include moments for emergencies.
4. Define objectives for each meeting. Focus on the beneficiary's situation and questions, not on the mentor's experience.
5. Give up the mentoring when you feel strong enough.

A Tale of Two Travellers
In the town square of a small mountain village, two travellers became acquainted and began to discuss and compare how they had arrived at their remote location. Each had travelled alone and had followed a similar path from the same major city; however, for each the overall experience turned out to be quite different. For the first traveller, the journey became a long and frustrating ordeal. He found his map of limited use because of several encountered detours and obstacles and it took considerably longer than anticipated to cross the various mountain passes. At times he felt lost, confused, and as if he were wandering in circles. He prayed he would never need to make the trip again.

For the second traveller the opposite was experienced. She described her trip as enjoyable and eagerly anticipated future return trips "up the mountain". Upon further questioning, the second traveller revealed a key distinction. As she had made her final preparations for the journey, she happened upon an individual who frequently travelled to and from the village. This individual took the time to explain some of the important geographical features that would be encountered on the journey. Not only did the experienced individual counsel the traveller on how to prepare and plan for the required changes in route, but he pointed out interesting sites to see along the way, places to rest, and what to anticipate upon arrival. This information was found to be accurate and useful.

Why the differences in the experiences of these two travellers? Both started from the same place, both had similar maps and plans, and both were travelling to the same destination. The key difference appears to be the information provided by a more experienced individual to someone with less experience. In today's world, where change is the

norm, constant upgrades of skills are required. More and more individuals with little or no experience are being required and to adapt to change quickly -- they are being asked to frequently journey "up unknown mountains". Now, more than ever, there is a need for those with greater expertise and experience to assist those at a more novice level. This need may be addressed by pairing experts and novices so that one can help, guide, and teach the other. This is the role of Mentoring and the need for a systematic Mentoring process.

WHAT IS MENTORING?

Mentoring is a method of teaching and learning. Although it has been defined in many different ways, our choice is to select a broad definition that includes several key elements. We believe Mentoring involves the use of an experienced individual to teach and train someone with less knowledge in a given area (see Newby & Heide, 1992).

As shown in Table 1, this definition highlights three important elements of Mentoring relationships. First, the experienced individual, or **Mentor**, is one who possesses important/critical information, skills, and/or past experiences. Second, a less knowledgeable or inexperienced individual, the **Mentee**, is in need of attaining specific information, training, or experiences pertaining to a given area or topic. And finally, a **relationship** between the experienced and the inexperienced individuals that allows for the knowledge of one to be used to facilitate the growth of the other. For example, in our opening tale of the travellers, one had a significantly better journey due to the information provided by an individual (the Mentor) who had prior experience with the route the travellers were taking. Because of that input, the second traveller was able to reach her destination more efficiently, have a more fulfilling journey, and achieve her goal more confidently.

This is very similar to what occurs in a good Mentoring Knowledge relationship. Someone with more experience helps an individual with less experience. This does not mean that the Mentor takes over and completes the tasks for the Mentee, but that the Mentor through explanations, guidance, coaching, and encouragement helps the Mentee while he/she develops his/her own skills and expertise.

Table 1: Key Individuals and Roles within the Mentoring Process

Key elements in the Mentoring process	Commonly related terms	Role(s) performed in the Mentoring process
Mentor	Expert, coach, counsellor, tutor, guide	An individual with the experience, knowledge, and/or skills of a specific content area who is able, willing, and available to share this information with another individual.
Mentee	Protégé, novice, apprentice, trainee, student, learner	An individual who lacks experience, knowledge and/or skills in a specific area and who looks to another individual(s) to gain that which is lacking.
Relationship between the Mentor and Mentee	Association, pairing	A dynamic association between an individual who needs to learn and another who is willing to help and guide the learner.

When and with whom can mentoring be used?

Have you ever had (or been) a Mentor? Reflect over your past experiences and ponder those instances in which you have interacted with another individual in such a relationship. What was the situation involving your association? What type of an experience was it?

Mentoring, in some form or another, has been used as an instructional technique for centuries. Its use has continued because it has proven to be a very effective means of teaching and learning. Table 2 illustrates the wide range of areas in which potential Mentoring relationships can occur. As is shown, Mentoring may impact individuals across all types of content areas and settings.

Table 2: Examples of Potential Mentor/Mentee Relationships

Potential Mentors	Potential Mentees	Potential learning relationship
Mother of 4 children	A set of new parents	Coach new parents on how to identify illnesses that warrant a doctor's attention. Help them understand what to expect during different stages of a child's development
Teacher with 10 years of classroom experience	Student teacher	Help the student teacher understand the practical constraints that will be experienced in the classroom Help the student teacher learn how to plan, implement, and evaluate classroom lessons. Offer assistance in learning how to respond to classroom management problems
A middle school computer whiz kid	Teacher with 25 years experience in teaching	Coach the teacher on how to use the computer for different tasks (e.g., e-surfing, spreadsheets, word processing)
Plumber	Plumber apprentice	Teaches how to estimate jobs Instructs how to design standard home plumbing that will meet building codes Teaches how to identify and resolve different plumbing problems in commercial settings

Potential Mentors	Potential Mentees	Potential learning relationship
Computer technologist	Any individual within an company needing assistance regarding a new technology	Works with groups of individuals who need this technical knowledge quickly, but have been unable to attend a formal training class
Office professional at a banking firm	New hire in the banking firm's secretarial pool	Guides the new secretary through office procedures (e.g., phone protocol, general duties) Describes the culture of the organization and how one survives within the organization
Senior project manager	New project manager	Advises regarding specific problems encountered in projects within their own organization, department, and division where "theory" becomes "application"
Director of Marketing for a major corporation	District sales manager within the corporation	Gives special assignments and projects to the sales manager and tutors him on how to accomplish them effectively. Indicates to others what capabilities the sales manager possesses Gives the sales manager opportunities to learn skills needed for a promotion to a marketing director
Administrative assistant	Vice President of Sales	Teaches word processing and e-mail skills so that the VP can use his new laptop computer while travelling.

In reviewing the different examples in Table 2, note how the typical image of the "old sage" type of Mentor paired with the "young and eager" type Mentee does not always hold (e.g., the computer whiz kid and the teacher). Frequently the best Mentors are those with a special knowledge or capability in a given area of expertise -- regardless of their age, skill level, race, gender, or expertise in other unrelated areas. Additionally, it must be pointed out that Mentoring is not a stagnating relationship -- but one that is dynamic and always changing. As situations change, the Mentor and Mentee roles evolve and change. Moreover, in a society in which change is the norm, those who may be quite capable serving as Mentors in one area of content, find themselves seeking help from other individuals in other areas.

The next section outlines several different ways Mentoring can be structured. In this way you can begin to see how encompassing this instructional technique is and how widely it can be applied.

In what ways can mentoring be focused?
Just as there are different types of individuals with different types of learning needs, there are different ways in which Mentoring can be focused to enhance a novice's learning. Generally, these can be categorized into one of the following: (a) a skill-based emphasis, (b) an organizational and cultural emphasis, or (c) an emphasis on one's career path. After briefly describing each of these types, Table 3 presents situations where each would be an appropriate selection.

Skill-Based Emphasis
This emphasis of Mentoring concentrates on helping individuals improve and develop skills in areas where they are deficient. Not only is information provided, but frequently the Mentor designs specific situations in which the Mentee can practice these new skills without risk or "being on the line." Examples of this, in Table 2, include the middle-school student mentoring the teacher in computer skills, the surgeon coaching the medical student on a new procedure, and the administrative assistant helping the VP acquire computer application skills.

Organizational and Cultural Emphasis
The focus of this Mentoring is to foster an understanding of the organization, its culture, its vision, its history, and its status in today's world. This is much more than the standard "orientation program" presented to many new employees. This type of Mentoring is normally facilitated by individuals who have been with the organization for many years. These individuals have typically witnessed many changes and can share this type of "history" so that the Mentee understands what the organization stands for, how the culture operates, and how it has evolved. Frequently the novice is mentored on how to "manoeuvre" within the organization to get things accomplished, as well as, which individuals to contact for specific needs. Moreover, some of the organization's customs and policies, both those that are stated and those that are "unstated but understood" may be explained. Table 2 includes the example of an office professional in a banking firm and describes how the "culture" of the organization was taught and explained and shared with the new secretary. This example illustrates Mentoring with an organizational and cultural emphasis.

An application of this Mentoring focus also occurs when organizations desire to change their culture (e.g. going from a "high tech" culture/business to a more "consultative" culture/business). Individuals who are the best examples of the new culture (which in some cases may be new individuals to the organization), are called upon to be Mentors for others within the organization.

Career Path Emphasis
The focal point of this Mentoring is on "upward" mobility and career enhancement, as opposed to behaviors and activities that promote skill performance. From a business viewpoint, this is the more traditional way in which Mentoring has been carried out. Normally with this emphasis, Mentors are at higher levels in the organization and the goal is to "showcase" or "champion" the Mentee to other senior levels. The Director of Marketing and his emphasis on championing the younger sales director in Table 2 is an illustration of this type.

Table 3: Examples of How the Mentoring Process can be focused

Focus of the Mentoring	Example situations with a need for a specific Mentoring emphasis

Focus of the Mentoring	Example situations with a need for a specific Mentoring emphasis
Skill-Based	John is a newly appointed shop foreman. He has been in the shop for several years, but he has never had direct supervisory responsibilities. Although he knows the jobs of each of his employees, he does not have prior experience managing his crew. Landon has been with the company for a number of years but has repeatedly been rated below average on his work output. He is frustrated with his ratings and with the quality of work that he is required to produce. Karen is a Restaurant Chef. She has just completed a course in "State Health and Sanitation Procedures". She has some ideas that she would like to try out within her restaurant, but she is not sure that her manager will allow her to do so.
Organizational and Cultural	Helen has worked with a small consulting firm for a number of years. Recently she has accepted a position in a large international accounting firm. Her responsibilities will require her to interact frequently with partners in the corporation and with others who will be dealing directly with the company and its products. Bill is about to be transferred to Germany. He has taken several language courses and classes regarding the business and social customs/norms. He has not actually been able to use his knowledge, given that there are very delicate negotiations going on at this moment, he is a little anxious about how he will handle situations when he first arrives. Maria is an Hispanic female. She is very interested in growing and developing within the organization but is not quite sure how to do this. Her immediate manager is a white male and Maria is having difficulty talking with him regarding how to make the transition from "where she is now" to "where she wants to go" in the future.
Career Path	Alexis is a young college graduate with a very promising future at her new job with Apex Publishers. Unfortunately for Apex, Alexis is still receiving offers from several competing firms. To retain her, Apex must come up with a way to ensure that she quickly feels comfortable and clearly sees where she is going within their organization. For the Carew Bottling Company it has been determined that only a very low percentage of females and minorities hold management and leadership positions. The objective is to identify those individuals within these diversity categories who have necessary leadership skills and prepare them for advancement. For Johnson Chemical the future looks very promising with predictions of accelerated growth during the next five years. To accomplish this feat, a group of 50 candidates who possess the skill necessary for management have been identified. The objective is to ensure that the organization will meet its growth objectives and be prepared to fill management positions as they arise.

There will naturally be cross over during the Mentoring process. It should be expected and desired. The main reason for Mentoring may be, for example, to teach a new skill, however, during that process a career path may be discussed and outlined, and suggestions for growing within the culture of the organization may be made.

WHAT ARE THE DIFFERENT METHODS OF MENTORING?

As illustrated by the examples in Table 2, Mentoring relationships can be developed across all types of content areas and throughout all types of professions and learning situations. Additionally, Mentoring can take several different forms, based on the specific situation in which participants find themselves.

The Standard/Traditional Mentoring Method

When the term "Mentoring" is used, we traditionally picture an older, wiser sage taking a younger enterprising person "under his/her wing". The inexperienced individual has the benefit of gaining information from the sage, as well as other valuable counsel, encouragement, and protection. The focus is on the one-on-one relationship between these two individuals. Frequently, this relationship requires a lengthy period of time to develop, grow, and thrive.

Examples include the master glass blower who spends extra time and effort to help a new apprentice gain the skills needed to create the needed glassware, or a top executive of an international telecommunications firm who guides and grooms a younger member of his staff so that she can "step into his shoes" once the expert is no longer available. Both examples stress the traditional need for the Mentor/Mentee pair to spend time together in order for the novice to grow and develop under the watchful eye of the expert. Moreover, this "traditional" type of Mentoring may come to emphasize skill development, organizational and cultural knowledge development, and/or career path development.

Throughout the Mentoring process, the relationship between the participants will naturally change and evolve. As the Mentee gains more confidence and experience, for example, the Mentor usually needs to pull back and allow the Mentee to take on more responsibility. A progression usually occurs that begins with the Mentee being fairly dependent on the Mentor and ends with the Mentee becoming quite independent. This progression usually continues until the Mentee comes to be viewed by the expert more as a colleague and resource rather than as a student or apprentice.

The Peer Mentoring Method

A major problem that frequently develops with the traditional Mentoring method is the lack of qualified, desirable Mentors. This problem is often compounded because of Mentor/Mentee gender, race, and/or age differences. To address some of these issues (especially with skill deficits and with organizational and cultural issues), individuals can focus on developing what is known as peer Mentors.

For example, if an individual needs to be coached or mentored on a specific skill (e.g. the use of a new computer application), he/she may find it easier, more efficient, and potentially more effective to associate with a peer who possesses the targeted skill and capability. Peer Mentoring generally focuses on a specific skill, develops in a short period of time, and usually concludes once the new skill is acquired. Frequently, as peers begin to use this form of Mentoring, the Mentor/Mentee roles may begin to interchange. That is, a Mentor for one specific skill may assume the role of a Mentee in order to develop or upgrade a different skill.

In a rapidly changing environment (e.g., computer technology) the interchanging roles of the peer Mentor/Mentee is often facilitative. Thus an individual both Mentors and receives Mentoring.

The Team Mentoring Method

Although this is similar to the peer method, this method expands to include a group or team of individuals. In this case, a given Mentee may have more than one Mentor (with each Mentor addressing a different aspect of the Mentee's professional needs and pursuits). It is also possible with this method an individual may play two roles simultaneously, that is, as a Mentee receiving organizational and cultural Mentoring from one member of the team, while at the same time providing skill-based Mentoring for another team member. Frequently such teams are created by bringing together individuals who have experienced the benefits of peer mentoring, but who see a need to broaden the levels of skill expertise or increase their base of information.

Facilitated Group Mentoring Method
A number of people to participate in a learning group to benefit together from the experience and expertise of a mentor or mentors. The facilitator asks questions to ensure a meaningful dialogue, shares their own personal experiences, provides feedback and serves as a sounding board.

Reverse Mentoring Method
Reverse Mentoring: This is a new and rapidly evolving concept in which a more senior person is mentored by a more junior person. It assumes that the less experienced novice also has valuable and valued knowledge/skills to impart to the more experienced expert. The mentee becomes the mentor bringing an element of reciprocity into the relationship.

Some things a boomer might want to know from a Gen Xer or Yer include learning about new collaboration technology such as IM, Blogs, Wikis, etc; their perspective on specific products, services, and customer offers; and perspectives on the company culture and ways of working.

Some things a Gen Xer or Yer may want to learn from a baby boomer beyond expertise include connectivity in the company - who do they need to know to get something done?

GENERATIONAL ASPECTS OF MENTORING

The Research Working Group's latest understanding of generational learning styles and discussion sessions have been incorporated into the following outline of mentoring steps and tasks.

"Mentoring is a process that is compatible with baby boomers' values and work style. Mentoring involves being collegial, talking, sharing (not telling), and developing solutions together," observes Lindenberger and Stoltz-Loike, in their book, Mentoring and Baby Boomers. "It is also optimistic, which is typical of most baby boomers' outlook on the world. When generations work together in strategic, business-related activities such as mentoring, everyone benefits. The mentee builds new business knowledge, and the mentor often gets reenergized and reengaged in business opportunities. We find unique satisfaction in nurturing these synergistic relationships."

"The business knowledge of 20-year-olds and that of 50-year-olds is profoundly different. The technology facility and ability to multi-task among 20-somethings is unparalleled and impressive. But the knowledge, experience, creativity, and business acumen of 50-somethings is also unparalleled and equally impressive in a very different way. Cross-generational mentoring provides one of the most significant ways for integrating these diverse abilities."

GENERAL APPROACH:

Mentorship goals are co-developed to provide focus and relevant measures for performance. Through a series of conversations, augmented by face-to-face meetings as appropriate, the mentor will listen, question, coach and advise the mentee to meet the established goals.

Tasks:

1. Identify people with critical knowledge and/or critical mentoring needs
2. Train potential mentors in how to mentor
3. Establish opportunities for younger people to interact and meet potential mentors
4. Mentor and mentee agree goals, key milestones, frequency of interactions and 'code of conduct'
    - Leveraging Learning Styles - Not everyone learns the same way, so mentors shouldn't teach the same way. A discussion between mentor and mentor should be held early on to identify preferred learning styles and to help the mentor recognize which style best fits the mentee.

- Managing Communication - Gen Xer's and Yer's work many tasks at the same time and have an ability to shift quickly from task to task. Many will expect to be mentored while they are doing others things online. Baby boomer mentors should be open to using tools such as **Instant Messaging (IM)** as a communication method if they want to meet a young mentee "where they are at."
- Where Do We Start? - Often a mentor's vast knowledge overwhelms the mentee. This discussion can help figure out where to begin, what doesn't need to be said and how to organize needed information into manageable, useful chunks. This last part could be particularly useful when designing mentoring with Gen Yer's, who prefer to get their information and knowledge in brief and concise forms without a lot of context or history.

5. Engage in scheduled and ad-hoc conversations to meet agreed specific goals.
6. Hold retrospective learning session at key milestones and end of mentorship
7. Managers of mentor and mentee encourage growth of both participants

Good Practices

The following mentoring practices have been shared and put into practice by multiple organizations:

- Manage broader organizational expectations of cost and commitment - "Mentoring programs are not free. They require vision, commitment and effort.[1]"
- Agree to performance measures and targets for both the mentor and mentee
- Make coaching and mentoring are a regular part of day-to-day activity throughout the company
- Encourages and facilitates mentoring relationships (e.g., lunches, mentee assignments, in professional networks and Communities of Practice, etc.)
- Give every high-performer a mentor
- Identify developing people as a key skill for a successful manager
- Recognize and reward managers and individual contributors for their skill and commitment to coaching and mentoring

Common Pitfalls

The following barriers and problems in the implementation of mentoring have been observed across many organizations:

- Expectations are not managed, especially the time commitment required by both the mentor and mentee, and participants not having the license to spend the time required to be successful
- Mentors not trained in how to mentor
- Assumption that one size fits all when it comes to learning styles
- No application of what is learned

New Ideas

Members of the Research Working Group brainstormed ideas for enhancing the mentoring process during the September, 2007, meeting. Some of the ideas that emerged from that session include:

- Use social networking to un-bundle mentoring (i.e. get answers to 10 questions from 10 different experts);
- Companies often teach theory and then send their novices out to practice – maybe it should be done more or less in reverse: Send out the novices to do and practice, then teach the theory;
- Expand mentoring to those not separated by many levels of hierarchy.

Source:

Cornerstone Consulting (http://www.cornerstoneconsults.com): Timothy J. Newby and Judy Corner: Mentoring for Increased Performance: Foundations and Methods (originally published in *Performance and Improvement*, 1997).

The Mentoring Group: Mentoring: An Investment for the Future, www.mentoringgroup.com

http://intranet.umanitoba.ca/academic_support/uts/media/mentoring.pdf

Asian Development Bank
http://www.adb.org/documents/information/knowledge-solutions/coaching-and-mentoring.pdf

Useful Links and Resources

Healy, C. C., & Welchert, A. J. "Mentoring Relations: A Definition to Advance Research and Practice," Educational Researcher, 19(9), 1990, pp. 17-21.

Murray, M., & Owen, M. A. Beyond the Myths and Magic of Mentoring. San Francisco: Jossey-Bass, 1991.

NEWBY, T. J., & HEIDE, A. "THE VALUE OF MENTORING," PERFORMANCE IMPROVEMENT QUARTERLY, 5(4), 1992, PP. 2-15.

Kathy Kram's seminal book, *Mentoring at Work* (Glenville, IL; Scott, Foresman, 1985), is one of the most comprehensive accounts of the dynamics of mentoring relationships. In the context of our work in knowledge transfer and different generations, useful references can also be in the following articles and publications:

- Beware of the Boomer Brain Drain_Harris_2006
- Saving Retiring Knowledge Workers' Secret Sauce_Seidman_2006
- THE COMING KNOWLEDGE AND CAPABILITY SHORTAGE_Doran et al_2006
- Mentoring and Baby Boomers, Judith Lindenberger and Marian Stoltz-Loike, Ph.D., 2005. (http://www.lindenbergergroup.com/art_mentor_babyboomer.html)

SUPPORTING TOOL/RESOURCE 27: RETIREES ON RETAINER

Knowledge retention and transfer does not stop with retirement. Best-practice organizations use their retirees to provide needed skills and experience on specific projects, to mentor junior employees, and as participants in storytelling and training activities that allow them to share their experiences.

Returned retirees provide organizations with experts available to train or share specialized knowledge.

Why:

- Specialized knowledge may be accessed from a readily recognized and available source

When:

- Knowledge is mission critical
- Retiree is immediate source of knowledge

How:

Determine what knowledge employees need to know. Identify the retiree who possesses the knowledge, coaching and knowledge transfer skills and is willing and available to return to work.

Do's & Don'ts:

- Allow time for various knowledge transfer practices to be implemented in agency
- Organization should be able to perform critical tasks after knowledge transfer
- Retiree on retainer should not continue to be sole source of knowledge

Example:

Retiree provides: training program on specific program procedures; advice and consultation during special situations; written trouble shooting guide for future performers

Retiree on retainer is typically having experts available to train or share specialized knowledge. There may be federal/provincial/territorial limitations when agencies want to re-hire retirees. This is more often practiced in the private sector. It can be costly and must have clearly defined goals, time frames and parameters.

Source:

http://www.delawarepersonnel.com/orgdev/documents/knowledge_transfer_tools.pdf
http://wyomingworkforceplanning.state.wy.us/documents/Knowledge%20Transfer%20Tools.pdf

SUPPORTING TOOL/RESOURCE 28: STRUCTURED ON-THE-JOB TRAINING

Research has shown that casual, informal On-the-Job Training (OJT) does not provide consistent instruction for someone that is new to their job. In addition, bad habits are quite often passed down from one worker to the next in this type of arrangement. When trainees receive a different set of work instructions from each shift or team leader, performance of the learner suffers and worker morale is adversely affected. Unstructured or informal OJT can be incomplete, including only partial elements of the job, and is many times done in a hurry, often lacking the very important feedback regarding how well the job or task has been done. Without systematic feedback regarding job performance, the ability to create lasting, permanent knowledge can be limited. SOJT on the other hand uses a formalized system that breaks the training down into manageable units or chunks and provides consistency from shift to shift and day to day. A standardized work system that consists of well-written procedures, work instruction packages and job-aids provide a road map for consistent, sustained knowledge creation and learning.

- Use good performers who can also teach & coach
- Provide training & resources for those coaching
- Analyze the job, breaking into tasks, and develop procedures and aids for teaching
- Describe, Describe & Demonstrate, Trainee Performs, Trainee Describes & Performs, Trainee Practices
- Tell trainee where to go for help
- Follow-up with trainee

On-the-job training focuses on the acquisition of skills within the work environment generally under normal working conditions. Through on-the-job training, workers acquire both general skills that they can transfer from one job to another and specific skills that are unique to a particular job. On-the-job training, typically includes verbal and written instruction, demonstration and observation, and hands-on practice and imitation. In addition, the on-the-job training process involves one employee—usually a supervisor or an experienced employee—passing knowledge and skills on to a novice employee.

On-the-job training is the oldest form of training. Prior to the advent of off-site training classrooms, the only practical way of learning a job was working alongside an experienced worker in a particular trade or profession—as evinced by the practice of **apprenticeship** during the Middle Ages when master craftsmen passed on skills and knowledge to novices who worked alongside them.

On-the-job training is still the predominant form of job training in the United States, particularly for non-managerial employees. Numerous studies indicate that it is the most effective form of job training. The largest share of on-the-job training is provided by the private sector, though the most widely studied training programs are those sponsored by federal legislation.

On-the-job training programs range from formal training with company supervisors to learning by watching. In this sense, the most formal types of on-the-job training are distinct from classroom training largely in that they take place within the firm. In the face of increased international competition and the more widespread use of computers in production processes, the implementation of more formal and sophisticated kinds of on-the-job training has become a critical issue for firms[9].

Types of on-the-job-training

[9] On-the-Job Training http://www.referenceforbusiness.com/encyclopedia/Oli-Per/On-the-Job-Training.html#ixzz0yCU4r8Iw

Two different types of on-the-job training are frequently distinguished in the professional literature: structured (planned) and unstructured (unplanned). Unstructured is the most common kind and refers to loose on-the-job training programs that largely involve a novice employee working with an experienced employee, who serves as a guide or mentor in an observe-and-imitate training process. The new workers largely learn by trial and error with feedback and suggestions from experienced workers or supervisors. Unstructured training is designed based on work requirements (e.g. manufacturing products), not on imparting job skilled needed by new workers (e.g. the specific skills needed to manufacture products). Consequently, unstructured on-the-job training often fails to impart needed skills fully or consistently, because experienced employees sometimes are unable to articulate clearly the proper methods for performing a job and they sometimes use different training methods each time train new workers.

One of the first structured on-the-job training programs was launched during World War I in the shipbuilding industry by Charles "Skipper" R. Allen, who based the program on the ideas of the psychologist Johann Friedrich Herbart. Allen sought to make training more efficient by having trainees undergo four steps[10]:

1. Preparation: show workers what they are required to do.
2. Presentation: tell workers what they are required to do and why they are required to do it.
3. Application: let workers perform the required tasks.
4. Inspection: provide feedback, informing workers of what they have done right and what they have done wrong.

On-the-job training received renewed interest during World War 11 when Allen's program was expanded to include seven steps:

1. Demonstrate how to complete a task.
2. Review important points.
3. Demonstrate task again.
4. Let workers perform easier parts of the task.
5. Help workers perform the entire task.
6. Allow workers to perform the entire task, while being monitored.
7. Allow workers to perform the task on their own.

The seven-step approach to on-the-job training became known as "job instruction training" and studies indicated that this approach led to increased productivity during World War II.

Contemporary approaches to on-the-job training emphasize the training of novice workers by experienced workers who possess not only the skills necessary for the tasks to be learned but also the skills as a trainer. By selecting such trainers, companies can achieve consistency in training content, methods, and results. In addition, structured on-the-job training is viewed as a process that includes training inputs (novice employees, experienced employees, and tasks to be learned), a training program, and training outputs (job performance and novice employee development). The process begins with the selection of qualified trainers and trainees: trainers must know the tasks and know how to communicate how to perform them and the trainees must be able to learn the tasks. In addition, the tasks to be learned and the training goals must be identified. Based on this information, companies can establish a training program. Next, the training program is implemented: the experienced worker prepares to train the novice worker and takes steps to ensure that the trainee understands the tasks to be learned and that the trainee actually learns to perform these tasks. The implementation of the training program also should follow a specific timetable and hence it should help new employees learn needed skills more quickly and systematically than unstructured programs. Finally, the training outputs result from the training inputs and the training program. If all goes well the training outputs should include the trainee being able to complete assigned tasks adequately in accordance with the training

[10] http://www.referenceforbusiness.com/encyclopedia/Oli-Per/On-the-Job-Training.html

goals. After a training program is finished and new employees begin to work on their own, the training process—inputs, the training program, and outputs—must be assessed to make sure that it successfully prepared workers for their tasks and any necessary modifications should be made.

Source:
http://www.gemi.org/resources/EHS_108.pdf

On the Job Training, White Paper, September 2007
http://www.rwd.com/uploadedfiles/industries/consumer_products/manufacturing/structured%20on%20the%20job%20training%20white%20paper.pdf

SUPPORTING TOOL/RESOURCE 29: SUCCESSION PLANNING

Additional information on Succession Planning is available within Step 3 Phase II.
What follows is further high level overview information on succession planning:

Benefits of Succession Planning

- Succession Planning is a critical people management practice that enables the organization to identify, develop and retain key talent
- Lowered dependency on specific individuals
- Key knowledge is maintained within the organization
- Detailed knowledge transfer planning will ensure continuity of service quality
- Minimal disruption to business as usual

Challenges

- High dependency on some key people
- If several key management people are leaving the organisation at the same time
- Low local capacity for proposal development
- Successors not identified / new structure not in place
- Lack of time to conduct all necessary handovers

High level overview of an approach to succession planning

- Conduct knowledge assessment for key areas
- Identify successors
- Develop Knowledge Transfer plan and timelines
- Communicate plan
- Document key information / processes
- Expand roles of existing team people to ….
- Restructure to allow for shared activities ….

A SYSTEMATIC APPROACH FOR EXPERTISE TRANSFER: HIGHLIGHTS FROM AIRBUS

Airbus is one of the world's leading aircraft manufacturers. With an international workforce of over 57,000, the organisation is characterised by complex design and manufacturing processes, distributed work across 16 sites and global subsidiaries, and a deep integration of suppliers in all company processes.

The aeronautic industry is an area where new product development and production are based on very knowledge intensive processes. Engineers must juggle continuous tension – bridging new technologies and research with profound knowledge and deep experiences from long lasting programmes – sometimes with product life cycle of 30 years or more. As such KM takes an important role in the company's strategy to strengthen its competitiveness. In a central organisation on the different engineering sites, Airbus has built a multidisciplinary KM team with competencies and expertise from engineering, sociology, linguistics, psychology, pedagogy, computer science and management science for the development and deployment of KM solutions. The team is closely interfaced with the departments for information technologies, documentation, and personal and organisational development.

One of the most important business needs Airbus's KM team needed to address is the retention of knowledge and experience when employees are leaving the organisation or changing positions. To address this situation, Airbus has developed the Expertise Transfer (ExTra) approach that supports the identification and transfer of valuable

knowledge and experience in order to allow its reuse by colleagues and successors. So far, Airbus has applied the ExTra approach very successfully in areas of retirements, job changes, or changes in management positions.

What follows is an overview of the ExTra approach introduced at Airbus to help support Expertise Transfer. ExTra is built on the following four main elements:

- ⇒ a *process* – to ensure a systematic and standardized approach,
- ⇒ a *transfer network* – to ensure a stable embedment in the organization,
- ⇒ a *transfer cell* – to ensure the professional operation of the individual case,
- ⇒ *Knowledge transfer methods* – the use of a variety of methods to ensure the appropriate transfer approach for the specific situation, flexible enough to transfer expert knowledge as well as experience based knowledge about, e.g., social interfaces/networks/key people and/or management style.

The approach followed is based on 5 key steps:

1. *Expert identification* locates the person or group with the critical/relevant knowledge that is to be transferred. This task becomes even more challenging in complex organizational environments where movements of employees, transfer of work shares and re-organization activities happen constantly. The need for knowledge transfer actions may stem from different reasons, e.g. retirements, change of position in the company, people leaving the company or transfer of activities between organizational units. To support a strategic approach to expert identification, Transfer Networks were implemented in the different business areas. These networks consist of local management representatives, HR representatives and employees of the knowledge management department and meet typically twice a year to identify critical knowledge areas and review and identify candidates who have this knowledge and assess the need to transfer the knowledge. These networks are a connecting link between formal planning processes and informal notifications and serve as an early warning system to long term business and HR planning. Knowledge mapping is a tool that can be used to help identify expertise for transfer.
2. **Note:** Supporting Tool/ Resource 08: Knowledge Mapping - page 39.

3. *Kick-off meeting:* If a candidate for Expertise Transfer is identified within a Network on the basis of specific criteria, a T*ransfer Cell* convenes at a kick-off meeting. This Transfer Cell is made up of the knowledge provider, the knowledge receiver, the direct superior and the facilitator and process coordinator. The kick-off meeting is a major step in creating trust and achieving a joint commitment. Due to the fact that certain issues need to be synchronized with the human resource department, participation of HR in the kick-off meeting is recommended as well.

4. *Analysis and action plan:* After the kick-off meeting, a facilitator or a knowledge exchange coordinator is appointed who performs an analysis. Through semi-structured expert interviews with the knowledge provider, the knowledge receiver(s), the manager (strategic perspective) the requirements, needs, objectives and expectations of all participants involved are identified. In this step, the focus is on the knowledge provider. Though, it is also recommended that colleagues of the knowledge provider be consulted to get an idea of the provider's role within a social network as well as an idea of the network itself. The result of the analysis is a detailed action plan tailored to the respective situation. This plan defines relevant knowledge areas and specific transfer actions. It will be implemented by the transfer cell.

5. *Implementation of knowledge transfer actions:* Within the Transfer Cell different methods are used to facilitate and support the expertise transfer, depending on the situation and needs of the participants involved. The set of methods includes, for instance, facilitated transfer talks and workshops, an organized personal contact transfer, a structured overlapping period and the preparation and implementation of complex training modules.

Facilitated transfer talks as well as special network workshops, in particular, are appropriate to transfer knowledge about helpful social interfaces to colleagues or implicit knowledge about a proven management style. During these workshops, the facilitator's role is to motivate the leaver to tell some anecdotes about extraordinary work situations, e.g., by asking stimulating questions. Anecdotes as well as metaphors often convey parts of the narrator's implicit knowledge about how to manage certain problems successfully. That way, facilitated talks can make the leaver share his/her knowledge and experiences about both informal cross-connections and his/her way to use, sustain and strengthen those social interfaces.

6. *Evaluation:* of the transfer process is undertaken at the closing session and a feedback questionnaire: At the end of this process, the success of the actions is evaluated by using a dedicated feedback questionnaire. Either the needs of the transfer cell members are met and the process is formally closed (closure phase), or, in case that additional transfer actions become necessary, the action plan is completed with further actions.

The action plan and success plan are closely related and will likely support one another. A success plan can be defined as – process of determining critical roles within the company, identifying and assessing possible successors, and providing them with the appropriate skills and experience for present and future opportunities.

In other words succession planning comprises of these important steps:

⇒ Recruitment and staffing - you recruit superior and right employees;
⇒ Training and development - you train the employees to develop their knowledge, skills and abilities;
⇒ Performance and Compensation management - prepare them for advancement or promotion into ever more challenging roles; and
⇒ Other (in which talent management plays a role) - you are prepared to retain or replace superior employees.

Typical activities covered by succession planning include:

⇒ Determine what roles and skills are critical for the growth of the company;
⇒ Analyze and address the gaps revealed by the planning process;
⇒ Identify and understand the developmental needs of employees to fill those positions;
⇒ Ensure that all key employees understand their career paths and the roles they are being developed to fill;
⇒ Train people for skills and positions that are not presently existing in the company;
⇒ Understand the time needed to backfill key roles;
⇒ Enrich succession plans through regular executive discussion of people and posts;
⇒ Identify top performers in all departments and make sure that they are engaged and satisfied to stay with you for a long period; and
⇒ Continually review and check the process of succession and whether planned individual development has taken place.

Succession planning is a process by which successors are identified for key positions throughout an organization including vital roles in each department of the organization[11]. It should take into account the strategic vision and objectives of the organization. With good succession planning in place, employees are ready for new leadership roles so when someone leaves the company, another is skilled and ready to step-up to that position. Succession planning can also help develop a diverse workforce, by enabling senior management to look at the future goals of the organization as a whole. So the key issues the HR professionals should consider while developing a succession plan are:

- Strategic plans and future goals
- Workforce requirement
- Knowledge retention and critical roles
- Talent management strategies

This exercise will help identify your Subject Matter Experts (SME's) and based on this mapping will assist in knowledge mapping and tracking for future reference and use on projects, initiatives and other implementations based on corporate needs and objectives.

Source (closely adapted from):

Weber1, F., Dauphin, E., Fuschini, R., Haarmann, J., Katzung, A., Wunram, M. "Expertise Transfer: A Case Study about Knowledge Retention at Airbus, 2007.
http://www.ve-forum.org/projects/408/ICE%202007/Knowledge%20Management/40-129_Weber_final.pdf

Haarmann, J., Kahlert, T., Langenberg, L., Müller-Prothmann, T. "K.exchange - A Systematic Approach to Knowledge Transfer of the Aging Workforce". Pumacy Technologies AG, Berlin, Germany, 2005.

[11] http://www.successionplanning101.com/

SUPPORTING TOOL/RESOURCE 30: AFTER ACTION REVIEW

An after action review (AAR) is a discussion of a project or an activity. It enables the individuals involved to learn for themselves what happens, why it happened, what went well, what needs improvement and what lessons can be learned from the experience. The spirit of an AAR is one of openness and learning – it is not about problem fixing or allocating blame. Lessons learned may be tacitly shared on the spot by the individuals involved or explicitly documented and shared with a wider audience.

The size of an AAR may reach from two individuals conducting a five minute AAR at the end of a short meeting to a day-long AAR held by a project team at the end of a large project. Activities suitable for an AAR simply need to have a beginning and an end, an identifiable purpose and some basis on which performance can be assessed. A suitable moment for an AAR is the end of a project and each identifiable event within a project.

Steps in an AAR

- Invite the right people - appoint a facilitator - create the right climate.
- What was supposed to happen? Revisit the objectives and deliverables of the project.
- What actually happened? What went well? Why? What could have gone better? Share learning advice for the future.
- Ensure that everyone feels fully heard before leaving the meeting.
- Record and share important lessons Learned.

Benefits of After Action Review:

What makes after action reviews so powerful is that they can be applied across a wide spectrum of activities, from two individuals conducting a five minute AAR at the end of a short meeting to a day-long AAR held by a project team at the end of a large project. Activities suitable for AAR's simply need to have a beginning and an end, an identifiable purpose and some basis on which performance can be assessed. Other than that, there are few limits.
Some examples of when to use an AAR are: when you have introduced a new set of procedures or ways of working; after a busy winter season in which capacity was stretched; following the introduction of a new computer system; after a major training activity; after a shift handover; following a piece of research or a clinical trial; after performing surgery; etc.

AAR's are excellent for making tacit knowledge explicit during the life of a project or activity and thus allowing you to capture it. Learning can be captured before a team disbands, or before people forget what happened and move on to something else. Despite the name ('after action'), they do not have to be performed at the end of a project or activity. Rather, they can be performed after each identifiable event within a project or major activity, thus becoming a live learning process in which lessons learned can be immediately applied. In fact this is where AAR's can add the greatest value.

AAR's provide insights into exactly what contributes to the strengths and weaknesses of a project or activity, including the performance of each individual involved, of the project leader, the team as a whole, and the various processes involved.

AAR's are also a useful tool for developing your employees, which they do by providing constructive, directly actionable feedback in a non-threatening way because they are not linked to employee assessment. Similarly, they give people an opportunity to share their views and ideas and to be heard.

Getting Started:

AARs can be grouped into three types: formal, informal and personal. Although the fundamental approach involved in each is essentially the same, there is some variation in how they are conducted.

Formal AARs tend to be conducted at the end of a major project or event (learning after doing). They require some preparation and planning, but are not difficult as they take the form of a simple meeting. This meeting may take place over a couple of hours or a couple of days, depending on the scale of the project. Steps and tips for successful formal AARs include:

1. **Call the meeting as soon as possible and invite the right people** AARs should be conducted as soon as possible after the event. The reasons are simple: memories are fresh, participants are available and where appropriate, learning can be applied immediately. As well as the project manager and the key members of the project, it may be useful to invite the project client or sponsor and also members of any project teams who are about to embark on a similar project. However, be aware that the presence of external people may inhibit some team members.

2. **Create the right climate** The ideal climate for an AAR is one of trust, openness and commitment to learning. AARs are learning events, not critiques, and so should not be treated as performance evaluation. There are no hierarchies in AARs - everyone is regarded as an equal participant and junior members of the team should feel free to comment on the actions of senior members. Make it clear that the purpose of the meeting is to help future projects run more smoothly by identifying the learning points from this project.

3. **Appoint a facilitator** Ideally an AAR should be facilitated. (Certainly a formal AAR should be facilitated but informal AARs and personal AARs need not be so). The main purposes of the facilitator are to help the team to learn by drawing out answers, insights and previously unspoken issues; to ensure that everyone has an opportunity to contribute; and to help create the right climate and ensure that blame is not brought in. The facilitator should be someone who was not closely involved in the project, so that they can remain objective.

4. **Revisit the objectives and deliverables of the project** Ask 'what did we set out to do?' and 'what did we actually achieve?'. You might like to revisit the original project plan at this stage. You might also decide to construct a flow chart of what happened, identifying tasks, deliverables, and decision points. This can help you to see which parts of the project were particularly effective or ineffective.

5. **Ask 'what went well?'. Find out why, and share learning advice for the future** It is always a good idea to start with the positive points. Here you are looking to build on best practice as well as learning from mistakes. For each point that is made about what went well, keep asking a 'why?' question. This will allow you to get to the root of the reason. Then press participants for specific, repeatable advice that others could apply in similar situations.

6. **Ask 'what could have gone better?'. Find out what the problems were, and share learning advice for the future** Notice that you are not simply asking 'what went wrong?' but rather 'what could have gone better?'. This way you can learn not only from mistakes, but also from any aspects of the project that got in the way of delivering even more. Hence the focus is not on failure, but on improvement. Even if no mistakes are made as such there is almost always scope for improvement. Again, for each point that is made, keep asking a 'why?' question to get to the root of the reason. Then again, press participants for specific, repeatable advice that others could apply in similar situations: 'what would we do differently next time?'.

7. **Ensure that everyone feels fully heard before leaving the meeting** It is important that participants do not leave the meeting feeling that they have not been heard or that things have been left unsaid. A useful technique here is to ask them for a numerical rating of the project: 'looking back, how satisfied are you with the project:

marks out of ten?'. People who have said the project was fine will often still score it an eight, which enables you to then ask 'what would have made it a ten for you?'.

8. **Recording the AAR** It is important to have a clear and interesting account of the AAR and its learning points, both as a reminder to those involved and in order to effectively share that learning with others. You should aim to include things like: lessons and guidelines for the future; some background information about the project to help put these guidelines into a meaningful context; the names of the people involved for future reference; and any key documents such as project plans or reports. Bear in mind who will be using your account and ask yourself if you were to be the next project leader, 'would this account and the lessons in it be of benefit to you?'

9. **Sharing the learning** As well as distributing your account of the AAR to the project team, you need to consider who else could benefit from it. For example, you may be aware of another team that is about to embark on a similar project. You also need to make your learning more widely available so that people working on similar projects in the future might also benefit; your document therefore needs to be stored somewhere it can be easily found and accessed by those it could help. This may be in a library, or in some kind of knowledge database or on an intranet.

Informal AARs tend to be conducted after a much smaller event such as a meeting or a presentation (learning after doing), or a following a specific event during a wider project or activity (learning while doing). They require much less preparation and planning and can often be done on the spur of the moment, as the format is simple and quick – a 'pencil and paper' or flipchart exercise. In an open and honest meeting, usually no longer than half an hour, each participant in the event answers four simple questions:

- What was supposed to happen?
- What actually happened?
- Why were there differences?
- What did we learn?

Personal AARs are a simple matter of personal reflection. For example, take a few minutes to reflect on something you did yesterday such as a patient consultation, dealing with a complaint or making a specific telephone call. Ask yourself the four AAR questions above. What does that tell you about what you could do differently tomorrow?

Key Considerations:

- It is worth repeating is that AARs are learning events, not critiques. It is therefore vital that they are not treated as performance evaluation. The quality of an AAR depends on the willingness of participants to be open; this is unlikely to happen if they fear they are going to be assessed or blamed.
- Studies on the learning process show that the less time that elapses between discussing a lesson and applying it at work, the more effective the application. This would suggest that AARs are most valuable when used to 'learn while doing'.

Source:
National Library for Health NLH (Author: Shaunagh Robertson / Caroline De Brún)
(http://www.library.nhs.uk/knowledgemanagement/ViewResource.aspx?resID=70306)

Useful Links and Resources:

Postmortem to living practice: After Action Review
http://www.signetconsulting.com/methods_stories/proven_methods/after_action_reviews.php

After Action Reviews: 3 Step Process
http://www.myfirecommunity.net/documents/AAR_3Step_Example.doc

How to Conduct an After Action Review (PowerPoint Presentation)
http://www.waterisac.org/epa/trainers/AA_Reviews.ppt#257

AAR Case Studies
http://www.fireleadership.gov/toolbox/after_action_review/

Step-by-step guide to writing ARRs
http://www.nwlink.com/~donclark/leader/leadaar.html

U.S. Army Corps of Engineers guide to After Action Reviews
http://www.mvr.usace.army.mil/PublicAffairsOffice/2003AnnualReport/DistrictHighlights/AfterActionReviews.htm

David Gurteen's Introduction to After Action Reviews
http://www.gurteen.com/gurteen/gurteen.nsf/0/E380DBA5E0F0CC0E80256836006B18A7/

After Action Reviews, NeLH online KM library:
http://www.nelh.nhs.uk/knowledge_management/km2/aar_toolkit.asp

Links to resources on *After Action Reviews*, by UNDP Bratislava Regional Center:
http://europeandcis.undp.org/?wspc=KM_Links

Step by Step Guide to AARs, GXchange Knowledge Sharing Toolbox:
http://www.ks-cgiar.org/toolbox/index.php?option=content&task=section&id=5&Itemid=44

SUPPORTING TOOL/RESOURCE 31: PEER ASSIST/PEER REVIEW

Peer Assist is the most economic way of designing a project and avoiding errors and mistakes based on others' experience and knowledge. It is a method of knowledge and experience sharing among two teams, based on dialogue and mutual respect. A work team starting up a new project or task – the hosts – call on another team with experience in the respective field of activity.

Peer Assist allows the requesting team to gain input and insights from people outside the team, and to identify possible new lines of enquiry or approach – in short, reusing existing knowledge and experience rather than having to reinvent the wheel.

It is worth using a Peer Assist when a team is facing a challenge, where the knowledge and experience of others will really help, and when the potential benefits outweigh the costs of travel.

While Peer Assist is used for planning, Peer Review is the analogue tool for evaluation.

Steps in Peer Assist

1. The host team clarifies the purpose and invites an experienced team (6 to 8 persons).
2. At the start of the Peer Assist itself, the host and facilitator allow time for socializing and create a good climate among participants.
3. The presenter(s) of the host team explain the project; brief and precise: 10 to 15 minutes will be enough. They express the specific needs of the team and the expected outcome.
4. The visiting team further explores the situation and gives feedback to what they learnt.
5. The visiting team identifies options to solve the problem. The host team listens carefully and the facilitator records these options.
6. The visiting team presents their final feedback. The host team is prepared to hear something it did not expect.
7. The host team commits to follow-up actions and to keeping the visiting team updated.
8. Together, they identify lessons learned and further interested persons to share with

What are peer assists?

A peer assist is simply a process where a team of people who are working on a project or activity call a meeting or workshop to seek knowledge and insights from people in other teams. While seeking help from peers is certainly not new, the formal use of this process as a knowledge management tool and the coining of the term 'peer assist', were pioneered by British Petroleum (BP).

What are the benefits?

Peer assists are part of a process of what BP calls 'learning before doing', in other words gathering knowledge before embarking on a project or piece of work, or when facing a specific problem or challenge within a piece of work. The benefits of peer assists are therefore quickly realized: learning is directly focused on a specific task or problem, and so it can be applied immediately.

A peer assist allows the team involved to gain input and insights from people outside the team, and to identify possible new lines of enquiry or approach – in short, reusing existing knowledge and experience rather than having to reinvent the wheel. Peer assists also have wider benefits: they promote sharing of learning between teams, and develop strong networks among people.

Peer assists are relatively simple and inexpensive to do: they do not require any special resources or any new, unfamiliar processes. It is worth using a peer assist when a team is facing a challenge, where the knowledge and experience of others will really help, and when the potential benefits outweigh the costs of travel.

Getting Started:
There is no single right way to hold a peer assist. The following is a method that has worked well for BP.

1. **Clarify your purpose**
Peer assists work well when the purpose is clear and you communicate that purpose to participants. Define the specific problem you are seeking help with, and be sure that your aim in calling a peer assist is to learn something (rather than seeking endorsement for a decision you have already made).

2. **Has the problem already been solved?**
Do some research to find out who else has already solved or tackled a similar problem. Also, share your peer assist plans with others, as there may be other teams who are currently tackling a similar problem who could also benefit from participating in the peer assist.

3. **Get a facilitator**
You will need a facilitator from outside the team, to make sure the meeting participants reach their desired outcome. The facilitator also may or may not record the event: be sure to agree on that before the meeting.

4. **Timing is important**
Ensure that you plan a date for the peer assist that is early enough in your project to make use of the input you receive and to do something different on the basis of what you have learned. A frequent mistake is to hold the meeting too close to the decision date to make a real impact. Consider that you might get a different response to the one you expect: will you have time to do anything about it? The length of a peer assist depends on the complexity of the problem and tends to be somewhere between half a day and two days long.

5. **Select the participants**
Once you are clear on your purpose, select participants who have the diversity of knowledge, skills and experiences needed for the peer assist. Six to eight people are a good number. Look 'across' the organization rather than 'up' it – hierarchies can hamper the free exchange of knowledge whereas peers tend to be much more open with each other and can challenge without feeling threatened. Avoid the temptation to select 'the usual suspects': if the same experts are selected for peer assists again and again, you may be limiting the number of fresh ideas and perspectives available to you. Similarly, seek to select people who will challenge your ways of thinking and working and perhaps offer a different angle, rather than looking for people who will validate your current approach. You might consider inviting people from outside your organization.

6. **Get clear about the deliverables**
Get clear on what you hope to achieve during the peer assist and then plan the time to achieve that. The deliverables should comprise options and insights rather than providing an answer. It is up to the person or team who called the peer assist to then make the relevant decisions, based on what is learned. Provide the participants with any briefing materials in advance so that they have adequate time to prepare.

7. **Allow time for socializing**
Allow time in your agenda for the teams to get to know one another; this might be a dinner the night before or time for coffee at the start of the day. It is important to build rapport so that the group can work openly together.

8. **Define the purpose and set the ground rules**

At the start of the meeting, ensure that everyone is clear about the purpose of the peer assist and their roles within it. The role of the host team is to listen in order to understand and learn. The role of the visiting team is to share knowledge and experience to help resolve the challenge without adding to the workload. Agree that where there are areas of contention, you will focus on the activity rather than the individual people involved.

9. **Start by sharing information and context**
Divide the meeting time roughly into four equal parts. During the first quarter, the host team will present the context, history and their future plans regarding the problem or challenge in question. Keep this part short and sharp – you only want to say enough to get the visiting team started in the right direction. Remember that the purpose of the peer assist is to learn rather than tell. When communicating the problem or challenge about which you are seeking input, be prepared for it to be redefined as part of the peer assist process. It may be that the problem you have identified is in fact the symptom of a further problem and the peer assist will help you identify the root cause.

10. **Encourage the visitors to ask questions and give feedback**
In the second quarter, the visitors consider what they have heard, and then begin by discussing what they have heard that has surprised them, and what they expected to hear but haven't. The host team should take a back seat at this stage and simply listen; in some cases they may even opt to leave the room. The visitors then consider what else they need to know to address the problem and where might they find that knowledge. It may be that they want to make some telephone calls and talk to some other people, or request some data or reports. Remember, they are not seeking to solve the problem but to offer some options and insights based on their own knowledge and experience.

11. **Analyze what you have heard**
The third quarter of the meeting is for the visiting team to then analyze and reflect on what they have learned and to examine options. Again, the home team remains largely in the back seat; it might be appropriate to involve one or two of them, provided that they continue to listen and learn rather than closing off options or seeking to draw conclusions too early.

12. **Present the feedback and agree actions**
In the fourth and final quarter of the meeting, the visiting team presents their feedback to the host team and answers any questions. The presentation will be along the lines of 'what we have learned, what options we see, and what has worked elsewhere'. As with all feedback, this should start with the positive – what has been done well, and then what options there are to do things differently. When presenting what has worked elsewhere, presenters should simply tell the story rather than prescribing 'you should…' In closing, the person who called the peer assist should acknowledge the contribution of the visiting team, and also commit to when he or she will get back with an action list of what the team are going to do differently. Finally, invite the visiting team to reflect on what they have learned and what they will take away and apply. Learning is never one-way.

Key Considerations
In most contexts, an important consideration is that of evidence-based practice. When conducting peer assists, you will need to ensure that lessons learned are based on a combination of both on-the-job experience and sound research evidence. You might wish to carry out an "after action review" following your peer assist to look at whether the process went according to plan, what was different and why, and what can you tearn from that for the next time. While the peer assist process is designed to provide input for a specific purpose or project, consider who else might benefit from the lessons learned. Always look out for opportunities to share and re-use knowledge and learning.

A variation – the rotating peer assist.

A rotating peer assist works with parallel sub-groups in one room, dealing each with a part of the problem. It works especially in cases you have several questions and a lot of visiting peers. While the hosting people remain with their initial question, the visiting people rotate to the next discussion place. In each round the problem is re-explained based on the insights gained in the previous round.

Peer Review: What is the difference to Peer Assist?
While peer assist is a tool in a planning stage, peer review is the tool in the evaluation stage. Peer review is an evaluation of the performance of individuals or groups of practitioners (hosts) by members of the same profession (guests). The status of hosts and guests are similar, there is no formal link between hosts and guests, no hierarchical, managerial or important business relationship. They are real peers. Peer review may be formal or informal; it may be focused on a learning process in one organization or to both sides. Peer review may also be used in the context of multidisciplinary teams to incorporate feedback from peers with different professional background being member of the same organization.

Peer review usually aim at:

- Self regulation within the profession (quality standards)
- Organizational development
- Create awareness of standards and quality of performance
- Improvement of collaboration between professionals

Guidelines for a successful peer review:

Structure: Plan the peer review thoroughly, select an experienced facilitator, and follow the planned structure of the review.
Trust: Be cooperative, supportive and non-judging in your responses and feedback. Refer to the insight that "people do the best they can with the resources they have".
Honesty: Be as honest as you can. You do not have to look competent in front of the group. Opt for a learning culture: It is vital to learn from mistakes, not to hide them.

Conflicts of interest: Declare conflicts of interest openly and sort them out. Most often, conflicts are sources of energy and the entry point of unexpected new solutions.

Be self directed: You are responsible for yourself. Choose your own process, take what you want and leave the rest.

Diversity: Be alert to and respect differences in culture, gender, professional orientation, and personal values that may show up through differing options, viewpoints or ways of working.

Source:
http://www.library.nhs.uk/knowledgemanagement/ViewResource.aspx?resID=125167&tabID=290&catID=10413
http://europeandcis.undp.org/files/uploads/Aquirin/KM4dev%20contribution%20to%20Learning%20to%20Fly.doc

Useful Links and Resources

Two Canadian organizations, Bellanet and the University of Ottawa Centre for E-learning, created a Flash presentation on peer assist, in English and in French. Flash is a popular animation technology authoring software.

Link to access the English version of animated peer assist:
http://www.saea.uottawa.ca/index.php?option=com_content&task=view&id=682&Itemid=649&lang=en

Link to access the French version of animated peer assist:
http://www.saea.uottawa.ca/index.php?option=com_content&task=view&id=682&Itemid=649&lang=fr_FR

Link to download Flash software:
http://www.adobe.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash

Step by Step Guide to conducting a Peer Assist, CGXchange Knowledge Sharing Toolbox: http://www.ks-cgiar.org/toolbox/index.php?option=content&task=section&id=4&Itemid=37

Peer Assists, NeLH online KM library:
http://www.nelh.nhs.uk/knowledge_management/km2/peer_assists_toolkit.asp

Planning an Effective Peer Review: A Guidebook for National Focal Points
http://saiia.org.za/images/upload/apr_focal_point_guide_20070803_en.pdf

SUPPORTING TOOL/RESOURCE 32: CRITICAL INCIDENT REVIEWS

A critical incident is a difficult situation. By documenting and/or discussing the critical incident experiences for the organization's most experienced performers, the organization can capture lessons for knowledge transfer.

Why:

- Documents veteran performers' expertise and approach to problem solving
- As critical incidents are captured, creates a more comprehensive set of lessons; continuously evolving
- Allows for open discussions about what worked, what could be improved (document if appropriate)
- Focuses on finding root cause or causes which are often process issues that result in performance issues

When:

- Sharing individual knowledge and skill is critical
- Situations are not encountered routinely; documentation of previous solutions and lessons learned is vital to knowledge transfer

How:

Determine what constitutes a critical incident. Identify who should be involved in the review. Identify and capture the things that went well and the things that could be improved so that team members are aware of and can use the broader team's learning in their future projects.

The Do's & Don'ts:

- Clearly document the details of the incident and how it was resolved
- Pay special attention to identifying whether the incident requires a process fix or a developmental fix
- Avoid brief, sketchy documentation that would make it difficult for a future performer to understand what happened
- Be sure you can find and review the documentation when you need it

Example: Incidents might include: citizen complaints; exposure to hazardous materials; unsuccessful project; complex program implementation

Critical incident reviews, also called significant event audits, are a way of reflecting on the causes and impact of unusual incidents in your practice. You might review positive events, for example hitting all the coronary heart disease targets, or negative ones such as a near miss or medical error.

The aim is to highlight the learning needs of individuals or the team and then incorporate this learning into everyday practice. The review should not allocate blame, but identify how the practice collectively can improve patient care.

Looking carefully with supportive colleagues at the event and having a chance to reflect on how it could have been managed differently can be a positive learning experience. The process can involve the whole practice team.

A critical incident can be any noteworthy event at work. For example:

- ⇒ A missed diagnosis of breast cancer in a young woman
- ⇒ A drug error
- ⇒ An unexpected death
- ⇒ A patient complaint about the practice receptionist
- ⇒ A staff member resigning unexpectedly due to stress.

How to do a critical incident review

The process of conducting a critical incident review can be divided into three steps.

1. Identify and record the incident

Describe what happened and how it affected the patient, you, and the practice. Think about how it could have been avoided and what might be done to stop it happening again.

2. Prepare for the review

The review should encourage mutual support and openness, and emphasise learning. Someone, for example an external facilitator, should lead and chair the audit and make sure there is protected time for all involved.
The lead should set ground rules such as confidentiality, having an open discussion, allowing everyone to speak and participate in active listening, and not allocating blame.

3. Running the review

The questions on the form can be used to structure the review meeting. You might consider the following points:

- ⇒ What happened? Did something go wrong? What things went well?
- ⇒ How did it affect the patient, you, and the practice?
- ⇒ Could it have been avoided?
- ⇒ Can it be stopped from happening again? What action needs to be taken by whom and when?
- ⇒ What learning or development need has this highlighted for you (to put into your personal development plan)?
- ⇒ What learning or personal development need has it highlighted for others?

Keeping a record

Keeping a log of all critical incidents can help identify patterns. If you re-audit an event you can see whether you put into place the changes you agreed in the review.

Source
http://learning.bmj.com/learning/channels/gp/cir.html

SUPPORTING TOOL/RESOURCE 33: COMMUNITIES OF PRACTICE

Learning Organizations aim to enhance learning across organizational units and empower people in their work. A Community of Practice (CoP) is a convincing way of doing so.

A CoP is a network of people with a common interest or problem in a specific area of competence and who are willing to work together for a given time to learn, develop and share that knowledge.

Six essential aspects of a successful CoP

- Strong **community** – a group of (more or less) active members with a lively interest for the CoP and its topics and who give it priority. Member pool is often fluctuating not stable.
- Clear and well-defined **domain** – there is a specific thematic orientation; the domain is relevant and meaningful to members.
- Link to own **practice**- members are active in the given domain. Shared experiences, concepts and strategies spring from and are being tested against the individual reality of practice.
- Personal **motivation** – membership is voluntary and based on personal interest.
- **Mandate** – the involved organization(s) defines and is interested in the given thematic focus and has an interest in a concrete outcome. Commitment of members is supported by providing necessary working time and resources.
- **Informal structure** – goes beyond organizational boxes and lines, often combining horizontal and diagonal links. It makes a link between units within and/or between the organization(s).

Important

- Ensure that key stakeholders are members; balance giving and taking.
- Strive for most practical and tangible outputs/outcomes; disseminate them widely.
- Carefully select how to "be connected" – balance and combine face to face meetings with other means.
- Combine informality with a basic set of rules for communication and collaboration.
- Ensure ownership within – cultivate and support the roles of manager, expert, facilitator. Adjust to changes in the environment.

The six essentials of a CoP

1. *There is a Community*. A Community has active members with a lively interest in sharing their knowledge. Being a community means something special to the members, and the community has a certain priority. It is not just "what I do after six in the evening". Members are keen to meet each other because they benefit from the community.
2. *There is a Domain*. A CoP has a clear domain, a thematic orientation that is neither too narrow nor too large. This domain is relevant and meaningful to the members; they are interested in specific topics and expect to improve their own practice by sharing experience related to what they do.

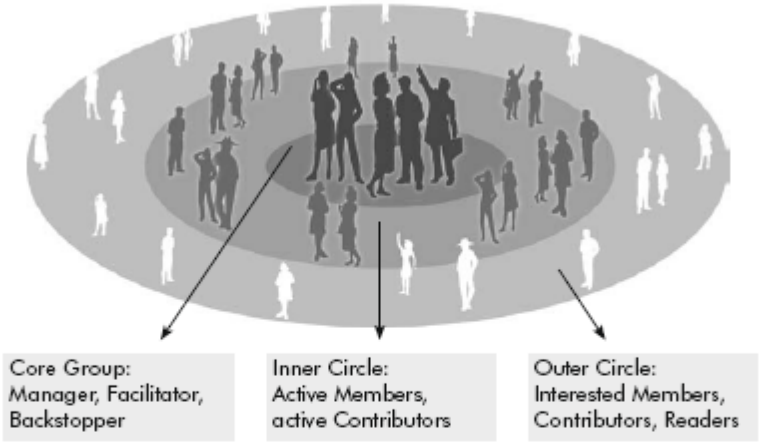
3. *There is a Practice*. Each and every member has his/her own practice within the domain of the CoP, and members know about each others' practice. One's own practice serves as a kind of reality check when sharing experience, concepts and strategies. Reflecting on one's own practice against the background of other practices is one of the essentials of a CoP.
4. *There is Motivation*. A CoP exists only through the motivation of its members. This motivation is recognizable by their personal interest and the priority they assign to the CoP in their daily work. Adhering to a CoP often means developing a passion for it.

5. *There is a Mandate*. By means of a mandate, the management of the organization shows its interest in and commitment to the CoP. It defines, on one hand, the thematic focus and the expected concrete results. On the other hand, the mandate provides an open space for self-commitment to its members, in terms of time and financial resources.
6. *There is a balance of formal and informal structure*. A CoP is a structure beyond organizational boxes and lines. Hierarchy is not an important element. Most CoPs cross-link organizational units and organizations.

The basic structure of a CoP
Most communities of practice have a threefold concentric structure:

- A core group,
- an inner circle, and
- an outer circle.

The **core group** acts as a managing group based on an agreed co-ordination mandate. It coordinates the activities of the CoP and ensures secretarial support if necessary.
The **inner circle** functions as a steering committee with an informal structure, meeting once or twice a year. Individual members of the inner circle may be in contact with the core group on demand.
The **outer circle** consists of interested people, contributors, and readers, forming a loose network. In their business unit, collaborators shape the organization; in their teams, collaborators take care of projects; through networks, collaborators form relationships; in their CoPs, collaborators develop the knowledge that lets them perform these other tasks.



In their business unit, collaborators shape the organisation; in their teams, collaborators take care of projects; through networks, collaborators form relationships; in their CoPs, collaborators develop the knowledge that lets them perform these other tasks.

A CoP exists in a concrete context and depends on it
An organization is ready to host a CoP or to allocate time and resources for a CoP if:

- The domain has a strategic importance for the organization
- The CoP and the organization share common values
- The organization recognizes learning and knowledge management as an important asset
- The results are relevant and beneficial for the organization and its members (i.e. there is an added value).

A successful CoP is able to cope with the values, the culture and the pragmatism of all supporting organizations.

Differences between CoPs and Teams
Comparing the differences between CoPs and Teams often helps to build understanding on the basic aspects of communities:

	Community of Practice	Team
Goals	Emerge from the professional interests of the community	Concrete task or project-oriented goals
Membership	Purely voluntary; social pressure may encourage people to join or leave the community	Defined when team is formed; may change based on task or project requirements
Motivation to participate	Based on individual member's desire for personal learning, for social interaction, and need to establish and maintain professional and/or personal identity	Organizational rewards predominate
Structure & Leadership	Fluid; leadership and membership in a core group (if it exists) are based on an individual's actions as a community member	Team leader role either is determined when the team is formed or is dependent on hierarchical status in the organization; some teams are self-organizing; some teams operate without identified leaders
Facilitation	Facilitators often external, but can eventually emerge from the members of the community	Team members take on facilitation roles as necessary
Influence processes	Based on informational factors and thus more deeply internalized. "Informational" refers to the kind of feedback provided by a group when it comments on an individual's behavior and interpersonal relationships.	Based principally on normative factors and therefore less likely to have impact when the individual is not "in" the group
Work processes	Informal; undocumented	Externally determined or are developed according to the norms of the organization
Work products	Generally unstructured; may be tacit	Explicit; structured
Reporting on results	Wholly internal; frequently informal	Required; usually structured
Interaction format	Mainly virtual; face-to-face to launch if at all possible and to renew relationships periodically	Typically face-to-face, but more and more can be virtual
Duration	Indeterminate	Fixed or indeterminate

Generational Aspects of Communities

By their nature, CoPs cut across multiple generations. Many encourage membership of practitioners past, present and future, which means the age of the members can vary quite widely. They are likely to include a higher proportion of novices and experts that get to know each other more quickly than you would normally find in a typical group within an organization. As a result, they are a natural market for mentorship and provide a safe environment for mentees to ask for help. A suggested action is to include mentoring in the charter or terms of reference for a CoP

How to Establish a Community of Practice
There are five basic phases to establishing a successful community: Engage, Plan & Form, Launch and Sustain.

Key questions to consider for each phase are:

Engagement Questions:
- Is the proposed CoP viable and valuable?
- What is the scope in terms of organization and context?

Planning Questions:
- What is the business case for the CoP?
- What is the level of support?

Forming Questions:
- Who might lead the group?
- Is the scope clear?
- How will the core team function?

Launching Questions:
- What are this group's critical issues and needs?
- What will best serve their interests?

Sustaining Questions:
- What tasks and activities does the Core team need to support and maintain the CoP?
- Are the members participating and getting value from their involvement?

Getting Started:
Every CoP has its own history, milestones, highlights and pitfalls. Knowing this history is a key to understanding the nature and the development potential of a CoP. Like every organizational form, a CoP has a life cycle and goes through different stages – from its creation to its phasing out.

	Phases
1	Express your need to interact with peers: I know – you know – we together might know better!
2	Start a discussion of a domain in a core group and discover a common interest in this interaction. Dare introducing new forms of sharing experience. Encourage others!
3	Contact potentially interested people by phone, by mail, and in informal talks during workshops and gatherings. Attract their attention and awaken their interest. Involve them in a first small and useful interaction. Let them feel the possible benefits.
4	Design the interaction in terms of time and place: Contributions in journals, discussions in electronic platforms, and meetings. Pay attention to early, intermediate results, summaries and conclusions of discussions. Assure the flow of the process; assure added value for all participants.

	Motivate individuals through back-channel contacts. Organize the core group (owner, convenor, facilitator, experts) and take care of the inner and the outer circle.
5	Organize workshops and face to face meetings on core topics. Strive for concrete products. Live and learn within the CoP – this important phase of a CoP can last up to several years or even decades.
6	Phase out when the domain of the CoP is becoming less relevant. Determine whether re-orientation might open a new vision. Organize a closing event: Celebrate the farewell with results achieved! Use the empty space and time for new initiatives or contributions.

Does your CoP pass the fitness test?

Experience shows that a successful CoP fulfils the criteria of the fitness test. Check your own CoP and tick (☐) what applies to it!

Criteria	Concrete check questions
Purpose	❑ Are the selected topics of interest to all members? ❑ Is the domain strategically relevant to the involved organisations? ❑ Do all members have their own practice in the domain?
Members of a CoP	❑ Is the relevant experience on board? ❑ Is the heterogeneity of the members assured? ❑ Is the CoP open to new members?
Norms and rules	❑ Are roles and accountability defined in a common agreement? ❑ Are both distant contacts and face-to-face meetings possible? ❑ What is the balance between giving and taking among members?
Structure and process	❑ Is the chosen structure clear and flexible enough? ❑ Are key roles in the core group defined, such as owner, manager, facilitator, and expert? ❑ Is the step-by-step planning process open and transparent?
Flow of "energy"	❑ Do members care about common interests, commitment and trust? ❑ Are there regular face-to-face events; celebrated (social) key moments? ❑ Is the history of the CoP alive and told to new members?
Results	❑ Is there a common concern as a basis for producing tangible results? ❑ Do members get direct and practical benefits? ❑ Are results officially recognised by the CoP members' organisations?
Resources	❑ Do the members have a sufficient time budget for the CoP? ❑ Are the member organisations willing to provide time and money? ❑ Is the facilitation attractive and stimulating?
Values in a CoP	❑ Is listening to others a living virtue? ❑ Are members willing to give without immediate return? ❑ Is diversity in thinking and practice validated?

Result? How many ☐did you mark?

0 … 8 Your CoP is still in its infancy.

9 … 15 Your CoP may be in need of serious coaching.

16 … 19 Your CoP is running well. Some aspects may require improvements.

20 … 22 Please tell us about your CoP! It must be a fine experience!

23 … 24 You probably have a too optimistic picture of your CoP! Please check again!

Tips in Establishing Communities of Practice

Why

- Provides a sanctioned mechanism for sharing knowledge
- Leads to improved network of contacts
- Provides peer recognition and continuous learning
- Provides a mechanism for sharing tacit knowledge

When

- When sharing tacit information is important to achieving better results
- When knowledge is being constantly gained and sharing it is beneficial to meeting organizational goals

How

- Determine what knowledge people need to share
- Determine the purpose of the group, e.g. solving everyday work problems, developing and disseminating best practices, etc.
- Clarify roles and responsibilities
- Provide resources and support

Steps

- Identify community members
- Devise ways to collaborate, e.g., meetings, on-line messaging or chat rooms, shared databases, etc.
- Hold initial event to engage member interest & explain mechanics
- Check on progress

Roles

- Functional Sponsors
- Core Group
- Community Leaders
- Members
- Facilitator
- Logistics Coordinator
- Historian

Do's / Don'ts

- Membership should be voluntary
- Recruit those who are seen as experts and trusted as information sources
- Management should not dictate action

Critical Success Factors for CoPs

All thriving CoPs exhibit the following success factors:

- They are *highly intentional* groups dedicated to sharing knowledge among practitioners
- The members share a common and *specific* sense of purpose
- The knowledge they share and transfer is *highly relevant* to the members current and future business, mission or personal needs
- They operate though trust, *reciprocity & recognition*
- The leader (s) are respected, *passionate* & *trained*
- The CoP is *facilitated* by someone trained and experienced in CoPs

- There is an easy to use, *virtual* connection place on the web
- The members meet *face-to-face* once in a while

Source
SDC CoP Flyer (www.daretoshare.ch)
http://www.daretoshare.ch/en/Dare_To_Share/Knowledge_Management_Toolkit/media/CoP/final%20version%20CoP%20flyer%20englisch.pdf

Links and Resources
Establishing a Community of Practice: Resource Handbook by UNDP Bratislava Regional Centre, 2004: http://content.undp.org/go/km/ks-global/Defi nitionsand-Typologies/download/?d_id=405722&g11n.enc=ISO-8859-1

Cultivating communities of practice. A quick start-up guide, by E. Wenger, 2002: http://www.ewenger.com/theory/start-up_guide_PDF.pdf

A Guide to Managing Knowledge. Cultivating communities of practice, by E. Wenger et al., 2002, Boston: Harvard Business School Press.

Tips, advice and further links on setting up and maintaining a CoP, provided by knowledgeboard, an online KM platform: http://www.knowledgeboard.com/cgi-bin/item.cgi?id=378

Links to experiences of setting up and running CoPs, provided by KM4DeV: http://km4dev.org/index.php/articles/c151

http://www.daretoshare.ch/en/Dare_To_Share/Knowledge_Management_Toolkit/media/CoP/final%20version%20CoP%20flyer%20englisch.pdf

CoP in NHL library: http://www.library.nhs.uk/KnowledgeManagement/ViewResource.aspx?resID=88442&tabID=290

CoP in Public Sector: http://www.anecdote.com.au/papers/Callahan_ActKM_Chapter.pdf

Dixon, Allen, Burgess, et al. CompanyCommand: Unleashing the Power of the Army Profession. Center for Advancement of Leader Development and Organizational Learning, ISBN 0 9764541 0 6

Gorelick, April, Milton. Performance through Learning: Knowledge Management in Practice. Butterworth-Heinemann, ISNB 0 7506758 2 9.

Collison, C. & Parcel, G. (2001) Learning to Fly: Practical Knowledge Management from Leading and Learning Organizations - Chapter 10: *Networking and Communities of Practice*. Oxford: Capstone Publishing.

SUPPORTING TOOL/RESOURCE 34: Knowledge Transfer BY USER NEEDS

This approach works when you have a specific need and you want to gain some knowledge to meet that need. It is organized by individual, team and organizational needs for transfer, in that order. Multigenerational considerations to traditional knowledge transfer techniques are provided to help you adapt some of the proven methods when dealing as appropriate.

Use the following table by reading the common knowledge transfer needs or opportunities listed in the left-hand column. Identify the situation that most closely aligns with your specific need and select the method or methods in the right-hand column. Clicking on a specific method will take you to a detailed description and, where appropriate, a 'how to' guide in its use.

For instance, if you are part of team that is about to begin a challenging task or project and needs to 'learn before doing' to be successful, you will be guided to the following knowledge transfer methods to consider for use:

- Hold a facilitated Peer Assist session after the team has created its plan and understands its challenges and knowledge gaps, but before it begins implementation.
- Publish the project approach and plan in a Wiki and openly seek ideas and advice for improvement from others.

In this case, two methods are recommended. Multiple methods are offered because certain methods resonate with different people, depending on their learning preferences and experience. As the Multigenerational Adaptation column on the far right suggests, in this case a younger person may be more comfortable using a Wiki than a facilitated group session method such as the Peer Assist.

Knowledge Transfer: Table for Selecting Methods by User Needs

Receiver	Knowledge Transfer Need or Situation	Traditional Knowledge Transfer Method(s)	Multigenerational Adaptations
Individual	A novice wants to accelerate up the learning curve in a particular subject area or domain	Attend formal education and relevant training offered online or in a classroom. Seek out someone_with relevant expertise for Mentoring. Search for relevant lessons learned, good practices and procedural knowledge on the Internet, your company Intranet, people directories and relevant Communities of Practice. Serve as an Apprentice (refer to the Glossary for more information on this method) to a subject matter expert or master practitioner in the relevant subject area or discipline.	Being a novice doesn't always refer to someone from a younger generation. However, when it does, it's important to understand their learning preferences may be different from someone older. For instance, making knowledge highly visible and easily accessible in small chunks of content using Wikis, Blogs, and Podcasts will likely appeal to a Gen Yer, especially considering their preference to search and tap multiple sources of information and knowledge and their desire for only what they need. In the case of Mentoring, younger generations might prefer to receive some of their guidance via Instant Messaging while they are actually in the midst of doing whatever it is they need advice for, rather than a phone call that has to be scheduled in advance.
Individual	An individual wants to improve his or her operational performance while implementing a task or project	Use on-line discussion forums within your networks of peers or a relevant Community of Practice to seek advice, ideas and answers to problems as they emerge during your task or activity. Simply ask people in your personal network, "Who may know about this?" and seek them out for conversations via email, meetings, or	Timing is everything when someone needs knowledge to help them meet an operational need. That means a conversation between people is often the best way to quickly identify the specific need or knowledge for transfer. Younger generations tend to prefer 'digital conversations' using Instant Messaging when problem-solving, whereas many baby boomers often prefer a phone call or face-to-face exchange. If your organization maintains a 'people finder' or other

Receiver	Knowledge Transfer Need or Situation	Traditional Knowledge Transfer Method(s)	Multigenerational Adaptations
		the phone. Search for relevant lessons learned, good practices and procedural knowledge on the Internet, your company Intranet, people directories and Communities of Practice.	directory that enables searching for people or content, then expect younger generations to use these tools to seek out others that might be able to help. Regardless of the method used, some level of relationship and trust are required between the source and receiver for knowledge to move from one to the other. Boomers need to consider the possibility that trust can be built in ways other than face-to-face interactions.
Individual	A key contributor is leaving a position or the organization	Use facilitated Knowledge Elicitation interviews and Knowledge Distillation methods to harvest critical learning, experience, and insights. Package and publish specific and analytical knowledge using a Knowledge Capture process. Self-document your own knowledge via templates and inquiry approaches using a Knowledge Self-Capture method. If the person is a senior leader, or in a key leadership position, he or she can hold a facilitated Leadership Transition Workshop to identify and transfer critical knowledge between the outgoing and incoming leaders and their team.	Understanding the learning preferences of both the source and potential customers (receivers) for his or her knowledge will make the difference between harvesting useful knowledge and someone actually using it in the future. For instance, if the source is a boomer, they may prefer to be interviewed face-to-face, whereas a younger person may be more inclined to create a Blog of their experience. Just as important, if the ultimate user of the knowledge is a Gen Yer, there's a good chance they would prefer to read a Blog or a Wiki to get the knowledge they need. If the intended receiver of the knowledge is to be a boomer, a one-page document that concisely describes key insights and experience from a departed employee may be something they would actually make the time to read.
Individual	A practitioner wants to accelerate up the learning curve in his or her existing practice area	Join or start a relevant Community of Practice to share and transfer experience between peers. Participate in relevant Peer Assists to contribute experience and learn from others. Seek out a Mentor with relevant expertise. Ask some experts to share their experience through Storytelling.	Your peers may no longer be from the same generation. If your peers in a Community of Practice, or that are participating with you in a Peer Assist, are from younger or older generations, they are likely to have different preferences for giving and receiving knowledge. Communities of Practice have always been about connecting peers who work in different times and places. So, virtual interaction and knowledge exchanges should increase with the addition of younger members. But this will only happen if existing communication channels such as Instant Messaging are provided to enable more 'just in time' requests and offers for knowledge sharing. Younger peers will also likely prefer to contribute their lessons learned and experiences in a more collaborative manner using a Wiki rather than formally submit content for publishing on an Intranet site or content management system. Baby boomers will likely need to increase their participation in between the periodic face-to-face meetings of their Community, or risk becoming alienated from the virtual conversations and 'digital conversations' that occur. When it comes to Peer Assists, one major difference when dealing with multiple generations will be for facilitators of the process to be more aware of the generational learning preferences of the participants. This awareness will help minimize the barriers to knowledge flow between peers of different generations, and help maximize sense-making and understanding of lessons learned and good practices that are raised in the session. For instance, a long and colourful story told by a boomer to convey a hard-earned experience or lesson

Receiver	Knowledge Transfer Need or Situation	Traditional Knowledge Transfer Method(s)	Multigenerational Adaptations
			will probably not get the attention of their peer from a younger generation. That peer would likely prefer to hear the one or two things the boomer thinks they need to know, and if they want more context or background they will ask. Another new way to stay current in your practice area is to subscribe to relevant RSS feeds of relevant Blogs on your company's intranet and on the Internet.
Team	A team is about to begin a challenging project or task	Hold a facilitated Peer Assist session after the team has created its plan and understands its challenges and knowledge gaps, but before it begins implementation. Publish their approach and plan in a Wiki, and openly seek ideas and advice for improvement from others.	Younger generations are more inclined to seek input from other people and multiple on-line sources. Boomers also want to learn before doing, but are typically not as open about seeking knowledge from others. As a result, a lot more effort is needed to entice a boomer to publicly make a request for a Peer Assist or share their upcoming challenges on something as visible as a Wiki. Peer Assists are typically held face-to-face. If some of the peers that participate are from a younger generation, the facilitator needs to consider their preferences for sharing or receiving knowledge. Gen Xers and Yers may be more inclined to participate if the session is held virtually over the Internet using some form of a web exchange system. For more multigenerational adaptations for Peer Assists refer to the section above in this column of the table.
Team	A team wants to improve its operational performance while its members are implementing a task or project	High performing teams typically meet on a routine basis while they are working on a project or activity. During these meetings, or at the end of the day or work shift during project execution, an Action Review can be held in fifteen minutes to help the team 'learn while doing' and improve their performance the very next day or work shift.	When team members are from younger generations, they might be more comfortable setting up an Instant Messaging (IM) capability to 'chat' with team members and relevant peers while their project is underway. Younger team members can also update a team's Wiki with status and progress reports, and use it to seek feedback from people outside their team that they have alerted to its existence.
Team	A team has recently completed a project or program	Hold a facilitated Retrospect session soon after the project is completed to create and capture new learning that emerged from the experience. Use a Knowledge Capture process to post the output from the Retrospect or other captured knowledge, lessons learned and good practices on to the company Intranet or other highly visible and searchable digital repository. Consider augmenting the team knowledge that is captured during a Retrospect with Knowledge Elicitation interviews. Members share new learning with peers in a relevant Community of Practice.	Team members from younger generations will be more inclined to collaboratively post the output from a Retrospect or other lessons learned to a Wiki. When capturing knowledge from a team, people will naturally look to the older, more experienced team members for insights and lessons learned. However, the younger members will have important knowledge to share and transfer to other novices or other young people that have not yet experienced the same situations or tasks. So, it is important to seek out their learning and insights as well as those of the more experienced team members.
Organization	The organization wants to capture and maintain its collective knowledge about a brand, product, service,	Embed Peer Assists and Retrospects into the organizations standard project management process so that learning and knowledge are routinely transferred from those that have it to those that need it. Develop Learning Histories (refer to the Glossary for more information on this method) to harvest knowledge from multiple	Build and support Wikis that openly document what teams and functional groups know and are learning in their practice, product and service areas. Train the younger generation in the Knowledge Capture process and as facilitators of the Peer Assist and Retrospect methods. This will not only help them come rapidly up the learning curve in their work domain, but will also embed the expected behaviour in the workforce of the future.

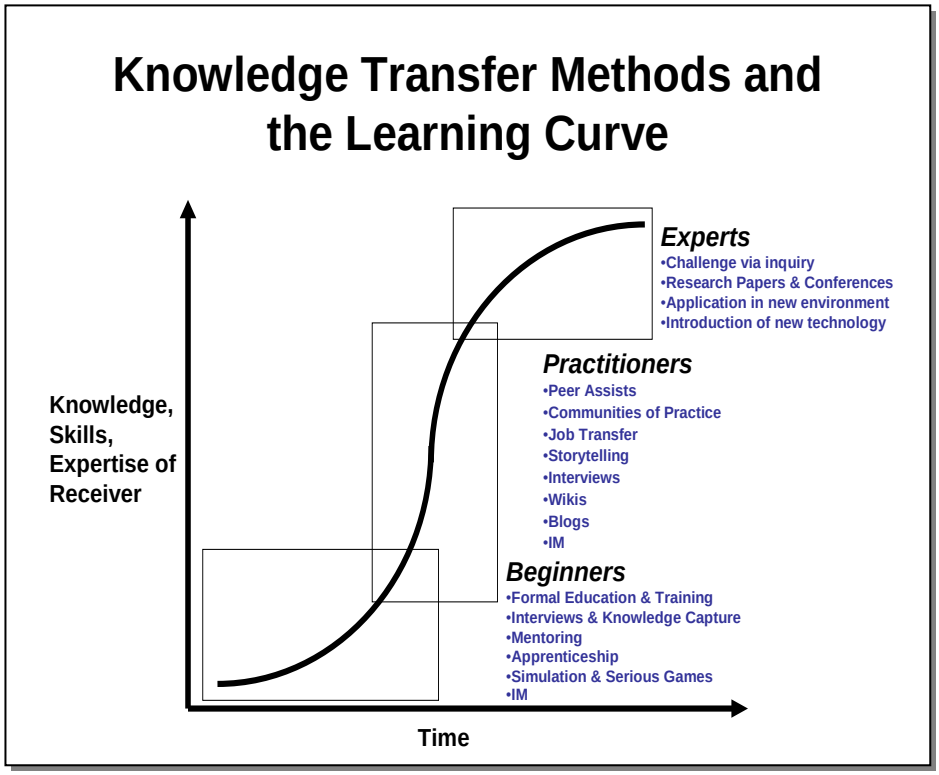
Receiver	Knowledge Transfer Need or Situation	Traditional Knowledge Transfer Method(s)	Multigenerational Adaptations
	function or critical practice area	sources. Use incentives such as leading by example and rewards to encourage individual employees to build Blogs and use Storytelling to routinely document what they are learning in their areas of interest and expertise. Use a Knowledge Capture process to harvest the output from Peer Assists, Retrospect's, Learning Histories and other learning events and use to populate the 'Corporate Memory'. In this way, knowledge will always be available to the current workforce. Establish a cross-organizational Community of Practice to continuously share and transfer knowledge among practitioners in common, business-critical subject areas and domains.	

Source:
Greenes and Piktialis for the TCB Multigenerational Knowledge Transfer Research Working Group *Knowledge Transfer Guide*. February 29, 2008

http://www.gnb.ca/0163/sp-pr/KnowledgeTransferGuide-e.pdf

SUPPORTING TOOL/RESOURCE 35: KNOWLEDGE TRANSFER BY LEVEL OF EXPERIENCE

This approach fixes on the knowledge recipient's current level of experience as the criterion for selection. For instance, a novice may actually read a "how to" manual stored in a digital knowledge repository or Wiki to gain specific and analytic knowledge. An experienced practitioner who already knows the basics will probably not read a manual, but might ask a fellow practitioner in a relevant community of practice for advice.



Approach to using the grid:

1. Identifying where you fit on the y-axis based on your current level of experience,
2. Finding relevant knowledge transfer methods associated with your level of experience on the right-hand side of the diagram. Use the table below the diagram to select and navigate to the specific "how to" guides for the appropriate method.

Descriptions and examples of applications of some of the methods follow the table and are also provided below for each level to help in your selection.

Expertise Level of Receiver	Knowledge Transfer Methods
Beginner	• Formal education and training • Knowledge Elicitation Interviews, Distillation & Knowledge Capture • Mentoring • Apprenticeships* • Simulation & Serious games* • Instant Messaging
Practitioner	• Peer Assists • Communities of Practice • Job transfer • Knowledge Elicitation Interviews • Storytelling • Wikis • Blogs • Instant Messaging
Expertise	• Challenge via inquiry by others (who are often from a different practice area)

	• Research papers & conferences • Application of their knowledge in different or new environments and contexts • Introduction of new technology

Beginner Level
Many people new to a subject area or experience will use training or formal education to increase their knowledge, provided it is available and feasible to participate. Baby Boomers will actually read a manual and other relevant documentation to gain some basic or specific knowledge. However, Gen Yers often will not. One Yer in the Research Working Group said she would put any manual she was given on the shelf and only refer to it if she ran into trouble. Fortunately, a lot of documentation is now accessible online via the internet or an organization's intranet.

The high level of 'hits' on various Wikipedia sites attests to the widespread usage of this media by younger workers for introductory information and knowledge about a specific subject or domain. But, many baby boomers may not even know what a Wiki is, let alone how to find one (which may be an opportunity for reverse mentoring!).

Knowledge capture is the process used to create re-usable, codified knowledge content in the form of digital knowledge assets, which can be quickly accessed on-line through an organization's intranet or externally via the internet. These online repositories can contain highly relevant, specific knowledge and analytic knowledge. Some of the more evolved assets also contain stories, case studies, and other experience gleaned through knowledge distillation interviews that help to transfer learning, not just content.

Simulations have been around for a long time as a method for training, learning more complex skills, and gaining experience in using them. Recently, "serious games"* have entered the workplace to provide simulated experiential learning in an accessible, user-controlled environment.

The use of Instant Messaging (IM) is a common method among younger generations for transferring information and knowledge at the moment it's needed. More and more people have access to potential online knowledge sources during office hours. For them, this method is a becoming a preferred choice for communicating and sharing knowledge in real-time.

Nothing can beat apprenticeship* methods to transfer real expertise, especially when the source has deep, innate knowledge that is hard to codify or explain. These methods are costly and time-consuming to organizations, and most companies limit the use of this approach to those situations where job complexity is great and the knowledge is business-critical.

Case in point: It is standard practice for many European companies in the nuclear energy industry to use apprenticeships to continuously transfer the deep experience of their mature operations staffs to the younger novices in their organizations. Since the growth of this energy source has continuously expanded in Europe, the need to retain this expertise was obvious. In the U.S., when growth in the nuclear power industry leveled off, the companies that owned these resources stopped maintaining apprenticeships due to cost constraints. As a result, they no longer have the right people, with the latest knowledge needed to meet the recent increase in demand for new nuclear plants.

Practitioner Level
A common method for transferring knowledge between practitioners who perform repeatable tasks and processes are often best dealt with through repositories but can also be supported through Communities of Practice and Peer

Assists. While these methods can be helpful to beginners and experts, the primary participants are peers who have experience and knowledge in their specific practice areas.

Combining these two methods can greatly accelerate a practitioner's movement up the learning curve. For instance, a practitioner may want to hold a Peer Assist to learn and transfer knowledge from his or her peers to address a specific challenge in an upcoming project. And a community of practice is a great place to find sources of relevant knowledge to invite to a Peer Assist.

Wikis can serve as a wellspring of knowledge and experience generated by multiple sources. The content can come from a team of practitioners or individual practitioners who have contributed content from their own unique experiences. Blogs are similar, but are primarily generated by a single author. Both of these methods contain information that is not necessarily verified. They are included at the practitioner level since some experience in the domain may be required to determine the applicability and usefulness of the content. Until recently, Blogs were mostly used by Gen Xers and Gen Yers. However, Baby Boomers are rapidly adopting this method for fast information and knowledge transfer, thanks to its accessibility and visibility on the internet.

Expert Level

The same methods useful for knowledge transfer at the practitioner level can also be effective for experts. However, social and cultural dynamics in the workplace often limit experts' participation or desire to engage with others who are not also recognized as experts in their field. This is especially true for boomers, but is less the case for Gen Yers. That said, Peer Assists and communities of practice benefit greatly from contributions by experts. And in many cases, experts gain new insights by having their thinking openly challenged in the course of their participation in these knowledge transfer methods. For example, sharing their experience in the use of some new technology by a peer practitioner or Gen Yer in one of these events will often result in a conversation that opens up an expert to new thinking and knowledge.

Source:

http://www.greenchameleon.com/thoughtpieces/complex.pdf
http://www.cs.toronto.edu/~gelahi/PoEM-08.pdf
http://eight2late.wordpress.com/2008/04/12/the-effect-of-organizational-culture-on-knowledge-transfer-in-projectized-organisations/

SUPPORTING TOOL/RESOURCE 36: IMPLEMENTING THE KM/KT STRATEGY

Based on the KM/KT focus/approach (corporate, department or function) collect, organize and store your tacit and explicit knowledge in a manner that will be useable and retrievable by the people within your organization for knowledge transfer purposes.

Enclosed below are several approaches and methods for KM/KT that can be used and adapted from based on the context and needs of the business.

Guidelines for selecting various KM/KT Methods

A number of different approaches (based on user need, knowledge/context and experience) are offered below given that the selection of knowledge transfer methods will never be an exact science. As can be seen by the inventory in the previous section, there are many ways for an organization to identify, store and transfer knowledge. There is no one "right" answer. A lot will depend on your business needs, resources availability and how each method is actually implemented.

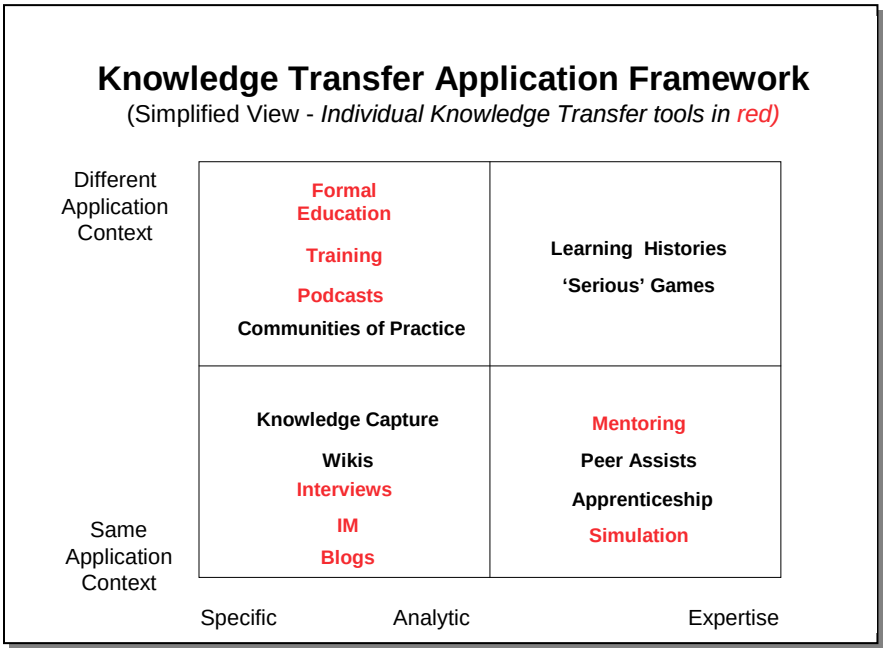
- **Knowledge Transfer by User Needs** - A table guides you to specific knowledge transfer methods that can be used when an individual, team or organization has specific needs in mind.
- **Knowledge Transfer by Application Context and Types of Knowledge** - Two graphic representations of knowledge transfer methods are offered to help you choose an appropriate technique, depending on the context and type of knowledge to be transferred.
- **Knowledge Transfer by Level of Experience** - A visual guide helps you determine appropriate knowledge transfer methods, depending on the level of experience of the person who needs the knowledge.

Below is a table that can aid practitioners and users of KM/KT on which KM/KT tools to utilize based on the setting, number of people and/or type of exercise:

	Individual	Preparation	Team	Action	Organization	Reflection
After Action Review			✓			✓
Balanced Scorecard				✓	✓	
Brainstorming		✓	✓	✓		✓
Collegial Coaching (Peer Coaching)	✓	✓	✓			
Communities of Practice			✓	✓	✓	
Exit Interviews	✓		✓		✓	✓
Experience Capitalization					✓	✓
Expert Interviews					✓	✓
Knowledge Café		✓		✓	✓	
Knowledge Fair		✓		✓	✓	
Knowledge Maps	✓	✓	✓	✓	✓	
Knowledge Network	✓	✓	✓	✓	✓	
Lessons Learned			✓	✓	✓	✓
Mentoring	✓	✓		✓	✓	
Open Space		✓	✓	✓	✓	
Peer Assist/Peer Review		✓	✓	✓	✓	✓
Story Telling			✓	✓	✓	✓
SWOT		✓	✓	✓	✓	
Yellow pages	✓	✓	✓	✓	✓	✓

Transferring Knowledge by Context and Type of Knowledge:

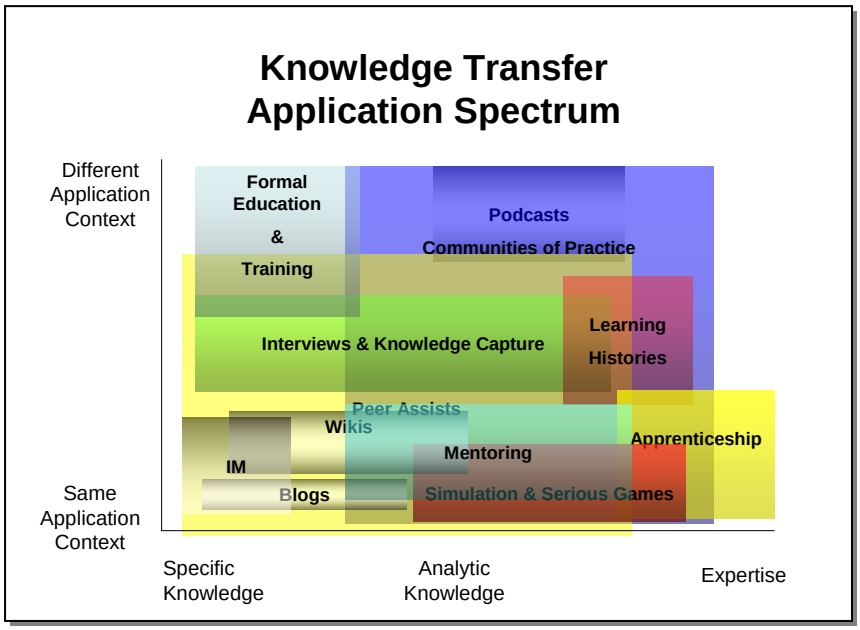
This approach works by letting you select a knowledge transfer method appropriate to the type of knowledge (specific, analytic, or expert) (**Note:** this is explained in the table below under Knowledge Transfer Methods) you are transferring and the context or environment in which that knowledge was created and/or is intended to be used (the same or different from the source).



The Knowledge Transfer Application Framework provides a generalized approach to selection and is a good place to start for people who do not have a lot of experience using knowledge transfer methods. It offers a simplified view of methods categorized by context and type of knowledge in the form of a two-by-two matrix:

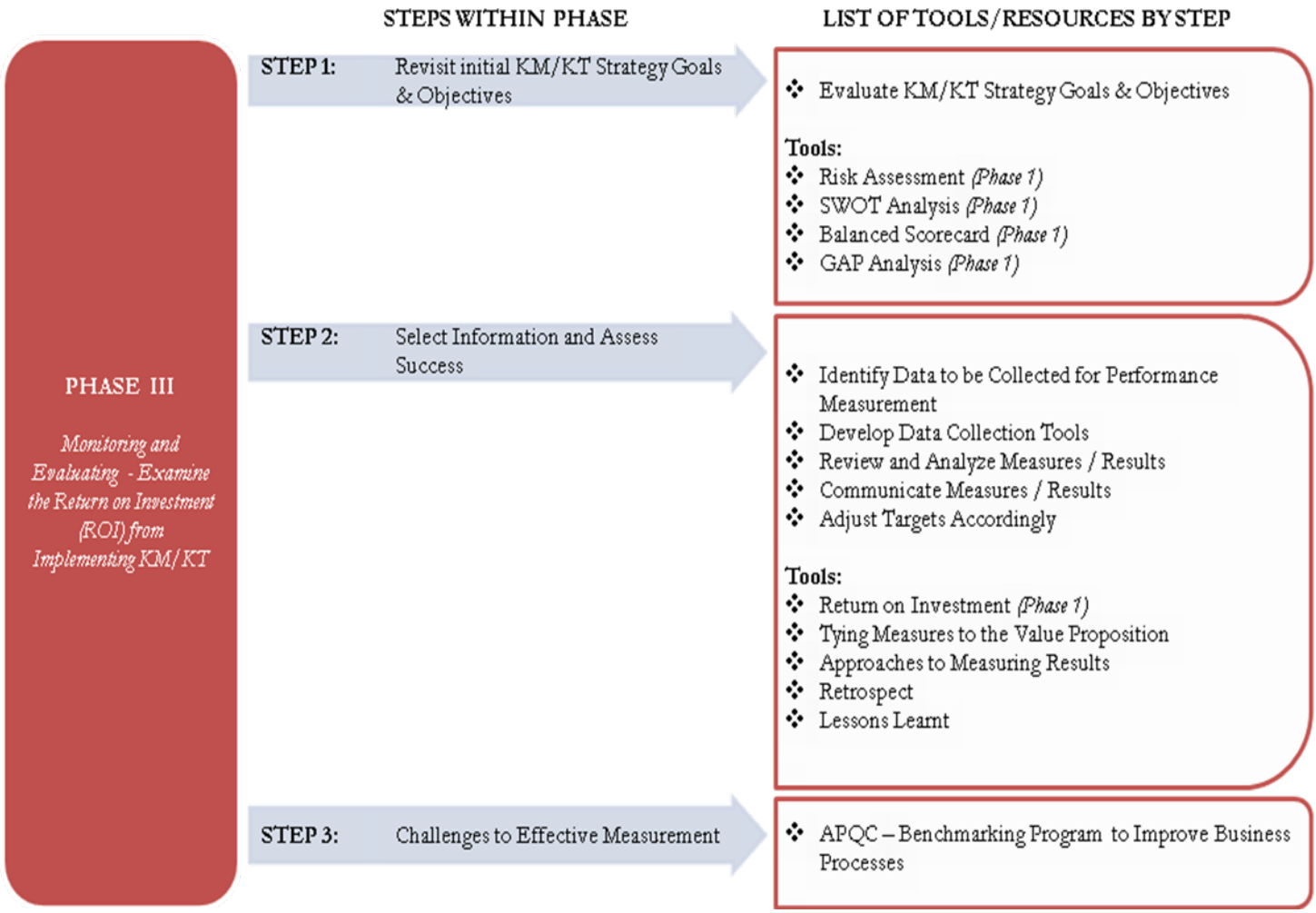
You will note that specific and analytic knowledge are both depicted in the first column. Both of these types of knowledge can be explicit and documented in ways that are understandable by others. However, analytic knowledge tends to be more complex and often requires more 'richness' in its explanation and codification before it can be effectively re-used and adapted by others.

A more complex, and thus more accurate, view is offered by the Knowledge Transfer Application Spectrum. This colourful and multi-layered approach is intended to depict the diverse spectrum of knowledge transfer methods as they apply in real life. Many of the tools overlap, indicating that "one size doesn't fit all," and that there is usually more than one way to skin a cat in the game of knowledge transfer. As mentioned previously, different methods resonate with different people, depending on their personal and generational learning preferences and experience. There is no one 'correct' method.



Various knowledge transfer methods are mapped across a spectrum of relevant applications. The method you select depends on the degree of similarity of context between source and receiver, and the type of knowledge to be transferred. Many of the methods overlap, which takes into account the broadest definition and use of each of the methods. For example, Peer Assists were designed for transfer of specific and analytic knowledge between people who have performed similar work in similar environments.

PHASE III: MONITORING AND EVALUATION - EXAMINING YOUR ROI FROM KM/KT EFFORTS



Overview

Why measure the impact of knowledge management? [12]

Measurement is undoubtedly the least developed aspect of knowledge management, which is not surprising, given the difficulties in defining it – let alone measuring it. Without measurable success, however, enthusiasm and support for knowledge management is unlikely to be sustainable. And without measurable success, you are unlikely to be able to identify what works and what doesn't, and therefore make an informed judgement about what to carry on doing and what to change.

What can be measured?

Given that the whole point of knowledge management is to improve the performance of an organization and to help it to achieve its objectives, the best and most logical approach is to tie in the measurement of the impact of knowledge management within an organization's overall performance measurement systems. This can be done

[12] Drawn from NeLH's Specialist Library for Knowledge Management; and ODI's *Knowledge and Learning Online Toolkit*.

either at a corporate level, or at an individual project or process level. However, one limitation of this approach is that if knowledge management practices are made an integral part of work, you cannot be sure of the relative contribution of those knowledge management practices to the success of a project or process, versus other factors. In view of this, a two-pronged approach is recommended that seeks to measure both outcomes and activities:[13]

- Measuring outcomes focuses on the extent to which a project or a process achieves its stated objectives. The success of the project or process serves as a proxy measure for the success of the knowledge management practices embedded in it.
- Measuring activities then shifts the focus on to the specific knowledge management practices that were applied in the project or process. What were the specific knowledge management activities and what was their effect? In measuring activities, you are looking specifically at things like how often users are accessing, contributing to, or using the knowledge resources and practices you have set up. Some of these measures will be quantitative ('hard') measures such as the number and frequency of hits or submissions to an intranet site per employee. However, these measures only give part of the picture – they do not tell you why people are doing what they are doing. Hence to complete the picture, you will also need qualitative (soft) measures by asking people about the attitudes and behaviours behind their activities.
- For measuring outcomes and activities, qualitative indicators will help you to determine whether you are making progress on both the outcomes and activities. Such indicators could include:
    - Staff members have shown an increase in critical thinking and communication skills which enable them to synthesize, sort and summarize information and knowledge as they work and interact with peers; and
    - There is a conscious effort to learn before, during and after key projects and activities using established learning processes.[14]

STEP 1: REVISIT INITIAL KM/KT STRATEGY GOALS & OBJECTIVES

Your starting point for measuring any knowledge management initiative will be the original goals of that initiative: What did you set out to achieve?

Specific tools, tips, questions and approaches that would be relevant within this exercise would include:

⇒ Knowledge Risk Assessments *(Phase 1)*
⇒ SWOT Analysis *(Phase 1)*
⇒ Balanced Scorecard *(Phase 1)*
⇒ GAP Analysis *(Phase 1)*

Revisiting why you began the KM/KT strategy and the value proposition that was used to build the business case in attaining KM/KT support within your organization is essential in developing an understanding of what key factors and measures you would want to use to base success/failure in the KM/KT strategy.

❖ Link to Phase I Tools and Findings

STEP 2: SELECT INFORMATION AND ASSESS SUCCESS

When it comes to defining success, you will often find that different people have different ideas about what constitutes success. Managers who approved the knowledge management initiative may want to know whether it

[13] *If only we knew what we knew: the transfer of internal knowledge and best practice*, O'Dell and Grayson, 1998 (chapter 12).
[14] *You know when KM is happening in your organization when…*: http://content.undp.org/go/bcpr/BCPR-Documents/download/?d_id=1145955. This document was originally posted on a Bellanet facilitated discussion list on Knowledge Management for Development Organizations. Please visit www.bellanet.org for more information

helped to raise the profile of their area of work. Users of the knowledge management initiative will want to know how it has benefited them and whether their participation has been worthwhile.

Measuring for the sake of measuring is a waste of time – be sure that you are measuring for a specific purpose or purposes, and that some kind of action or decision will be taken as a result. Measuring against the objectives and goals that you have defined at the beginning of a process is a good way to track your progress and will help you to take appropriate corrective action if necessary.

Spell out the details by clarifying what data will be collected, who will collect it, how, when, where, etc. Use existing measurement systems where they exist, such as the UNDP Staff Survey or the Balance Scorecard, rather than inventing new systems for the sake of it. If your knowledge initiatives work, then you might assume that this will show up in a performance measure such as the Staff Survey.

When analyzing and presenting the results, be sure to refer back to your original goals and your audience. Aim to present results in a manner that answers their questions in a meaningful way, rather than simply presenting facts and figures.

Monitor and evaluate how your measures are working. Developing measures is a process of trial and error – don't necessarily expect to get it right first time. Similarly, remember that as objectives and situations change over time, so your measures will need to change.

KM valuation includes two primary approaches.

- ⇒ Asset Based – identifies intellectual assets and focuses on increasing value.
- ⇒ Knowledge linked to applications and business benefit approaches – these approaches include Balanced Scorecard; inclusive valuation methodology; return on management ratio; economic value-added.

The metrics used for valuation are financial and non-financial; the latter values intangibles such as human capital, social capital, environmental capital and structural capital.

A knowledge asset is any type of knowledge used by the organization and it is related, but distinct from tangible and monetary assets (Ruminzen, p. 230). Knowledge asset has three components (a) the content which is data or information (b) the knowledge structure which is how the content is organized and (c) knowledge reasoning which is the active process that uses the content to complete a task such as problem solving or decision making. KM valuation is the process used to determine the value that will be created and protected by the KM strategy or project (Clare and Detore) identify six steps in the KM evaluation process that moves through identification of opportunities to scope and developing the "value tree" which links the operational impact of the KM project or strategy to economic value.

The measurement of intellectual capital focuses on intangible assets. Measuring intellectual capital requires an understanding of the organization's readiness, cultural enablers and barriers.

- ❖ Approaches to Measuring Results
- ❖ Retrospect
- ❖ Lessons Learned
- ❖ Tying Measures to the Value Proposition
- ❖ Return on Investment – ROI *(Phase 1)*

STEP 3: CHALLENGES TO EFFECTIVE MEASUREMENT

Measuring intangibles is not a traditional approach. The primary barriers to effective measurement (*Butler, 2007*) are: KM efforts often have secondary impacts that executives fail to account for, and that managers are comfortable with financial measures and tangible assets, not with measuring items that cannot be seen and are hard to identify.

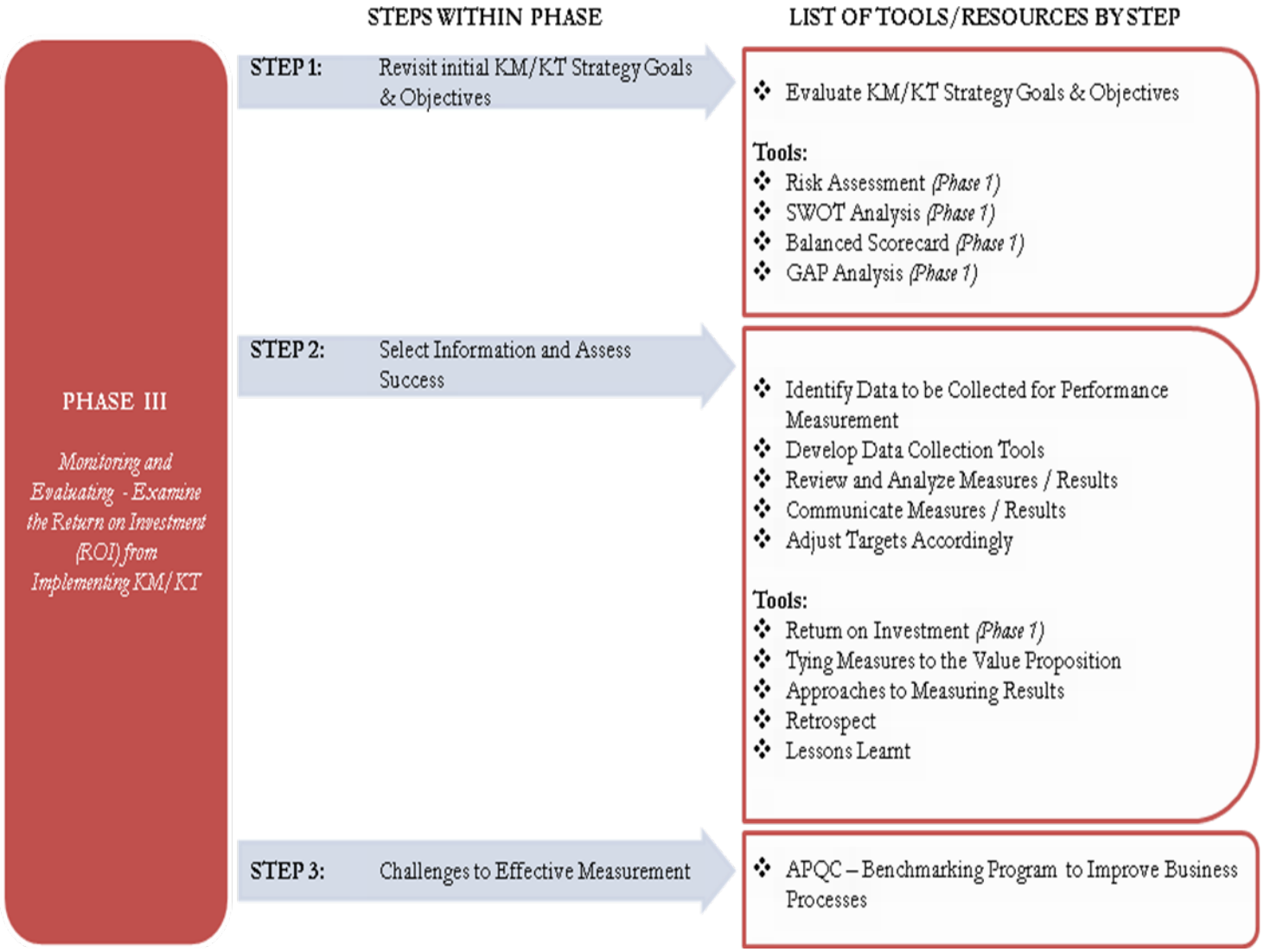
KM initiatives take time, money and commitment but they do pay off and can create revenue. For example, oil companies have shown that sharing technical knowledge among drilling teams reduced problems and speeds the process, saving millions of dollars annually in costs associated with establishing new wells. Similarly, Xerox's Eureka database for communicating copier repair tips among technicians cut costs by 10%. A case study and further examples of successful return on investment strategies are provided below. (*Tom Tobin, Director Business Analysis, A ServiceWare Whitepaper, 2004 "The Insider's Guide to Knowledge Management ROI"*) (*Cohen, D., "What's Your Return on Knowledge?", Harvard Business Review, Dec. 2006*).

Case Study: Financial Service Company – Improving service levels through implementing a KM solution	
Current Situation - 100 agents – 30% turnover - 65% first call resolution - 20% escalation rate - 7 minute average talk times - no self service on the website - 30 days training - inconsistent answers to customers - no effective knowledge harvesting - no formal knowledge sharing - 10% annual growth in contacts	Objectives - Improve overall service levels - Increase first call resolution - Decrease escalations - Deflect calls to self service option - Provide consistent and accurate answers - Reduce training and ramp up times - Decrease employee turnover Status Quo: - 3 year cost: $11.8 million and cost per contact $3.02
ROI: Implementing a KM Solution (expert information systems and decision tools based on analysis of data on customers) - Three year total savings $2.4 million - Cost per contact $0.59 - Breakeven on investment – 10 months	Benefits - improved productivity - fast access to accurate answers - 3 year savings of $2 million - average cost per contact lowered by 35% - improved service levels without increasing staff size

- ❖ APQC – Benchmarking Program to Improve Business Processes

(PHASE III) SUPPORTING INVENTORY OF TOOLS

The KM/KT Toolkit will be structured according to 3 Phases of tools, tips, questions and approaches. Phase 3 will specifically focus on Monitoring and Evaluation – providing organizations with the necessary tools to assess the effectiveness and performance of their KM/KT Strategy.



SUPPORTING TOOL/RESOURCE 01: APPROACHES TO MEASURING RESULTS

There are several common approaches to measuring outcomes from KM/KT investments as identified in the table below.

Approach/Method	Description of Approach
Direct Intellectual Capital (DIC).	These measures estimate the value of intangible assets by identifying their components and evaluating the components.
Market Capitalization Method (MCM).	These are calculated by estimating the difference between a company's market capitalization and its stockholders equity.
Return on Assets (ROA)	The average pre-tax earnings for a specific period of time are divided by the average tangible assets of the company. The result is compared to the industry average and then the difference is multiplied by the company's average tangible assets in order to calculate average annual earnings from the intangibles. Asset allocation is generally defined as the allocation of an investor's portfolio among a number of "major" asset classes. Clearly such a generalization cannot be made operational without defining such classes. Once a set of asset classes has been defined, it is important to determine the exposures of each component of an investor's overall portfolio to movements in their returns. Such information can be aggregated to determine the investor's overall effective asset mix. If it does not conform to the desired mix, appropriate alterations can then be made. Once a procedure for measuring exposures to variations in returns of major asset classes is in place, it is possible to determine how effectively individual fund managers have performed their functions and the extent (if any) to which value has been added through active management. Finally, the effectiveness of the investor's overall asset allocation can be compared with that of one or more benchmark asset mixes.
Economic Value Added (EVA)	This technique focuses on maximizing the wealth of shareholders and calculates an organization's true economic profit. Different investments have always some average return _ The average return is easily achievable _ Therefore it is not wise to accept lower returns _ Losing a part of average return is losing capital Equity has also some alternative return The company generates a positive result only after it has earned more than the average return (on the other hand earning a"zero-result" is completely acceptable achievement if calculated this way).
Scorecard method	Focuses on identifying indicators for a range of intangible assets components. May be reported as numerical scores or graphically. A balanced scoreboard (BSC) approach

Approach/Method	Description of Approach
	concentrates on producing indicators for a range of intangible assets components. The BSC methodology is an analysis technique designed to translate an organization's overall business strategy into specific quantifiable goals and to monitor the organization's performance against those goals (Butler, 2007) Scorecard approaches include: ⇒ A performance measurement approach with four perspectives, of which are intangible assets. The methodology aligns the strategy with the business objectives and provides feedback for how well the strategy is performing (*Ruminzen*). ✓ Financial – analyzes profitability, return on capital, savings, economic value added. ✓ Customer – measures satisfaction levels, response times, market share, quality etc ✓ Internal business process – measures the efficiency and effectiveness of business processes and business process improvements. ✓ Learning and growth – measure employee capabilities, systems capabilities and organizational alignment. ⇒ The Intangible Assets Monitor (*Sveiby*). This model has three categories: ✓ Human competence – looks at people's capacity to action to generate value in various situations. Includes values, experience, social skills, education. ✓ External structure. This refers to how organizations are regarded externally and includes trademarks, brand names and image and encompasses relationships with customers, suppliers and partners. ✓ Internal structure. Includes databases, processes, documentation and intellectual property such as patents and trade secrets. ✓ The three categories are measures against growth/renewal; efficiency and stability.
The Skandia Navigator.	This tool evaluates the soft assets of an organization and uses a management reporting system to help managers visualize and develop measures that reflect intangible assets. There are five components of measures: ⇒ Financial – more traditional approach, such as net return on investments, profits to assets, market value, etc.; ⇒ Customer – typical measures are customers lost, centre; market share ⇒ Process - how the organization uses its technology tools to create value. Typical measures include uptake by employees; organizational IT capacity. ✓ Renewal and development - how the organization is preparing itself for the future. There are six dimensions: customers; attractiveness on the market; products and services; strategic partners; infrastructure and employees. Typical measures include the ratio of training expense to employees; marketing expense to customers; R&D invested in product / service design; patents pending. ✓ Human – measuring the productivity of knowledge workers; what they know. This is the most difficult component since it entails assigning a value to employees. Typical measures includes= annual turnover, average age, percentage of marginalized groups, etc.
Intellectual Capital Index.	This index was developed by government agencies in Scandinavia and Australia. (*Goran and Johan Roos "Intellectual Capital Navigating tin the new business landscape*"). Four high level

Approach/Method	Description of Approach
	categories: relationship capital index; human capital index, infrastructure index and innovation capital index. The index can indicate trends over time, however it does not give a direct financial evaluation of intellectual capital. The process for developing the Intellectual Capital Index is: ⇒ Define the vision and the business strategy for the organization ⇒ Identify the critical success factors for the organization ⇒ Choose the performance indicators for each category of success factors ⇒ Apply weightings to the indicators ⇒ Consolidate the metrics ⇒ Generate the IC Index ⇒ Use it to help determine management actions on the key factors.

Tobin (contends that organizations can receive a return on their KM investments by establishing realistic and achievable goals and adopting a methodology to consistently measure baseline metrics against projected goals. The table below shows some specific metrics for measurement.

Efficiency	Effectiveness	Innovation
▪ Decreasing average handle time ▪ Minimizing talk time ▪ Redeploying FTYE resources to higher value tasks ▪ Reducing after-call work ▪ Reducing 'other' (or unaccounted) time	▪ Increasing first call resolution rates ▪ Shrinking call escalation rates ▪ Reducing repeat calls ▪ Reducing employee turnover ▪ Reducing training time	▪ Providing self service to users on the website ▪ Rerouting calls to email ▪ Creating sales via cross sell and up sell ▪ Increasing customer satisfaction

Source: *Tobin, 2004.*

Sharp (2003) examined several organizations that had invested in KM from many different sectors, including the energy sector (*Duane Sharp "KM Today: Challenges & Opportunities", Information Systems Management, spring 2003, p32*). Findings concluded that ROI often exceeded ten times the original investment. Traditional financial models do not allow the assessment of a company's true worth where the value is not based solely on physical assets but also on knowledge inside people's heads, in corporate files; often intellectual property is the firm's competitive edge. New techniques are needed to measure knowledge and to express it in financial terms. Expressing in financial terms is the basis of development of a business case for KM and selling the investment – be it time and/or money – to senior management and to get senior management commitment.

Sharp and others have recorded the following methods that companies have implemented:

⇒ Email volume is an indicator of knowledge sharing
⇒ Human capital effectiveness – which is the revenue and profit per employee
⇒ Shell International (*see vignette*) calculated its ROI ratio using a random sampling of employees uninvolved in the knowledge sharing activity. They considered the questions asked by drilling and production engineers in its wells community, and then asked a random sample of those engineers to estimate the value of answers

they received by virtue of the KM solution. Those values were then extrapolated to the entire community based on the total numbers of questions asked. (*p34*)

- ⇒ Protecting and leveraging patents – brings in revenue through boosting licensing royalties and reduced tax maintenance bills by identifying unused patents that it can allow to expire (used by Monsanto, Dow Chemical).
- ⇒ Providing knowledge already in the organization to support improved decision making to improve insurance underwriting costs.
- ⇒ Replicating internal best practices to improve productivity (used by Xerox).
- ⇒ Time saved through document management translated into hours saved per week (used by Ontario Power Generation – *see vignette below*)
- ⇒ Knowledge management maturity model developed by the American Productivity and Quality Center.
- ⇒ Surveys – employee, customer, clients
- ⇒ Focus groups / round tables / interviews
- ⇒ Defining ROI in terms of critical failure loss (*Bounds, 2009*). This method looks at risk avoidance and the costs saved through eliminating and/or reducing the risk. For example, a form might be able to save millions over a five year period by reducing the number of critical incidents where a problem solving failure or a knowledge loss occurs. So if a company has lost significant monies over three years due to preventable knowledge failures, then a KM initiative that could reduce those failures by just 20% would provide significant savings. The firm needs to look at the current risk probability; the level the KM can reduce the risk and the true cost of a critical KM failure.

Source:
Asset Allocation: Management Style and Performance Measurement
http://www.evanomics.com/download/Intro.pdf
EVA: http://www.evanomics.com/download/Intro.pdf
Measurement: http://www.scientificjournals.org/journals2008/articles/1269.pdf

SUPPORTING TOOL/RESOURCE 02: TYING MEASURES TO THE VALUE PROPOSITION[15]

Additional information available within Phase I of the toolkit.

When measuring the impact of transfer efforts, take into account your original goal. Each value proposition come with a set of logical "measures" that help you monitor your progress towards your goal, these could include:

Customer Intimacy

- ⇒ Customer retention rates
- ⇒ Number of calls handled per day
- ⇒ Number of calls resolved on first "sitting"
- ⇒ Cross-cutting penetration
- ⇒ Increased revenue from existing customers

Product Leadership

- ⇒ Revenues from commercialization of new product/service
- ⇒ Percentage of revenues from new products//services
- ⇒ Time to market cycles
- ⇒ Ratio of successful to unsuccessful product launches
- ⇒ Number of launches per year

Operational Excellence

- ⇒ Cost per unit
- ⇒ Productivity and yields
- ⇒ Number of defects/poor quality
- ⇒ Production of cycle time
- ⇒ Inventory of carrying costs
- ⇒ Environmental compliance
- ⇒ Safety records

Source: O'Dell, .S, Essaides, N. & C. Jackson Grayson, Jr. (1998) *If Only We Knew What We Know: the Transfer of Internal Knowledge and Best Practice*

Links and Resources in relation to evaluation and monitoring

UNDP Guidelines on Results Career Assessments (RCA):
http://rca.undp.org/index.cfm

UNDP Results Management Guide Implementation Toolkit:
http://stone.undp.org/system2/managingresults/index.cfm

Measuring the Value of Knowledge Management, NeLH online KM library,:
http://www.nelh.nhs.uk/knowledge_management/km2/measurement.asp

[15] O'Dell, .S, Essaides, N. & C. Jackson Grayson, Jr. (1998) *If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice.*

Measuring the benefi ts of knowledge management at Financial Services Authority, by R. Jones, Financial Services Authority, UK Government: http://km4dev.org/index.php/articles/307

SUPPORTING TOOL/RESOURCE 03: RETROSPECT

A Retrospect is a simple tool for learning after an event, activity or major milestone in a project or program. It is a team meeting called after completion of a piece of work.

Benefits of Retrospect:
The objective of a Retrospect is to capture the new knowledge of the team. The benefits of a Retrospect are:
• Identification of valuable lessons;
• Enhanced team openness and cooperation;
• Achievement of closure at the end of the project.

Getting Started:

1. Plan the meeting

- Don't try to conduct a Retrospect by e-mail; it needs to be a face-to-face round table or videoconference.
- Hold the meeting as soon as possible after the project ends, ideally within a couple of weeks. Memories fade. If you wait too long, events become post-rationalized.
- The time set aside for the Retrospect will depend on the number of people involved and the duration and complexity of the project. A very small project (3-4 people, 2-4 months) can be covered in 60 minutes. A 10-person, 6-month project may need four or more hours. A complex alliance between several companies may need two days.
- Consider using audio to record the event. Although this will take extra effort, it will be a valuable source of knowledge for the future and will help provide details in the documentation phase. Using video can be very useful for capturing short video-clips of personal insights (knowledge 'nuggets') to publish and help transfer lessons to others. But, unless you are prepared to 'do it right' with skilled video production experts this should not be attempted. Special care should be taken to ensure videotaping doesn't hamper the open exchange of information and knowledge or disrupt the process.

2. Invite the right people

- The project leader needs to attend, as do the project customer and key members of the project team. It is often useful to invite potential customers for the learning (such as people starting similar projects), but their involvement must be managed in a very sensitive manner to ensure their presence doesn't reduce the open flow of knowledge by the team that performed the project.
- Ask the project leader to schedule the meeting. He or she has the most ownership, knows who needs to attend, and may retain some influence with the project team.
- In the call to attendees, announce that the purpose of the meeting is to make future projects run more smoothly by identifying the learning points from this project.

3. Appoint a facilitator

- You will need a facilitator who was not closely involved in the project; otherwise, the meeting will concentrate on "what we did" rather than "what should the next team do in similar circumstances." If the facilitator is very remote from the project, she or he may need to do some preparation (such as having discussions with key players).
- The facilitator needs to reiterate that the purpose of the meeting is to make future projects run more smoothly by identifying the learning points from this project. The purpose is not to assign blame or praise.

- The facilitator needs to encourage an atmosphere that allows participants the freedom to express opinions critical of anyone. If necessary, introduce "rules of the game." Particular care must be made to 'coach' the project team leader in advance of the session so that their participation doesn't influence the open exchange of knowledge.

4. Revisit the project's objectives, deliverables, and measures

- This is the point at which you ask, "What did we set out to do?" and "What did we really achieve?"
- The facilitator may want to ask the customer, "Did you get what you wanted?"
- It often helps to have the team leader to list the objectives in advance and have them posted on a flipchart to use to prompt the team for input. If this approach is used, be sure to encourage the team to modify and add objectives as they understood them for the project. Any differences may point to key learning areas to prompt for later.

5. Revisit the project plan, process and/or timeline

- Some facilitators like to construct, with the team, a flow chart of what happened, identifying tasks, deliverables, and decision points. This way, you can identify those parts of the project that experienced delays, were completed ahead of time, were particularly efficient or inefficient, and where the team was unclear about what really occurred.
- You can then draw an idealized process: how it should have worked!
- Another approach is to construct a timeline that identifies key milestones, deliverable and events. This is used to help refresh the memory of the team and may point to key learning areas for further discussion in the following sections. If this approach is used, a good idea is to have the team leader build this in advance on flipchart paper (may take several sheets) and have it posted on the wall in the room for people to review and discuss. Leave space for people to add items that stood out for them

6. Next, ask, "In the context of reaching the objective, what went well?"

- Always start with the good points! We want to build on best practice as much as we want to avoid repeat mistakes. It is best to start the meeting on a positive note.
- Go around the table asking each individual what their success factors were.

7. Find out why aspects of the project went well and express the learning as advice for the future

- We are getting to the meat of the meeting, now. Identify the success factors, so they can be repeated in the future.
- Ask such questions as: "What repeatable, successful processes did we use?" "How can we ensure future projects go just as well or even better?" "Based on your success with this project, what would your advice be to future project teams?"

8. Then, ask: "What could have gone better?"

- There are bound to be some areas where things could have gone better, where pitfalls were identified too late, and where process was suboptimal. Go around the table again and ask each individual. You may want to start with the team leader. If the team leader admits that things could have gone better, a good precedent has been set for others to speak openly.

9. Find out what the difficulties were

- The facilitator should ensure that this section of the process does not become a witch-hunt or a finger-pointing exercise. If necessary, remind the meeting that the purpose of the meeting is not to assign blame, but to make sure similar projects go smoothly in the future. Think positively!

- Identify stumbling blocks and pitfalls, so they can be avoided in future. The following questions are useful: "Given the information and knowledge we had at the time, what could we have done better?" "Given the information and knowledge we have now, what are we going to do differently in similar situations in the future to ensure success?" "Based on your experiences with this project, what would your advice be to future project teams?"

10. Make sure the participants leave the meeting having had their feelings acknowledged

- You do not want anyone to leave the meeting feeling that things were covered-up or that valuable effort was not acknowledged.
- To help you access residual feelings of dissatisfaction, begin by asking people for a numerical rating of the project. Ask, "On a scale of 1 to 10, how satisfied are you with this project?" You can then ask, "What would have made it a 10 for you?"
- This will often result in bringing some new information into the room from some of the team that didn't express their views previously. This may be source for follow-up and further discussion.

11. Summarize the learning from the project in terms of "lessons for the future"

- Meeting results are intended for teams running similar projects in the future.
- Express the lessons as advice. Express them as clearly, measurably, and unambiguously as possible. Ask yourself, "If I were the next project leader, would these lessons be of any use to me?"
- Make sure you circulate the lessons, together with any other outcome from the meeting. Ask participants to comment. Make sure no one is misquoted and that the facilitator's wording of the lessons really reflects the views of the team.

12. Plan for Action (Optional)

- Some teams will want to use the opportunity and findings from the session do some action planning to:
  - Address some of the lessons that emerged that are highly relevant to their team's on-going performance;
  - Pursue things they now want to differently; and
  - Further explore and analyze specific areas that went well, or could have been more effective, which were identified but time didn't allow for thorough discussion.

- Capture the key actions in a simple table format on a flip chart: What, Who and By When.

13. Record and publicize the lessons

- Make sure that people looking for these lessons will be able to find and understand them, and that they know how to contact the people involved. Put the lessons on the organization's internal Intranet or portal and make them searchable. Make sure the context is explained and include links to the people who can explain the lessons and other relevant documents that others may find useful in helping to re-use or adapt the lessons.

Source:
This guide is based on the work of Kent Greenes (www.greenesconsulting.com) and the KM Team at British Petroleum from 1995 to 1999.

SUPPORTING TOOL/RESOURCE 04: LESSONS LEARNED

The sharing of good practices is one of the first things carried out in a knowledge management initiative. In most organizations it is already being done to some degree. This often begins with common practices such as instruction manuals or 'how to' guidelines. The next step from there is to identify and share good practices.

The essence of identifying and sharing good practices is to learn from others and to re-use knowledge. The biggest benefit consists in well developed processes based on accumulated experience.

Most good practice programmes combine two key elements: explicit knowledge such as a good practices database (connecting people with information), and methods for sharing tacit knowledge such as communities of practice (connecting people with people).

The best way of sharing good practices is 'on the job' and so communities and personal contact with others who have used the good practice is a key to success.

Getting Started:

- Identify users' requirements.
- Identify good practices worth being shared.
- Document good practices (title and short abstract, profile of the good practice, context, description of processes and steps, lessons learned, and links to resources and key people).
- Validate good practices with convincing results in a new context.
- Disseminate and apply good practices.
- Develop a supporting infrastructure.

What is identifying and sharing good practices?

The sharing of practices is often one of the first things to be carried out in a knowledge management initiative. In most organizations it is already being done to some degree. This often begins with common practices such as instruction manuals or 'how to' guidelines. The next step from there is to identify and share good practices.

A good practice is simply a process or a methodology that represents the most effective way of achieving a specific objective. Some people prefer to use the term 'good practice' as in reality it is debatable whether there is a single 'best' approach – and of course approaches are constantly evolving and being updated. So another way of defining a good practice is one that has been proven to work well and produce good results, and is therefore recommended as a model.

Much of good practice knowledge is tacit - held in people's heads and not always easy to document. Therefore most good practice programmes combine two key elements: explicit knowledge such as a good practices database (connecting people with information), and methods for sharing tacit knowledge such as communities of practice (connecting people with people). These two approaches are complementary. A database can provide enough information for a potential user of the good practice to find it and decide if it is worth pursuing further. However the best way of sharing good practices is 'on the job' and so communities and personal contact with others who have used the good practice is key.

Benefits of Lessons-Learned and Sharing Best Practices

The essence of identifying and sharing good practices is to learn from others and to re-use knowledge. Effective sharing of good practices can help organizations to:

- identify and replace poor practices
- raise the performance of poor performers closer to that of the best
- avoid reinventing the wheel
- minimize re-work caused by use of poor methods
- save costs through better productivity and efficiency
- improve services to patients.

Good practice programmes are most appropriate in organizations where processes are quite well developed and where a certain amount of knowledge and experience has been accumulated. They are most useful where an organization has several units or people performing similar tasks but who are widely dispersed and so do not tend to learn from each other through day-to-day contact.

From the individual lesson learned…

Lessons Learned have a lot to do with making mistakes and avoiding making the same mistakes again.

Making mistakes is normal business in life. We have to try out what works best in any new situation we are facing. It is likely that we will not find the optimal way in the first go. In such a trial and error approach making mistakes is normal. Making mistakes is one important source for lessons (to be) learned. The question is: How many times do we have to repeat the same mistake to recognize it as a mistake and to learn a lesson?

Two main questions are behind lessons learned:

- "Did we do the right thing?"
- "Did we do it right?"

We learn lessons based on good or bad experience. We tend to repeat, imitate or transfer a good experience into new contexts; we try to avoid a bad experience in future. Learning lessons most often implies an analysis of the situation, the frame conditions and the specific elements that made it a success or a failure.

The concrete result of a lesson learned is most often a recipe, a slogan, a guideline, a procedure, combined with memories of a concrete situation. Lessons learned are most often – consciously or unconsciously – based on and combined with perceiving and valuing: We liked or disliked an experience for some reasons. We perceive one aspect as important, while others are less important in our perception.

… to a lesson learned by the team and …

In a team, the situation becomes more complex. The team members often draw different lessons after having gone through the same process. Different perception and different value-systems lead to different lessons learned. Lessons learned in a team need sharing different views and values, discussion and consolidation of differences.

A team intending to identify lessons learned must refer the reflection process to agreed upon objectives. A common reference grid is a prerequisite for common lessons learned.

… by the organization

What is true for a team is even truer for an organization. The organization has to respond to different interests. These interests materialize at different levels. The step from individuals to team lessons learned will be repeated from the team to the organizational level: The lesson learned by a team, may not be identical with the lesson learned by the organization. In an organization, strategic considerations and systemic effects may lead to drawing different conclusions from those of a team or individuals.

Getting Started:
In Good practices in good practices (see 'Resources and references' below for details); David Skyrme recommends a 6-step approach to identifying and sharing good practices. This is summarized here. The overall approach is aimed at documenting the essential features of a good practice, giving pointers to relevant experts in that practice, deducing general guidelines, diffusing basic knowledge, and using subject matter experts to apply and adapt the practices in a new context.

The key steps are as follows:

1. Identify users' requirements
This step may sound obvious, but it is not uncommon for someone given the task of capturing good practices to start by designing a database, when clearly this is a case of putting the cart before the horse. Start by considering where you can really add value. Look at what areas of the organization need attention because of poor performance or difficult challenges. Who can most benefit from better knowledge and understanding of good practices? How will they access and use them?

2. Discover good practices
There are various methods of identifying good practices. One approach is to look at who is producing excellent results and is therefore likely to be using good practices. Having discovered these people, you will then need to discern which parts of their overall approach or methods being used are actually good practice. This is best done by people knowledgeable in the relevant practices such as subject matter experts, internal auditors, consultants and peers. A range of alternative approaches for identifying good practices can be found within various knowledge management tools. These include communities of practice, after action reviews, knowledge harvesting and exit interviews. Don't necessarily limit your search to only include practices within your organization; much can be learned from the practices of other organizations in your field, or even organizations in other industries.

3. Document good practices
Good practice descriptions are usually kept in a database in a standard format. A typical template might include the following sections:

- Title – short descriptive title; this can be accompanied by a short abstract.
- Profile – several short sections outlining processes, function, author, keywords etc.
- Context – where is this applicable? What problems does it solve?
- Resources – what resources and skills are needed to carry out the good practice?
- Description – what are the processes and steps involved? Improvement measures – are there performance measures associated with this practice?
- Lessons learned – what proves difficult? What would the originators of the practice do differently if they were to do it again?
- Links to resources – experts contact details, workbooks, video clips, articles, transcripts of review meetings.
- Tools and techniques used.

The aim at this stage is not to describe the practice in great detail, but to give enough information to allow users of the database to decide whether it matches their needs and where they can find further information. A key consideration is how you organize and classify the in-formation in your database so that users can readily find what they need.

4. Validate good practices

A practice is only 'good' or 'best' if there is a demonstrable link between what is practiced and the end result. In most organizations and especially in areas where practices are constantly evolving, rigorous cause-and-effect analysis is impracticable. Hence a degree of subjective judgement is needed as to what constitutes 'best'. A common approach is to have a panel of reviewers comprising internal and external subject experts and peers, who evaluate a potential good practice against their knowledge of existing practice. It is equally important to ensure that you seek input and feedback from customers (i.e. the ultimate beneficiaries, such as patients) of the good practices.
In the context of the NHS, a further important consideration is that of evidence-based practice. When identifying and validating good practices, it is important to ensure that these are based on a combination of both on-the-job experience and sound research evidence.

5. Disseminate and apply

While a database of good practices is a useful starting point, most organizations find it essential to complement this with face-to-face knowledge sharing about those good practices. This is where the real value is added. Not only does it help the recipient dig beneath the explicit knowledge and gain more in depth insights, but it can also provide a two-way benefit in that dialogue between the conveyor of good practice knowledge and the recipient can enrich the knowledge of both.

Common ways of sharing good practice knowledge include: communities of practice; improvement groups or quality circles in which teams within an organization meet regularly to discuss ways of improving a process; visits to other departments or organizations with good performance; organized learning events such as share fairs that bring people together to share specific knowledge and experience; job secondments or exchanges; etc.

6. Develop a supporting infrastructure

To successfully implement a good practice programme, you need to ensure you have the required infrastructure in place. This infrastructure is often developed as part of a wider knowledge management strategy. Typically, several generic aspects need attention:

- The people to facilitate and drive the process through its initial stages, until it be-comes embedded in the organization's ways of working (e.g. a good practices team, or a network of good practices co-ordinators).
- The technical infrastructure for document sharing and databases.
- The content management infrastructure to ensure that good practices are documented and classified electronically in a way that makes them easy to find.

Key Considerations:

- Establishing a programme to identify and share good practice is not generally a 'quick fix' solution for organizations that are relatively new to knowledge management. Set-ting up the required processes and infrastructure can be quite a big task, unless you already have some aspects of a knowledge management infrastructure in place.
- As with any knowledge management initiative, don't forget the importance of motivation and culture. The ease with which good practices emerge and are shared depends on the culture of your organization. If there is a 'not invented here' culture, then good practices will be slow to emerge and spread, as each part of the organization will defend its own way of doing things rather than learning from, and sharing with, others.

Where people are generally encouraged to seek out knowledge and learning, good practices are more likely to emerge and spread.

- Try not to get too prescriptive about good practices. Rather than putting in rigid rules that say 'this is good practice and you should follow it', focus more on encouraging people to develop and share good practices voluntarily.
- Do not make the mistake of focusing on capturing good practices for the sake of capturing them. Focus on how they can be used to add value. Who are the users? What are their issues? What kind of knowledge do they need to perform better? How might they best assimilate that knowledge?
- You will need to actively promote your good practice resources. Otherwise you may end up with databases and people that are under-used and not fulfilling their potential.
- Be sure to demonstrate the benefits and the evidence. Use case examples to show the benefits of sharing good practices, and as far as possible, demonstrate how a good practice has contributed to better performance.
- Remember that good practice is constantly evolving. Therefore feedback mechanisms must be built in so that the value of existing good practices is constantly assessed, and feedback used to create further improvements.

- • Resist the temptation to focus on explicit knowledge – it cannot be emphasized enough that databases of good practices are insufficient. Databases point to examples and people, but it is through people that deep knowledge is transferred.
- • Spreading good practice across the NHS is already happening on a number of levels. On a national level, as part of the Modernisation Agency, the NHS Beacons Programme (see 'Resources and references' below) is identifying services that have been particularly innovative in meeting specific healthcare needs, and encouraging them to share their experience so that others can benefit by using or adapting original ideas to suit their own circumstances, saving time and resources and avoiding duplication of effort

Source:
http://www.library.nhs.uk/knowledgemanagement/ViewResource.aspx?resID=87817&tabID=290&catID=10417

Resources and references
Books and guides

Clemmons Rumizen Melissie. (2002) **The complete idiot's guide to knowledge management**. Madison, WI: CWL Publishing Enterprises. Chapter 9: Strategic choices for connecting people to people. Provides a fairly brief overview of good practice systems, but does include an inter-esting case study featuring the American Red Cross. (Again, this book as a whole is well worth a look – extremely easy to read, very comprehensive and full of sound, practical advice).

Collison, Chris and Parcell Geoff. (2001) **Learning to fly: practical lessons from one of the world's leading knowledge companies**. Oxford: Capstone. Chapter 11: Leveraging what we've learned. Touches fairly briefly on good practices as part of a wider review of capturing and sharing knowledge and learning. (This book as a whole is well worth a read – refresh-ing low on theory and jargon, and high on sound, practical advice based on proven results).

Skyrme David J. (2002) **Best practices in best practices**. David J Skyrme Associ-ates. A 17-page guide available for online purchase either as a pdf file or in hard copy at £7. Provides a 6-step process of identifying, discovering, documenting, validating, applying and developing a good practices programme, and includes case studies. Well worth buying if you are thinking of following this route.

Zairi, Mohamed. (1998) **Benchmarking for Best Practice: The Art of Applying Ef-fective Quality Management**. Butterworth-Heinemann A useful overview with theory and practice, as well as case studies.

Articles

Kwiecian, Stan. **Best practice replication: the evolution of KM at Ford Motor Company**. Knowledge Management, 2001, October, Vol 5 No 3 Explains how in 1995 Ford initiated a scheme to make it easier for its dispersed facto-ries and divisions to communicate and replicate best practices.

SUPPORTING TOOL/RESOURCE 05: APQC'S BENCHMARKING PROGRAM TO IMPROVE BUSINESS PROCESSES

Knowledge taxonomies and open standards can improve benchmarking and speed knowledge transfer. Effective benchmarking requires a systematic process for examining internal processes, funding other organizations that perform such processes better and learning how they do it. Knowledge taxonomy refers to the classification system used when identifying, creating and distributing knowledge. A common taxonomy makes the job of comparing practices within and, if possible, between companies a much simpler and more valuable exercise. The more detailed and widely recognized such a classification system is, then the more useful it will be. KM creates the systematic processes to share business practices with people across the organization.

Approach

Four Phase Model Cycle:

- ⇒ Planning: This phase sets the groundwork for identifying performance goals and best practices. The phase includes:
  - Defining the scope of the benchmarking exercise
  - Selecting an area of focus aligned to the business strategic priorities.
  - Identify the audience – this enables knowledge sharing and action (a key reason for undertaking benchmarking)
  - Engage the intended audience.
  - Identify performance indicators
- ⇒ Collect Data: Adopting standard business process definitions and metrics make it easier to find and reduce the cost of gathering reliable data and practice information.
  - APQC's process classification framework was launched in 1992 as taxonomy of business processes for member organizations. Semi annual updates have kept the taxonomy up to date to reflect new enterprise a=categories and processes. Operating and management processes are organized into 12 enterprise level categories and over 1500 associated activities.
  - Enterprise and industry-specific process classifications form the foundation of the APQC's Open Standards Benchmarking Collaborative (OBSC). This is an complimentary benchmarking program operated by APQC that allows companies to compare their performance data against that reported by thousands of other operations. Therefore, instead of struggling to develop a taxonomy that will allow an apples-to-apples comparison, the OBSC database can be used immediately to start a gap analysis and identify best practices.
- ⇒ Analyzing performance gaps
- ⇒ Adapt and improve: The most successful organizations (according to O'Dell, APQC) are those that devote 50-% of their benchmarking time to the final stage, using the knowledge gathered to modify their business processes. This includes sharing best practices, creating improvement plans and executing the plans.

Thomas Steel Strip, Ohio used the APQC Benchmarking program to compare their manufacturing and order-management processes. Managers commented that, "*The OBSC research offered a way to get the benchmark data by setting up a communal sharing of information. You put your data in and you're authorized to get benchmark data out*".

Source:
http://kwork.org/white_papers/KMAT_BOK_DOC.pdf
http://kmedge.org/

2. Emerging / Innovative Practices

What follows is a draft of a KM/KT Emerging/Innovative practices that were identified through the extensive literature review undertaken to support this study. Practices and tools are selected based primarily on the literature and best practices review, as well as some initial key stakeholder consultations. Generally speaking a best practice is a technique or methodology that, through experience and research, has proven to reliably lead to a desired result. In many cases, the best practices and tools are provided as interesting approaches and tools, since they may not yet have been evaluated. These examples are included as well since they might help organizations within the Canadian electricity sector meet their KM/KT objectives. Where possible, best practices are described including how it has been put in place and results if known.

BEST PRACTICES/LESSONS-LEARNED

The essence of identifying and sharing good practices is to learn from others and to re-use knowledge. The biggest benefit consists in well developed processes based on accumulated experience. Most good practice programmes combine two key elements: explicit knowledge such as a good practices database (connecting people with information), and methods for sharing tacit knowledge such as communities of practice (connecting people with people).

Summary Description	Page Reference
Best Practice Studies or Meetings: Best practices meetings or studies look for different processes or systems to perform work that have had measurable success and effectiveness and are likely transferable. Best practices are found in a variety of ways; through meetings of similar functional groups, polling employees or surveying for best practices. Too often we assume that best practices occur outside our organizations. But it is possible that the organization has its own existing best practices. These can be shared in meetings/studies. (See also Lessons Learned).	**n/a**
Critical Incident Interviews or Questionnaires: First described in the 1950's, the critical incident method takes its name from tapping the lessons of experience. A critical incident is a difficult (critical) situation (incident). By documenting the lessons of experience from the organization's most experienced performers, the organization can capture the fruits of experience. Of course, by documenting such "difficult cases" -and how they were handled- the organization is also laying the foundation for the development of a manual or automated expert system. Critical incidents provide an excellent foundation for training. By documenting the critical incident experiences from the organization's most experienced performers, the organization can capture lessons for knowledge transfer.	**176**
Lessons Learned: These debriefings are a way to identify, analyze and capture experiences, what worked well and what needs improvement, so others can learn from those experiences. For maximum impact, lessons learned debriefings should be done either immediately following a project/event or on a regular basis, with results shared quickly among those who would benefit from the knowledge gained. They identify what was done right and what could be done better the next time Why: Identify and capture the things that went well and the things that could be improved so that team members are aware of and can use the broader team's learning in their future projects. These	**208**

can also be shared with future teams so that they can learn from experiences of others.	

OVERVIEW OF GENERAL BEST PRACTICES

Attracting, developing, and retaining a knowledgeable work force is a major issue for senior management teams, but many are not yet aware of the scope of the problem or potential solutions such as knowledge management. In 2002, 24 sponsors and nine best-practice partner organizations (two organizations participated both as sponsor and best-practice partner organization), joined with the American Productivity & Quality Center (APQC) in a study (conducted over a five-month period) to identify how the principles, tools, and practices of knowledge management can be applied to retain valuable knowledge before it leaves the organization with exiting employees and transfer that knowledge to the organization's new members.

FIGURE 1: Approaches to Knowledge Retention (Partners)

	Siemens	Corning	World Bank	Northrop Grumman	Xerox Connect	Best Buy	TVA	BOM
CoPs and internal networks	✓		✓	✓	✓	✓	✓	✓
Interviews		✓	✓				✓	
Videotaping		✓	✓	✓				
SME directory	✓	✓	✓	✓	✓			
Repositories	✓	✓	✓	✓	✓	✓		
After-Action Reviews/ Project milestone reviews	✓				✓			
Mentoring programs	✓				✓		✓	
Knowledge maps	✓	✓		✓	✓	✓		✓
Recruiting strategy	✓		✓	✓	✓			
Retention strategy	✓			✓	✓			✓

To address the challenge of retaining and transferring tacit and explicit knowledge across their respective organizations, the best-practice partners involved a study developed a toolkit of approaches. Figure 1 shows the major categories of approaches each partner organization uses in its knowledge retention efforts. Within many of these categories, partners leveraged previously existing tools and skills to address retirement, attrition, and internal redeployment.

Partners report that internal networks, the documentation of the work flow/process (i.e., repositories), and project milestone reviews are the most frequently used approaches for capturing tacit knowledge. For partners, the most effective approaches were project milestone reviews, communities of practice (CoPs) and internal networks, conferences for knowledge sharing, and interviews. After-Action Reviews are reported as effective almost as frequently.

For explicit knowledge, the survey and site visit data indicated that 67 percent of partners rely heavily on collaboration tools for capturing explicit knowledge and indicated that use of these is part of employees' work flow or daily activities. Other tools used to capture explicit knowledge include content management systems, document management systems, and shared folders or drives. The most effective approaches to capture explicit data are CoP work spaces, engagement team databases, issues systems, decision support systems, and collaboration tools.

As for the effectiveness of approaches for knowledge transfer, partners indicated that the most effective approaches are communities of practice, face-to-face team or department meetings, e-mail, one-on-one consultation with an expert, and apprenticeship programs. With the exception of e-mail, all of these approaches involve a face-to- face or personal component.

All study participants report the importance of measuring ROI and evaluating the effectiveness of transfer.

The major objectives of the best-practice organizations parallel those of sponsors. In rank order, these objectives are:

- build a knowledge-sharing culture in the organization,
- prepare new hires more quickly,
- capture valuable knowledge as employees leave the organization,
- capture project lessons learned for re-use,
- prevent the loss of technical knowledge, and
- provide newer/younger employees with access to more experienced/knowledgeable employees.

APQC[16] discovered some additional overarching findings that provide guidance on how to successfully retain valuable knowledge

1. The best way to retain valuable knowledge in the face of attrition or downsizing is to build and sustain systemic knowledge management approaches. Best-practice organizations in this study embedded their knowledge retention efforts in their overall knowledge management strategy.

2. To identify what knowledge was critical to capture, 89 percent of the partners had discussions with senior management and interviews with employees or subject matter experts. The next most frequently used approach was communities of practice. Partners rarely interview departing employees because it may be too late to capture knowledge at that time. When study participants were asked to share the specific criteria used in their organization to gauge the knowledge, "relevance of the knowledge to the business strategy" surfaced as the most important criteria.

3. The most effective way to capture, retain, and transfer valuable knowledge is to embed that process into the work flow. This not only retains the context, but also links the sources and creators of knowledge while they are still available to learn from each other. Examples of this abound: After-Action Reviews, team meetings, and communities of practice. It takes a conscious and disciplined approach to make it happen.

Study participants report that project reviews and milestone reviews are most effective. After-the-fact tacit knowledge codification is better than nothing, but it loses the richness of context and dialogue; it is critical to

[16] American Productivity & Quality Center (APQC), Retaining Valuable Knowledge: Proactive Strategies to Deal with a Shifting Work Force, July 2002

facilitate people-to people learning or tacit knowledge transfer during the process itself. For example, each Corning employee builds knowledge in project teams and relies on synchronous and asynchronous forms of communication to transfer and build knowledge. (Examples of synchronous communications are phone calls and videoconferences, and examples of asynchronous knowledge sharing are shared files and e-mails.)

4. The study partners rely on communities of practice to embed and transfer organizational knowledge. Partners remarked that tacit knowledge—the most valuable and difficult knowledge to distil in any organization—is best retained through communities of practice and networks. At the World Bank, building informal networks, identifying the right leaders, supporting and enhancing grassroots communities, integrating with core business processes, and balancing creativity and accountability are all integral components of successful communities of practice. The fact that the World Bank's communities exist in support of its core business has also contributed to its success in knowledge sharing and retention.

5. Cultural changes require understanding the impact of formal evaluation and performance, creating rewards and awards for teamwork, understanding the need for knowledge expositions and fairs (the creation of an innovation marketplace), and sharing stories that emphasize the desired knowledge-sharing behaviour. Siemens, Corning, and the World Bank embed knowledge sharing into their formal rewards and recognition systems, such as performance appraisal. Best Buy also provides special recognition and prizes for outstanding examples of knowledge sharing role models.

6. This study did not find any unquestionably superior application or technology for knowledge retention. Most organizations use common basic tools, such as collaborative applications, data repositories, e-mail, and videoconferencing.

7. Best-practice organizations typically have three critical elements in their knowledge management and retention support structures: senior management support, a central knowledge management support group, and the involvement of different business units or functions in the initiative. The study partners all have strong, active support from senior-level executives, and all have an ongoing knowledge management group responsible for stewarding the process.

8. The reported costs for knowledge retention initiatives are less than knowledge management initiatives in APQC's prior studies, apparently due to the fact that best-practice organizations build on knowledge management tools and skills already in place and often build retention activities into the existing work flow.

9. The knowledge management groups at study partners often work closely with human resources teams to design and implement knowledge retention strategies, including hiring employees who will work effectively in a knowledge-sharing environment. For example, the knowledge management team within Xerox Connect worked with HR to establish its Knowledge Management Practitioner Trainee program, a mentoring program for new hires. Additionally, HR now assesses the knowledge sharing behaviours of potential new-hire candidates by asking related questions designed to show if a person shares or hoards knowledge.

10. Best-practice organizations measure the effectiveness of knowledge retention initiatives through a variety of methods. Partners and sponsors reported that the most effective methods to measure the success of knowledge transfer are conducting user surveys, tracking the number of knowledge objects accessed and used, tracking knowledge transfer activities, and capturing KM success meaningful stories. Most struggle to find measures that convince financial analysts, but as long as their senior operating managers can see the value directly themselves, their support is ensured. Best Buy, for example, has developed a balanced scorecard measurement system that tracks and links knowledge management behavioural change with business outcomes.

11. Best-practice organizations demonstrate a link between knowledge management and organizational learning. Siemens, the World Bank, Corning, Xerox Connect, and Best Buy are all in the process of taking the valuable knowledge captured and embedding it into the learning process. Corning's vision is for knowledge sharing and organizational learning to become a core competency, which will enable it to "out-learn" the competition and prepare Corning to lead the next wave of change in technology innovation.

BEST PRACTICES IN KNOWLEDGE MANAGEMENT

SOLAR INDUSTRY

Common Structure for Archiving & accessing Solar Resource Products & Information / Standardization / Improved Tools

Overview

In 2004 the solar industry, under the International Energy Agency (IEA), established a Solar Resource KM Taskforce to discuss the sector's needs and to develop a work-plan to address those needs. The participant countries included: Canada, EU, France, Germany, Portugal, Spain, Sweden, Switzerland, USA. The industry realized that it needed new tools which were not available in the marketplace, that international R&D collaboration was needed to speed up the development of the sector, a need to make more effective use of synergies within the renewables sector, a need to develop solar resource tools and databases and to be able to offer a wider range of products to more customers. Specific needs identified:

- More site and time specific information
- Improved accuracy through commonly acknowledged validation and standardized products
- Customized easy to access products shaped towards user needs
- Global geographic information
- Improved service availability and reliability
- Improved spatial and temporal coverage and higher accuracy

The sector developed the collaborative strategy under the aegis of the IEA. The IEA does not supply funds but offers organizational space for coordinating further R&D work and receiving direct feedback from users and can provide a web-portal under the internationally accepted IES logo to provide guided access to distribute solar resource products.

The target audience for the products and services emerging from work of the taskforce are the various users of solar energy applications and other stakeholders, all represented within the IEA. Target audience includes:

- Industry: construction, PV, CSP, and SMEs involved in planning and monitoring of solar systems.
- Solar heating and cooling
- Concentrating solar power
- Future solar markets – solar process heat and chemical products and water desalination and detoxification
- Finance and insurance sector – bilateral banks, donors, venture capital, fund managers and re-insurance companies.
- Electricity sector – network and retail utilities, rural authorities, independent power producers.
- Governments – national, regional, local and regulatory agencies
- NGOs and other promoters of solar energy
- Research organizations.

Detailed Description of the Tool/Practice

The vision of the KM initiative is: "The IEA Task "Solar Resource KM" provides the solar energy industry, the electricity sector, governments, and renewable energy organizations and institutions with the most suitable and accurate information of the solar radiation field at the earth's surface from the precise long –term satellite data sets

to up to date products and towards forecasts and scenarios on to future availability of solar resources in a changing climate (*slide 27 Myers*)

The three main objectives of the KM project are:

- To provide further standardization and benchmarking of international solar resource data sets to ensure worldwide inter comparability and acceptance.
- To provide improved data reliability, availability and accessibility in formats that address specific user needs, and
- To develop methods that improve the quality and the spatial and temporal coverage, with customized solar resource products, including reliable solar radiation forecasts.

Achieving the objectives will reduce the costs of planning and deploying solar energy systems, improving efficiency of solar energy systems through more accurate and complete solar resource information, and increasing the value of solar energy produced by the systems.

The KM activities identified for the 5 year work program (2005-2010) were independent from each other, were comprehensive and were charged with leading to tangible deliverables and products. Solar resource information is defined as "all data describing site and time specific physical parameters of solar radiation at the Earth's surface needed for the design and operation of solar energy systems". (*Presentation by R. Myer, Institute for Atmospheric Physics, EC Joint research Centre Symposium, Italy, Dec 2004 slide 26).* Relevant solar applications include: building and cooling (SHC); photovoltaic (PV) and concentrating solar power systems (CSP) for producing electricity and process heat. KM is being used to flow information to serve the evolving applications of these technologies, including their role in distributed energy networks.

The KM activities were grouped into three sub-tasks:

1. Standard qualification for solar resource products – setting standard for solar resource products, validation in accordance with worldwide comparability and acceptance. The subtasks involved:
    a. Select / qualify measurement data set
    b. Measures for model quality for product validation
    c. Method for establishing benchmarking of products
    d. Application of benchmarking procedures
2. Development of a common structure for archiving, processing and accessing solar resource information (e.g. through a single portal). The subtasks involved:
    a. Identifying commonly used software by end users
    b. Developing data exchange protocols
    c. Developing a network of resource providers
    d. Evaluating legal aspects
    e. Automatic access by commercial applications
3. Improved techniques for solar resource characterization and forecasting to enhance quality and develop new and more versatile products. The activities entailed the development of eight solar industry products (radiation products, satellite models, micro sitting) and analytical and forecasting tools.

Approach

The following approach is being implemented:

- Defining the products and services of the key industry stakeholders

- Bringing together the leading experts from all disciplines needed to best solve the questions
- Providing globally comparable products based on the most suitable data and best methods from around the world
- International cooperation is a "must"

Results

Benefits

The benefits of developing and making available solar resource information to industry players are many, including:

- Knowledge on solar energy potential on a regional, national and global scale
- Economic assessment of project feasibility for calculating solar energy yields – i.e. improved information on where systems become economically viable.
- Site specific optimization of solar systems
- Optimizing operations
- Distributed power generation management
- Market development scenarios
- Knowledge of solar resource and real weather data critical for the development of solar energy technologies
- Provide assistance for joint implementation projects that contribute to studies on energy and climate.
- Improved knowledge will help to increase the usage of solar energy in the future since use is still marginal.

Lessons Learned to Date

2008 Highlights have been reported *(Highlights Report SHC Task36 Solar Resource KM*). Task 36 is focusing on development of products that will reduce risks in project implementation, increase access to key data products and provide guidance on the reliability of various solar data sets.

- Development and testing of a variety of solar resource forecasting methods. This is integral to the cost effective and successful operation of large scale grid-tied solar energy systems.
- Utilities and system operators can use the forecasts to predict the approximate amount of energy they can rely upon over the next several hours to the next 3 days.
- Initial studies have examined 60 hour ahead hourly forecasts from publicly available forecasting sources. The forecasts were compared against measurement at three high quality solar monitoring sites in the US.
- By 2010 a Best Practices Guide will be published by the Taskforce to capture the key findings of the five year program.

Examples of where the tool is being used

The tools are useful for utilities sector, system operators, project planners and developers, financial institutions and many other stakeholders in the solar energy business.

Resources

Project Leader: David Renne, National Renewable Energy laboratory, US. David_renne@nrel.gov
http://www.iea-shc.org/task36/publications/index.html
The Role of the new IEA Task on Solar resources Knowledge Management for Satisfying Future Data Needs, presented by Richard Meyer (Institute for Atmospheric Physics) , at the JRC-EC / EdM workshop on Solar resources from the Local level to the Global Scale in Support of the Resources Management of Renewable Electricity Generation, Dec 6-7, 2004, Ispra, Italy. Plus two papers on the KM project from the IEA website – 2008 Highlights Task 36 / other reports are not titled or authored)

NUCLEAR INDUSTRY

International Identification & Sharing of Best Practices to Address Aging Workforce Issues

Overview

The aging nuclear workforce is well documented by the sector. The Nuclear Energy Institute (NEI) projected approximately 40% of the workforce will retire or leave in the next five years (2005 workforce survey. The aging workforce has a major impact on the industry internationally, compounded by other factors such as rapid industry growth and experience dilution. Nuclear organizations are in various stages of efforts to address the challenges.

International groups involved in this initiative include:

- EPRI – Electric Power Research Institute
- IAEA – International Atomic Energy Agency
- INIS – International Nuclear Information System
- INPO – Institute of Nuclear Power Operations
- NEI - Nuclear Energy Institute
- TVA - Tennessee Valley Authority
- WANO – World Association of Nuclear Operators

Detailed Description of the Tool/Practice & Results

Facilitated Information Gathering, Dialogue and Production of Studies / Reports

Agencies and support groups (IAEA, NEI and others) are actively engaged in assisting industry players to find ways of addressing workforce issues. Through hosting and facilitating workshops, technical meetings, taskforce activities and team assignments many best practices have been identified, documented and made available to industry organizations. Examples of activities:

- 2006 IAEA Publication Technical Document on "KM for Nuclear Industry Operating Organizations".
- International Conference, France, 2004 – Managing Nuclear Knowledge: Strategies and Human Resource Development.
- IAEA, INIS and NUCLEUS – all provide industry organizations with access to their respective library, search capabilities and links to helpful websites
- IAEA Technical Report "Risk Management of Knowledge Loss in Nuclear Industry Organizations, published in 2006. Addressed:
  - KM terminology for the sector
  - Strategic approach to managing workforce issues
  - Knowledge loss risk assessment processes and tools
    - Employee self assessment
    - Institutional knowledge loss
    - The three Step process - TVA
- EPRI Report – "Real Time Expert Knowledge Acquisition and Transfer: Needs and Technology Assessment", Nov, 2004.
  - Identified types of knowledge to be elicited from each expert
  - Selected approaches to knowledge elicitation – interaction with experts; self elicitation and capture

    - Selected approaches capture – automated capture, Communities of Practice
- TVA Report – New Employee Experience.
    - Developed a process to orient new employee to TVA and their specific business unit
    - Process included the introductions to TVA culture model
    - Initiatives based on benchmarking best-in-class companies
    - Used a private consulting firm to facilitate the process
    - Modified and recommended best practices to best fit TVA culture as well as feedback from new employees.

Benchmarking Studies

NEI and INPO undertook two major benchmarking initiatives. Results of the studies were shared at a Benchmarking Meeting "Practical Approaches to retaining Critical Knowledge", held in Atlanta, Georgia, Nov 2005 and April 2006.

- Recruiting and building pipelines – Exelon. Exelon is a provider of energy services with an electrical and natural gas distribution. It is the largest nuclear operator in the USA.

  Developed new pilot programs to recruit operations and engineering pipeline employees to address the loss of experienced employees. Results:
  - Increased education requirements for new hires
  - Upgraded recruitment screening process
  - Established 2 and 4 year partnerships with universities
  - Utilized alumni to build relationships
  - Established 'bench strength budgets' to cover the cost of recruitment initiatives
  - Embarked on nation-wide recruitment
  - Pilot program was expanded into other disciplines
  - Undertook knowledge elicitation using concept maps

- Human Capital Planning – Palo Verde Nuclear Power Plant

  An integrated workforce planning process based on in-depth work force analysis that resulted in an employee migration analysis. The study considered a variety of work force gains, such as new hires, movement or promotion and development programs; and work force loss factors, such as retirement, movement, non retirement attrition.

  In the past staffing projections were based on individual department initiatives. Different assumptions were used throughout the enterprise and employee migration impacts were not fully considered, making it difficult to integrate the many findings into a coherence plan.

  Results:
  - Integrated site-wide approach to work force planning
  - Workforce planning built around talents and not departments
  - Consistent assumptions for workforce losses and needs
  - Calculated six workforces dynamic for 3 different types of work group losses and 3 different types of workforce gains.
    - Future work group losses – attrition; retirements and employee movement within the firm
    - Future work group gains – new hires, development programs, employee movement

- Best practices also discussed from Areva (design and construction of nuclear plants, world energy expert) – College of Experts; and Southern California Edison that had introduced phased retirement.

Assist Visits

International organizations such as IAEA and others have conducted and arranged "assist visits" to industry companies. These on-site visits provide valuable expert resources to nuclear power plants, including access to best practices.

- Krsko Assist Visit – April 2005 (WANO and IAEA)
- School of Nuclear KM – Trieste, Italy (IAEA and ICTP)
- Expert Mission on KM – Paks Nuclear Power Plant (IAEA)

Resources

Websites of all the participating organizations – studies, reports and tools available

.

TENNESSEE VALLEY AUTHORITY (TVA)

Dealing with Workforce Issues: The New Employee Experience Program

Overview

TVA undertook the following:

- Developed a process to orient new employee to TVA and their specific business unit
- Process included the introductions to TVA culture model
- Initiatives based on benchmarking best-in-class companies
- Used a private consulting firm to facilitate the process
- Modified and recommended best practices to best fit TVA culture as well as feedback from new employees.

Detailed Description of the Approach

The goals of the initiative were:

- Centralize and standardize the hiring process
- Achieve standard hiring days
- Process external hires using a staffing organization
- Automate information gathered on forms.

The objectives included:

- Improving services for new employees and managers related to pre-employment, screening, hire-in and orientation
- Reduce costs
- Reduce overall HR time spent on administrative and transactional work in order to enable more time on higher value activities

New Programs / Initiatives Implemented

- Standardized / improved requisition, interview, job offer and hiring process for externally recruited hires.
    - Standard hiring days (pay day Mondays)
    - Standard hiring locations (four cities)
- HR responsibilities for recruitment centralized in a Shared Resources organization: - scheduling interviews; making job offers; in processing of new hires.
- Pre –employment activities, specifically streamlined security and medical screening.
    - Employment suitability security check completed prior to setting candidate report date
    - Medical exam completed prior to setting candidate report date.
- Employees arrive at the job more informed, trained and prepared to be productive team members.
- Comprehensive orientation experience offered at three levels:
    - TVA-Wide Orientation includes: business and operations; competitive business approach; vision, values, goals and history; strategic directions; corporate culture (STAR 7); critical resource information – self service, IS help desk; principles, policies and practices
    - Business Unit Operation Orientation includes: business unit information; workplace prepared for the new hire's arrival; review of pertinent facts about the job; answer questions and establish

expectations,

- Strategic Business Unit Orientation includes: organization structure; strategic business unit goals and critical success factors.

- On-line and downloadable Manager's Toolkit to assist in effective business unit orientation
- Orientation partners assigned prior to hire date to help new employees with early need-to-know information.

Results

The results of the initiative were very positive:

- Hiring, orientation and their "Star & experience" resulted in annual cost savings of $300,000
- Centralized and standardized hiring process yielded significant efficiency gains
- New process ensures that new employees have passed security clearance and medical exams prior to hire and they understand the key policies and practices.
- Productivity ratios increased due to higher and sustained levels of employee engagement.
- New employees are fully equipped to be productive first day on the job
- Manager receives a "ready to work/train" employees kit.
- Processes aligned with best-in-class through benchmark analysis, helping TVA become an "employer of choice'.

Resources

IAEA studies.

WIND POWER INDUSTRY

Creating and Disseminating Knowledge for Wind Power

Overview

The Center for Wind Power houses global expertise in wind power development and is located in India. In order to cater to the demands of this fast growing sector, the Centre aims to develop skilled personnel and a knowledge-based environment in power generation from wind.

The Center aims to be recognized as the KM Hub and think tank for the Indian wind power sector; and to act as a nodal centre for developing industry-institution linkages and developing a network for disseminating information and other knowledge-based resources to the wind power sector.

Detailed Description of the Tool/Practice

The core activities of the Center include:

- Conducting short term and long term comprehensive training programmes in wind power management for wind industry professionals, academics, students and policy makers.
- Carry out research studies, surveys and analytical projects for the wind power sector.
- Offer exclusive consultancy services to project developers, industries, research institutes, investors, power utilities, etc. on technical, financial, administrative and management issues of wind power development.
- Provide support to regulatory commissions for the promotion of wind power.
- Strive towards efficiency improvement in wind power generation.

Resources

www.wisein.org

MEXICO PUBLIC-PRIVATE RENEWABLE ENERGY PROGRAM (WIND POWER) – INTERNATIONAL DEVELOPMENT BANK (IDB)

Global Focus on KM

Overview

'The importance of knowledge management is being recognized in the electrical sector domestically, but also in the US' international work. For example, most technical Inter-American Development Bank (IDB) projects now require a knowledge management and knowledge transfer component before they receive funding. The IDB Mexico Public-Private Sector Renewable Energy Program (*Amal-Lee Amin, Carla Tully*) allocates substantial funds to knowledge creation activities at the numerous project sites ($5 million USD). The Program concerns eleven wind projects; specifically the creation of a competitive supply-chain and services industry in the wind energy sector for the production of electricity.

Detailed Description of the Tool/Practice

The knowledge activities are set up as collaborative endeavours with regulators, research institutes, local communities, NGOs, financiers and the energy companies involved in the program. In order for knowledge to spread beyond the immediate locale in which it is generated, the program requires a robust knowledge management component for capturing and disseminating it within Mexico, through the IDB and the broader global climate change community.

The knowledge generated by this Program is captured in four categories: regulatory, technical, environmental and social. The first two of the planned eleven wind projects have already generated critical knowledge in the four categories listed and will inform the development of the KM system. The project in Oaxaca will offer a cast study in knowledge management and dissemination in:

- Technical aspects of specific renewable technologies (e.g. wind turbines)
- Environment impacts, such as those affecting bird migratory patterns
- Market knowledge regarding wind energy, financing mechanisms, roles of public and private developers and investors
- Regulatory frameworks
- Roles of indigenous communities regarding property rights, leasing and land access issues
- Identification of areas needing further study.

The Program incorporates critical capacity building and knowledge creation and management for the public and private stakeholders. Targeted technical cooperation's will build capacity and knowledge within CRE (the regulator), SENER (energy secretariat), NAFIN (financial institution) and SEMARNAT (environmental body). The KM function will disseminate the information and lessons learned to benefit regulators, research institutes, financiers, developers and the public at large.

Resources

IDB Proposal / Work Assignment: Mexico Public-Private Sector Renewable Energy Program - Amal-Lee Amin, Carla Tully

COAL MINING

Cultivating Knowledge Through Narrative – mine Emergency Response

Overview

US coal mining organizations are losing the knowledge they need to respond to emergencies. Those who have the knowledge of how things really work are leaving – through downsizing, turnover or retirement. The KM approach used to deal with this issue is through narrative for cultivating and sharing knowledge across group members.

An underground coal mine is a high risk operation where a common form of learning such as trial and error is not feasible. Errors can produce disastrous consequences. In such high risk organizations new hires need to be indoctrinated with protocols, post analyses of past incidents and informal interactions with individuals who have knowledge gained in other experiences that can be transferred and applied to current situations. The authors contend that it is through informal contacts that there is the most value because they take the individual past rote learning of fact based information to the realm of 'lessons learned' from active inquiry into an organization's knowledge base'.

US law requires that every mine operation must ensure the capability of the emergency mine rescue and recovery. Mine closings and the associated reduction in the numbers of miners have reduced the numbers of trained mine rescue members and the same process has also reduced the pool of potential emergency managers. As early as 1992, Pennsylvania noted that they could meet the regulations but could do so with no reserve capacity. There is also a concern that there are not enough adequately trained and equipped teams and people capable of directing their activities to meet emergency needs.

Given the shrinking and aging mine rescue and response force in the US and the industry's employment pattern, there was a need to prepare for a changeover of personnel in the very near future. Government recommended that the industry embark on a strategy of teaching mineworkers how to better react to non routine situations and an increase focus on preparing people to manage rescue operations. The researchers analyzed a program in the early 1990s to enhance the expertise within a specialized community of practitioners while at the same time preparing for a new generation of incumbents.

A KM/KT Workgroup established in 2002 developed a KM solution regarding the development of a more systematic way of finding, understanding and using knowledge. Data was defined as 'discrete facts' and information as 'contextualized data'. The US mining organizations are losing knowledge, the knowledge that is shared knowing that is distributed across group members. This knowledge can be cultivated and narrative was the medium through which this was done.

Detailed Description of the Tool/Practice

Approach: Researchers met with 30 mine rescue veterans and asked them to tell stories to capture what was happening at specific moments in particular incidents with which they had been involved. The miners were guided through four major topic areas by the interviewers, who audio-taped their comments. Interviews lasted between 60 to 90 minutes. Each topic area consisted of questions designed to elicit thoughts about the following:

- When and how they became involved in emergency response work
- The types of decisions that are made during an emergency response
- Details about specific aspects of emergency responses, such as how long the individual stayed on-site

- What they would tell future responders to help them be better prepared.

The audio tapes were transcribed and stored as computer text files and were analyzed for insights. This step raises another knowledge management issue, namely just as those being interviewed were engaged in deriving meaning, so too were the researchers who had to get meaning from this vast amount of "culture tales". Researchers derive meaning through finding information that resonates with other people that can be constructed retrospectively but can also be used prospectively. The effort involves plausibility, coherence and reasonableness, even if the story must be filtered to make it acceptable and credible. The goal of the miners' research was to present soft knowledge that would lead to insight, but not relate to everything each person said about a particular topic. The soft knowledge is filtered and is therefore not comprehensive, but if the filtering is effective then the information is more understandable.

A point stressed repeatedly by the interviewees was that mine rescue personnel and those who manage emergencies should be given ample opportunity to practice decision making in realistic scenarios.

Results

- Information Circular "An Oral History Analysis of Mine Emergency Response" (Vaught et al, 2004). This publication used stories in text to transfer some of the collective wisdom of the 30 veteran responders to a new generation of mineworkers.
- Development of MERITS (Mine Emergency Interactive Training Simulation), a web-based mine emergency simulation, with enhanced feedback capabilities, that could be used in a mine office or other on-site location with computer and internet access. MERITS is rooted in narrative – the basic scenario developed from the collective stories of the veterans. The simulation develops over time. Trainees are involved in everyday functions of a mine, then an accident occurs and the manager's role must either initiate decision alternatives or do nothing. The decisions, of necessity, will be like those that individuals or groups have used – or failed to use – in actual situations. Some will be good alternatives, and others may not be effective or even harmful. While trainees are working on the simulation problem they also receive feedback about the impact of the chosen alternative has upon the situation. Thus the exercise teaches by reinforcing good decisions, concepts and strategy and providing a basis for remediating incorrect responses. Shared knowledge grows through the process since those working on the simulation add their own stories of correct actions taken and opportunities missed. The MERITS session was held in 2000 and was conducted by an experienced mine emergency and mine rescue instructor. The participants were all managers from small underground mines.
- The researchers found that the use of narrative to create shared knowledge and associated training tools significantly helped to train mining rescue personnel and managers of emergency response in a shortened time period. This was a key goal of the initiative since the industry was faced with a shortfall of qualified and experienced personnel in this specialized field. The approach taken to mine rescues can be adapted to many other situations within the sector.

Lessons Learned

The KM approach used, synthesized environmental, technical, organizational and personal perspectives. It posited human judgment as the critical component of the decision making process, recognizing that while computers are useful in structured situations, it is ingenuity that prevails in unstructured conditions. The concept is best captured by the following quote (*Vaught quoting Bock*): "The management of knowledge in decision making is a process ... knowledge is created. This happens in the heads of people. Knowledge is shared. When knowledge is shared and used, the folks who use it modify it. This takes us back to knowledge creation." (*p188*) People are creators of knowledge and they are collectively one of its main repositories. To strengthen these 'repositories', organizations

need to facilitate learning and put job aids and tools in the hands of people on the job.
Resources
Vaught, C., Mallet, L., Brinich, Jr., M. J., Reinke, D., Kowalski-Trakofler, K. M., and Cole, H.P. (2006) "Knowledge Management and transfer for mine emergency response", International Journal of Emergency Management, Vol 3, Nos. 2/3 pp178-191.

BELGIAN NUCLEAR RESEARCH CENTRE

Practical KM Approach in a Scientific Environment

Overview

Knowledge development and management is the mandate of the Belgian Nuclear Research Centre, and knowledge is the key asset of the organization. Nuclear knowledge includes vast amounts of scientific research reports, engineering analysis and models, technical data, codes, maintenance records, and more, combined with a complex community of professionals (engineers, scientists, chemists, technicians of many disciplines).

KM is viewed as crucial in the nuclear sector in order to encourage innovation, to preserve the results of nuclear research and the benefits of nuclear applications related to electricity supply, human health, food and agriculture, silicon chips and other industrial applications for future generations.

Detailed Description of the Tool/Practice

The primary drivers for building the KM program are:

- ⇒ Preservation of knowledge and institutional memory. The Belgian Government is phasing out nuclear power plants; privatization and deregulation rules have been implemented which will result in increased competition for the nuclear industry in the "green energy" sector. This will lead to:
  - Downsizing in the industry, particularly in R&D.
  - Fewer young people studying nuclear science and nuclear engineering.
- ⇒ The experienced nuclear workforce is retiring with no corresponding influx of qualified younger people to replace them.

The Centre decided to set up a KM Programme. The following steps were taken:

- ⇒ Developing a KM definition
  - Used a knowledge value chain definition which consists of cyclic phases: determining the necessary knowledge; making an inventory of available knowledge; developing knowledge; deploying knowledge and evaluating knowledge. The definition used "KM is the way in which data, information, knowledge are managed with people, technology and processes in one portfolio".
- ⇒ Selecting and aligning a KM strategy with the organization's objectives.
  - As an R&D organization it needed to define the kind of value it intended to provide, and to whom. This step identifies the knowledge that needs to be captured and distributed in order to guarantee the survival and growth of the centre.
  - Capture and sharing of critical knowledge & expertise.
  - Access to common resources to facilitate integration of information, of sharing; turning Centre knowledge into added value for their stakeholders.
  - Created inventory of Centre's core competencies and key capabilities (know-how). {Areas include: health related services covering radiation protection, medical applications; safety analysis, site remediation; computational modeling and simulation, etc.}
  - Link KM Strategy with IT – but IT is the enabler and not the driver – enables knowledge search and retrieval. Centre leveraged open technology standards to ensure interoperability of systems. Documents are being converted to XML standards.

⇒ Choosing a "middle-up-down" approach to address the knowledge related needs and issues. This approach requires top management to create the vision; middle management develops concrete concepts that front line employees can understand and implement.
- Middle management played the "bridge' role between broad vision and realities of knowledge workers.
- Identified a Knowledge Network to be first involved in a KM project – to find the adopters and champions. Chose a project that people wanted / needed. First project is on geological disposal of radioactive waste.
- Analyzed existing process that captures internal and external knowledge – then organized and shared it throughout the centre.
- Have transcribed some parts of tacit knowledge
- Implemented a number of Cops based on shared domain knowledge, engagement in joint activities and sharing of collected resources. Also set up interactive communities through web-based portals.
- KM Programme began with improving their information management in terms of structure, standardization and cataloguing of available information so that better retrieval and access of existing documents and data .could be achieved
- Developed and implemented on-line and e-learning.
- First pilot project – Waste Disposal Community Portal. This pilot approach will then be used to develop other knowledge portals. For the pilot, the Centre has implemented the building blocks inside an Internet standards based portal.
  - Tools for recording, cataloguing, and indexing readily available information from reports and other publications of the R&D program.
  - Integrating various databases which have developed over time.
  - Established a permanent review and annotation system on all the data and reports gathered
  - Established community driven entities including internal meeting places for discussion groups; share document collections on topic oriented projects and task groups.
  - A review system called "knowledge tracks" where the tacit knowledge of experts and scientists is recorded on specific topic.
  - The use of standards for optimizing the re-use, searching and annotation of all the information required for a given task.

Results

Lessons Learned

- Do not install a portal first and then look for KM issues to resolve.
- Define a clear KM strategy, objectives and approach upfront.
- Determine to strategic IT issues.
- Identify informal knowledge networks and knowledge champions willing to play the role of early adopters for KM.
- Realize the complexities involved in implementation, maintenance and acceptance of a portal by knowledge workers (acceptance by employees cannot be overstated).
- The willingness of employees to share and contribute what they know and to leverage explicit and implicit content is one of the greatest pitfalls for a successful KM implementation. Integrating portals into the

organization's business processes by finding the right incentives and creating a knowledge culture is the most difficult part of KM implementation.
Resources
Refer to article: Knowledge Management at the Belgian Nuclear Research Centre: State of the Art of a Practical KM Approach in a Scientific Environment, by Marie-Laure Ruyssen. mruysen@sckcen.be

ASIAN DEVELOPMENT BANK (ADB)

KM Centre – Agent for Change

Overview

The Asian Development Bank reviewed its implementation of its KM Framework in 2009, assessing the results and current strengths and making improvements.

Detailed Description of the Tool/Practice

Operating Framework for Knowledge Management & Learning at ADB

Intended Impact 2009–2020	The capacity of ADB and its DMCs to reduce poverty is enhanced.
Targeted Outputs2009–2011	▪ Increased amount of more relevant and high-quality knowledge transferred to Divisional Centres and other stakeholders of ADB ▪ Improved knowledge management and learning in ADB environment
KM Interfaces	▪ Enterprise wide ▪ Regions ▪ Divisions ▪ International KM community
KM Framework	▪ Organizational context ▪ Organizational knowledge ▪ Inter-and intra-organizational relationships ▪ External environment
Outputs (annual)	▪ Improved organizational culture for knowledge management and learning ▪ Improved management system for knowledge management and learning ▪ Improved business processes and information technology solutions for lesson learning ▪ Improved communities of practice and external partnerships for knowledge management and learning ▪ Improved learning and development
KM Tools	▪ Strategy development ▪ Management techniques ▪ Collaboration mechanisms ▪ Knowledge sharing and learning ▪ Knowledge capture and storage
KM Activities (regular)	▪ Identify knowledge ▪ Create knowledge ▪ Store knowledge ▪ Share knowledge ▪ Use knowledge
Learning Organization Model	▪ People

	▪ Knowledge ▪ Technology
Inputs	▪ ADB ▪ Division Centers ▪ Audiences ▪ Beneficiaries ▪ Partners ▪ Others

Findings of the KM Review in ADB

Although the main thrusts of Knowledge Management in ADB remained valid, adjustments were needed to strengthen the knowledge management work to date. Improvements required included:

- ⇒ Greater emphasis to be placed on improving ADB's ability to deliver more adequate and focused knowledge support to divisional management centres.
- ⇒ A renewed effort in knowledge management was needed vis-à-vis the coordination mechanisms that drive internal and external knowledge partnerships.
- ⇒ An adjusted knowledge management framework was needed in order to be more practical, take a more incremental approach, be more forward-looking and focussed to ADB's *Strategy 2020*.
- ⇒ The need to create awareness in the ADB that knowledge management is not the sole responsibility of a department or unit, but is an ADB-wide responsibility and all departments have important roles to play and accountability for ensuring successful implementation and use.
- ⇒ A need to sharpen the knowledge focus of ADB's operations.

Results

A. The review noted the following challenges to integrating KM into business processes. The key challenges were:
   - ⇒ ADB's operations were still not fully benefiting from knowledge work conducted internally.
   - ⇒ ADB operations were not proactively enriching their programs through gaining and using knowledge from external sources.
   - ⇒ Knowledge work being conducted was not always effectively supporting the objectives of ADB's operations

   Proposed Actions:

   1. At the regional level, the Strategic Forum will coordinate the medium-term research and sector work among the knowledge and operations departments.
   2. At the country level, the country partnership strategies (CPSs) will explicitly reflect knowledge management as part of CPS formulation and implementation.
   3. At the project level, project teams will be encouraged to answer the following questions:
      - ⇒ Is a project relevant and responsive to the specific problem being considered?
      - ⇒ Does the design of interventions reflect the knowledge, lessons, and insights of similar situations?
      - ⇒ What innovative features characterize the project design and implementation?
      - ⇒ How can the project or program be designed to support rigorous impact evaluation, and to encourage learning and knowledge sharing?

B. The review noted the following challenges to empowering ADB's Communities of Practice (CoPs). The key challenges were:
   - ⇒ Limited outreach to all staff members, including those in region offices and region management.
   - ⇒ Due to their limited budget, some CoPs were not yet be able to full deliver and realize their potential.

⇒ The mandates and work of the CoPs needed to be better synchronized with the priorities of *Strategy 2020*

Proposed Actions:

1. Ensure that CoPs and informal networks become an integral part of ADB's business processes
2. Increase the budget of CoPs to an appropriate level based on clear sets of objectives.
3. Require CoPs to engage in external partnerships wherever possible through the regional knowledge hubs.
4. Review the role of knowledge management coordinators in ADB

C. The review noted the following challenges concerning strengthening external knowledge partnerships to promote learning and innovation for the benefits of Division Management Centers (DMCs) through "knowledge hubs". The key challenges identified were:

⇒ Poor performance vis-à-vis work plans
⇒ Absence of a monitoring system
⇒ Objectives defined in the Technical Assignment papers seemed overly ambitious
⇒ Purpose and selection of knowledge hubs need clarity

Proposed Actions:

1. Develop criteria for the selection of knowledge hubs including non-regional institutions
2. Ensure expected outputs and outcomes are aligned to ADB and DMC priorities
3. Make sure that the agreements with knowledge hubs spell out the need to conduct proactive dissemination activities in ADB and DMCs
4. Ensure that knowledge partnerships are considered when ADB enters into agreements, such as letters of intent and memorandums of understanding with other institutions

D. The review noted the need for further enhancing staff learning and skills development. The key challenges identified were:

⇒ Low awareness of the concept of 'the learning organization'
⇒ Insufficient understanding of knowledge management

Proposed Actions:

1. Design and implement a focused and needs-based knowledge management and learning training program for all staff members, including those in the regional centres. This program would be jointly developed by the KM Center and business management operations.
2. Introduce the concept of a "sabbatical" in the current "Special Leave Without Pay" arrangement to encourage staff members to seize learning and knowledge sharing opportunities
3. Invite a selected number of Senior and Junior Researchers to ADB for short-term assignments in forward-looking research aligned to the priorities of *Strategy 2020*
4. Increase the budget for external training for administration
5. Capture the knowledge and experience of departing staff and retiring members through exit debriefings and participation in the induction program

Resources

ADB's Knowledge Management Center: a Partner and Agent for Change, 2009

BEST PRACTICES IN KNOWLEDGE TRANSFER

Organization Learning

Overview

A health related organization has established a Knowledge Exchange and Communications Division to implement its KT learning strategy. The strategy involves not only internal professional, but also the end users of the research (the health practitioners), as well as research institutions (universities) and other partners and stakeholders. Knowledge exchange was understood to encompass the following:

- ⇒ Global, national and local research (evidence)
- ⇒ Expert opinion – values, experiences and judgment
- ⇒ Contextual factors – local resources, priorities, political considerations, time pressures.

The organization places a high priority on knowledge exchange in order to maximize investments in research.

Detailed Description of the Tool/Practice

Knowledge exchange is: "…*collaborative problem-solving between researchers and decision makers that happens through linkage and exchange. Effective knowledge exchange involves interaction between decision makers and researchers and results in mutual learning through the process of planning, producing, disseminating and applying existing or new research*". Specifically, the Agency uses research evidence to influence attitudes and knowledge of people to change their behaviour, their practice or their position / policies. It aims to "*get the right information to the right people in the right format at the right time*".

The guiding principles are:

- ⇒ Evidence is driven by the needs of users
- ⇒ Global knowledge vs. a single study
- ⇒ Evidence must be of high quality and a trusted source
- ⇒ Clear information channels built through partnerships.
- ⇒ Usable format that is accessible in a timely manner
- ⇒ Interpretation based on context
- ⇒ Evidence must be valued – therefore incentives and a culture that is supportive of evidence must be encouraged
- ⇒ Mechanisms to influence new research when gaps are identified
- ⇒ Flexibility
- ⇒ Training to understand and appreciate systematic reviews
- ⇒ Dedicated time

The roles for knowledge exchange are:

- ⇒ Evidence producing
  - o Promote dialogue among users and researchers to identify respective priorities and influence each other's work
  - o Engage in knowledge exchange research with partners

- ⇒ Evidence Using
  - Enhance staff's knowledge exchange thinking through training (KT intelligence)
  - Facilitate accessing / promoting systematic reviews on priority topics
  - Access evidence when establishing organizational priorities or policies.
- ⇒ Evidence Promoting
  - Synthesize evidence as cases for support for external policy decisions
  - Provide a 'rapid response' function for public health practitioners – the 'go to' source for best practices in public health
  - Produce policy briefs and guidelines
  - Test and promote knowledge transfer tools

    Initial planning steps included:
    - How best to reach the intended audience
    - How best to evaluate effectiveness / modify the KT strategy

Learning activities are placed on the Agency's Internet site, are promoted within the broader health community and are open to the general public. In addition, all learning events are posted on the intranet site and all staff, regardless of position are invited to attend.

Examples of Where the Tool is Being Used

This initiative is implemented at an arm's-length government agency dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. As a hub organization, the Agency links public health practitioners, front-line health workers and researchers to the best scientific intelligence and knowledge from around the world.

The Agency provides expert scientific and technical support relating to infection prevention and control; surveillance and epidemiology; health promotion, chronic disease and injury prevention; environmental and occupational health; health emergency preparedness; and public health laboratory services to support health providers, the public health system and partner ministries in making informed decisions and taking informed action to improve the health and security of Ontarians.

Examples of KT Learning Activities

- ⇒ Partnering with the Institute of Circumpolar Health Research to present on advancing public health research in Canada's north.
- ⇒ Public health GIS projects across Ontario – this is a workshop series to share knowledge on topics such as: geospatial surveillance and communication of various diseases; real time reporting of hospital data; spatiotemporal simulations of influenza activities to improve local planning; use of 'ring maps" – a visualization technique for pandemic planning.

Resources

www.oahpp.ca

BEST PRACTICES IN KNOWLEDGE MANAGEMENT & KNOWLEDGE TRANSFER

Learning About Knowledge Management & Transfer – on-line certification program

Overview

KM Concepts provides a comprehensive and free e-learning certification program in knowledge management and transfer. The program is divided into modules that need not be taken sequentially, although they do build on each other. The program is interactive, providing exercises and case studies within each module that can be applied to the learner's workplace. The program covers all aspects of KM, including:

- Definitions
- Concept and understanding
- History
- Knowledge Processes
- KM Formulation, reformulation and validation
- Knowledge diffusion
- Adaptive systems: Procedural knowledge; Declarative knowledge; Effectors, detectors and tags
- Soft vs. hard KM technology
- Levels of knowledge and meta-levels
- KM as a business strategy
- KM Metrics

Resources

www.eknowledgecenter.com/free_elearning

BEST PRACTICES IN KM COLLABORATIVE SOLUTIONS / STRATEGIES

Enterprise Collaboration Solutions

Overview

An enterprise collaboration solution is a group productivity product vs. a personal productivity product and as such large scale adoption is critical to success. It can only benefit the group if used by the group.

Enterprise collaboration solutions include Web 2:0 technologies such as wikis, blogs and social networking that are deployed by businesses for their ability to improve decision cycle times and organizational effectiveness. However, results produced are only to the extent the solution is adopted by users. Adoption occurs when users decide for themselves that the solution provides them with a net benefit, when they want to use the product.

Detailed Description of the Tool/Practice

Approach to Implementation

The following six steps to ensure successful adoption of the solution are deemed a best practice.

1. Encourage a range of use cases. Select 3 to 5 lead use cases to initially implement this solution. A mix of company-wide and group-specific is recommended. Company wide use cases deliver a broad exposure within the company and group specific generate deep business value. Examples:
    a. Company-wide: intranet; company directory; new hire on-boarding; competitive intelligence
    b. Group specific: project teams; departments or business units; professional communities; social communities; customer or partner extranets.
2. Recruit energetic champions. Look for individuals to help drive adoption within the firm. Champions should connect to each other through their own dedicated social network or blog and through regularly scheduled conference calls. Common characteristics of champions include:
    a. Well networked within the company (professionally and/or socially)
    b. Personally enthusiastic and willing to take a stand
    c. Interested in the new uses of technology (though not necessarily tech-savvy)
    d. Well respected within their areas of influence (not necessarily senior rank).
3. Launch with hands-on activities for new users. Select the initial cases for ease of use with self evident benefits to users. Champions should introduce the solution in a hands-on way that encourages colleagues to get their 'feet wet' immediately. Examples that companies have used:
    a. If a social networking solution then get everyone in the firm to complete a personal profile
    b. Game incentive such as sponsoring a contest with token prizes for the first people who can find 20 specified pieces of information in the collaboration solution.
4. Focus on repeated activities. Route repeated activities through the solution – it is only when people use it in everyday work processes that the solution will be adopted. Examples:
    a. Post pre meeting materials and meeting minutes in the collaboration solution wiki (or other) pages (This in itself produces efficiencies making it easy for participants to obtain meeting materials and decisions made in previous meetings).
    b. Post standard documentation
    c. Create question and answer forums about products, customers, processes etc.

5. Complement existing systems of record. The more tightly the collaboration solution is integrated into the daily flow of work, the more value it delivers. Make sure that the solution integrates with other systems that the company uses for core business activities. For example: use links and RSS feeds to integrate with the company's intranet and other legacy internal systems.
6. Leverage the community. Use the solution for posting ideas, posing questions, best practice tips etc.

Resources

To test one of these products on the market: www.socialtect.com/prpducts/freetrial.php.

BEST PRACTICES IN KM APQC'S BENCHMARKING PROGRAM

Improve Business Processes

Overview

Knowledge taxonomies and open standards can improve benchmarking and speed knowledge transfer. Effective benchmarking requires a systematic process for examining internal processes, funding other organizations that perform such processes better and learning how they do it.

A knowledge taxonomy refers to the classification system used when identifying, creating and distributing knowledge. A common taxonomy makes the job of comparing practices within and, if possible, between companies a much simpler and more valuable exercise. The more detailed and widely recognized such a classification system is, then the more useful it will be. KM creates the systematic processes to share business practices with people across the organization.

Detailed Description of the Tool/Practice

Four Phase Model Cycle:

- ⇒ Planning: This phase sets the groundwork for identifying performance goals and best practices. The phase includes:
  - Defining the scope of the benchmarking exercise
  - Selecting an area of focus aligned to the business strategic priorities.
  - Identify the audience – this enables knowledge sharing and action (a key reason for undertaking benchmarking)
  - Engage the intended audience.
  - Identify performance indicators
- ⇒ Collect Data: Adopting standard business process definitions and metrics make it easier to find and reduce the cost of gathering reliable data and practice information.
  - APQC's process classification framework was launched in 1992 as a taxonomy of business processes for member organizations. Semi annual updates have kept the taxonomy up to date to reflect new enterprise a=categories and processes. Operating and management processes are organized into 12 enterprise level categories and over 1500 associated activities.
  - Enterprise and industry-specific process classifications form the foundation of the APQC's Open Standards Benchmarking Collaborative (OBSC). This is an complimentary benchmarking program operated by APQC that allows companies to compare their performance data against that reported by thousands of other operations. Therefore, instead of struggling to develop a taxonomy that will allow an apples-to-apples comparison, the OBSC database can be used immediately to start a gap analysis and identify best practices.
- ⇒ Analyzing performance gaps

⇒ Adapt and improve: The most successful organizations (according to O'Dell, APQC) are those that devote 50-% of their benchmarking time to the final stage, using the knowledge gathered to modify their business processes. This includes sharing best practices, creating improvement plans and executing the plans.

Thomas Steel Strip, Ohio used the APQC Benchmarking program to compare their manufacturing and order-management processes. Managers commented that, "*The OBSC research offered a way to get the benchmark data by setting up a communal sharing of information. You put your data in and you're authorized to get benchmark data out*".

Resources

APQC.

3. Case Studies

KINETRICS

PROFILE OF THE ORGANIZATION

Kinectrics Inc. delivers life cycle management solutions to help utilities and the energy industry optimize system performance and reduce costs. Kinectrics advanced technical capabilities cover a broad range of services including engineering, asset management, scientific evaluations, comprehensive testing , and product / tooling development for nuclear power, transmission and distribution, hydroelectric / fossil power generation, and environmental technologies.

The Kinectrics organization, headquartered in Toronto, Ontario, Canada was founded in 1912 as the R&D Division of Ontario Hydro. Spun off from Ontario Hydro in 1993 in subsequent successor forms as Ontario Hydro Technologies and Ontario Power Technologies, the company evolved as a highly-successful independent, commercial organization before being incorporated as Kinectrics Inc. in 2000.

The Kinectrics' team of more than 450 scientists, engineers and technologists is supported by accredited testing facilities and rigorous quality assurance programs, especially for the nuclear sector. The company's registered quality management system complies with ISO 9001 and is fully compatible with the needs of the regulated energy sector.

Now owned by Vision Capital in the UK and earning revenues in the $100 million annual range, Kinectrics continues to be recognized worldwide for outstanding technical excellence in transmission and distribution, nuclear power generation and environmental technologies.

SERVICES AND/OR GOODS PROVIDED

Kinectrics provides technical services with comprehensive capabilities for the energy industry, including specialized engineering and broad-based asset management services, scientific evaluations, advanced testing, innovative products and independent generation solutions. Kinectrics also offers safety and environmental services and helps companies in the energy sector to better manage the life of their assets. Kinectrics operates predominantly in the fields of:

- **Power Generation:** nuclear, fossil, and hydroelectricity generation
- **Transmission and Distribution:** Electrical services and testing on transmission and distribution systems
- **Environmental Technologies:** innovative science and engineering in the areas of air quality monitoring, and active / inactive analytical chemistry
- **Industrial energy services:** Kinectrics cost-effective, business-driven solutions effectively address clients' complex technical problems through the application of innovative science and engineering.

Critical to Kinectrics' ongoing international success is the company's long-established expertise and unique experience as a former utility in understanding how technology affects performance, the environment, safety and the bottom line for its clients operating in the energy sector.

Kinectrics' wide range of products for the power industry include the PowerKage non-electric fence to minimize outages caused by animal intrusion; SorbWeb™, a proven solution to contain oil spills from transformers and other industrial equipment; KINECTS© power line communication technology to send digital data; ARCPRO, a software tool to assess arc hazards, and establish protective clothing and equipment standards for the industry; and the EVER-CLEAR FILTER, a unique filtration system to help prevent shutdowns and equipment de-ratings.

ORGANIZATION STRUCTURE

Kinectrics' head office and operations are based in Toronto, Ontario, Canada. The company recently opened a branch office in Pickering, Ontario and a new facility in Cincinnati, Ohio, USA. Kinectrics owns 2 subsidiary companies, Axiom NDT Corporation and Candesco Corporation, both based in Ontario, Canada and active in the power generation industry.

HUMAN RESOURCES

Kinectrics has over 450 staff and associates including Axiom and Candesco personnel. Many staff members are recognized experts in their field and hold specialized certifications and/or degrees at the Ph.D. or similar advanced level.

The company has comprehensive state-of-the-art testing facilities and scientific equipment, including numerous specialized laboratories, where new concepts and approaches are constantly being developed and advanced.

KNOWLEDGE MANAGEMENT/TRANSFER APPROACH

BUSINESS DRIVERS FOR EMBARKING ON KM/KT

Kinectrics recognized that, as a business unit, the company had a significant competitive advantage within the marketplace – specifically, almost a century of accumulated knowledge, experience and R&D based on solving the most complex technical challenges of North American and global utilities.

Two business drivers led Kinectrics to focus on KM/KT, both internally and as a critical business line:

1. Changing demographics (the retirement rates expected both in the broader labour force, and within the energy sector – which was reinforced by a report published by the ESC), and the impending risk to the sector from the loss of knowledge and experience that would accompany this retirement. Many retirees studied Power Engineering at university and many of these programs no longer exist.

2. Internally – Kinectrics recognized it had knowledge and skills assets that could be formalized in a training format for clients and internal staff.

APPROACH TO INTRODUCING KM/KT

Kinectrics has an exceptional "knowledge database" accumulated over almost 100 years of experience in advanced innovation and research and development.

Kinectrics' management championed a Pilot Project to verify the business drivers and "training as a solution". The Pilot Project involved market research, development and delivery of test courses and writing a five-year business plan. The purpose of the Pilot Project was to assess whether a focused training program could facilitate the efficient sharing and transfer of "know-how" and "skills" to meet the future demands of power providers.

Market research focused on analysis of current training practices and interviews with Training Managers in key energy accounts. Kinectrics wanted to know if training was an effective way to transfer technical knowledge and expertise to clients—thereby assisting them in the support and replenishment of their own workforce. With the help of an instructional designer, two pilot courses were designed, developed and delivered by Kinectrics' experts. The evaluation results were positive. A business plan, incorporating a five-year strategy, was developed that concluded that training would be a viable initiative for Kinectrics' to help clients facing the challenges of how to both retain and transfer key personnel knowledge and skill. In 2007, Kinectrics set up a dedicated Training Department (TD) to develop specialized courses for clients and staff.

Kinectrics' Business Model is experts, with advanced labs and facilities and intimate knowledge of client work and environment. This model transferred well to training and the description applied to the training initiative was: "*Experts Teaching from Practical Experience."*

KM/KT POSITIONS

The newly established Training Department has a dedicated manager and is championed by senior management reporting through HR. The Training Manager is an expert in instructional design, training administration and business development.

In addition to course design, development and delivery, the Training Department is responsible for business development and administration.

The biggest advantage was Kinectrics' scientific, engineering and technical professionals were already experts in their field, and had good communication and documentation skills. However, they needed to be trained in the course development methodology and course delivery. Experts are trained in the course development methodology, the Systematic Approach to Training (SAT) and in course facilitation skills for adult learners.

KNOWLEDGE TRANSFER INITIATIVES – FOCUS ON HR

KT PRODUCTS/SERVICES

The priorities for the Training Manager are to:

- Design, develop and deliver courses to achieve a target revenue
- Implement the methods and process for Instructional Design using the Systematic Approach to Training (SAT)
- Establish the training infrastructure to manage opportunities, marketing and administration.

Course topics were selected based on industry needs for work in emerging technologies, new builds, refurbishments and ongoing maintenance. The target audience profile was defined for learners from engineering and technical functions requiring the depth of specialized knowledge and skills for which Kinectrics is recognized worldwide.

The Kinectrics approach is to transfer knowledge and skills based on real work that course participants can apply on the job. This approach can accelerate experience for:

- younger people at the beginning of their careers
- people who have foreign education and/or experience
- people transitioning into the energy sectors from other sectors e.g. automotive, aerospace
- people who need to refresh/upgrade

In addition to classroom courses, Kinectrics is delivering webinars and blogs.

Kinectrics courses have been certified by the Engineering Institute for Professional Development hours for Continuing Education certification for participants who need hours to maintain professional designations.

Kinectrics does comply with SAT (Systematic Approach to Training). SAT is an internationally-recognized systematic approach used when training electricity generation personnel, particularly in the nuclear area. SAT is organized into distinct phases referred to as ADDIE: Analysis, Design, Development, Implementation, and finally, Evaluation which relies on a series of feedback evaluations as a process for continuous performance improvement. Kinectrics' instructors follow the SAT instructional design for adult, performance-based learning.

Course development is compressed as the Subject Matter Experts (SME) develops the course material with design input (e.g. in-class exercises, materials, methods) from an Instructional Designer. The components of a completed training course include:

- Job Task Analysis
- Course Outline
- Learning Objectives (Terminal and Enabling)
- Lesson Plan
- Instructor Guide
- Student/Participant Workbook
- Course Materials (Powerpoints, in-class workshops, handouts, hands-on samples, demonstrations, tours, reference lists of books and/or resources etc.)
- Feedback and Evaluations

- Quizzes and Answer Guides

Once the course is developed, the SME teaches the course and all SMEs are trained in course facilitation skills.

In traditional course development, content is transferred from a SME to an instructional designer who designs and develops the course. By having the SME develop the course with design help, the development time is compressed and this has allowed Kinectrics to respond rapidly to client needs for qualification courses needed by a deadline to certify staff for specific job roles.

OUTCOMES /LESSONS-LEARNED

The development of relevant and practical training courses requires the input of Subject Matter Experts. Development of training material is an activity that can be completed between projects or when SMEs have available time that is not assigned to clients.

Clients are challenged by increasing levels of attrition and the ability to backfill staff and/or to allow time off to participate in training. Although training may form part of an annual Performance Review or Professional Development Plan, there is often no time for training. This perpetuates the performance issues. For example, for a major utility client, Kinectrics is developing a 9 module course (over 12 weeks) that will become part of a new job function. This job function once existed, and is now being reinstated to ensure a stable and trained workforce. The removal of the job function in the past has created increased faults/reworks, lost time and increased use of contract resources and these will be the baseline benchmark to measure the effectiveness of the new 12 week training program.

People in this sector have a learning style that supports face-to-face, classroom learning. Participants like practical, experiential learning from Subject Matter Experts who have a work history that can be shared in stories and case studies. (e.g., Tell me how you did it. What could go wrong? What should I do if…?) Kinectrics has chosen the tag line “Experts Teaching From Practical Experience.”

SUMMARY

OVERVIEW OF HOW KM AND KT HAVE BENEFITED THE COMPANY

Key success factors in the design of Kinectrics courses are:

- Capture of critical knowledge and skills that can be shared
- Use of the Systematic Approach to Training (SAT) methodology to Analyze, Design, Development, Implement (Deliver) and Evaluate training performance
- Combining and relating practical experience to illustrate theoretical standards and guidelines and appreciation of client needs/challenges
- Incorporation of experiential learning elements such as tours of Kinectrics' advanced facilities and labs, demonstrations, and hands-on practice, in class workshops that meet the learning style and needs of the technical, engineering and scientific audience

Benefits of the Training Business Plan for Kinectrics include:

- Revenue from training - Value of the training format to capture "Intellectual Assets" that can be capitalized
- Formal establishment of a Training Department with management support
- Approved plan to monitor and document energy sector training needs
- Training as a value added service for clients

Knowledge Management and Knowledge Transfer benefits to Kinectrics include:

- Promotion of Kinectrics as a unique environment to work and learn from industry- recognized talent
- Reinforcement of the importance of training opportunities to candidates during recruitment and for staff
- Training as a desirable role for retirees to maintain workforce involvement and for ongoing engagement on-the-job
- Mentoring of new/transitioning staff who audit and then co-teach courses with Subject Matter Experts/retirees
- New skills in course development and delivery that can be transferred to other professional tasks

As a result of Kinectrics investment in KM/KT, the depth of Kinectrics staff expertise can be promoted and recognized.

The formal establishment of the Training Department has further defined Kinectrics as a work environment in which ongoing learning is embraced and knowledge sharing is encouraged. A formalized approach to training also forms part of an intrinsic "learning culture" within the organization.

Establishment of the Training Department allowed Kinectrics to accommodate both project and staff growth, and also had many secondary advantages. For example, Kinectrics experts were able to identify areas in which training could lead to operational improvements for clients. Training could be incorporated as value-added task in proposals and work plans, enhancing the positive outcome of project work.

In addition, many Kinectrics SMEs discovered a personal aptitude for training as an activity that could also be scheduled between billable projects. As part of the Kinectrics coaching program, the course content became a valuable internal training and reference asset, centrally available to all to learn "who knows what".

SUMMARY OF THE CHALLENGES EXPERIENCED

- Design, development and delivery of training by Subject Matter Experts require ongoing scheduling to ensure there are no conflicts with committed projects.
- Subject Matter Experts need training in the Systematic Approach to Training (SAT) methodology and in adult facilitation course skills to engage learners.
- Clients have reduced time for training and therefore training must be targeted and concise and driven by an agreed set of learning objectives.

  The learning style for technical and engineering people, who are new to the energy sector and lack the experience and knowledge is to "learn from experts" who can incorporate as many experiential components e.g. labs, tours, mock-ups, case studies, workshops, demonstrations, hands-on etc. that will help with on-the-job performance.

SUMMARY OF THE KEY LESSONS LEARNED

- Training must be designed, developed and delivered according to the SAT methodology
- Subject Matter Experts need training in the SAT methodology and skills for course facilitation
- The energy sector needs to accelerate the knowledge and experience of new staff to replace retiring staff and implement Knowledge Management and Knowledge Transfer programs and initiatives
- Availability of time for training is limited due to workload and therefore training must be compressed and specific

SUMMARY OF THE OPPORTUNTIES CREATED THROUGH THE USE OF KM AND/OR KT

- The training format is beneficial for knowledge capture, management and transfer.
- Training is an effective way to share scientific and engineering, emerging and best practise information
- Training provides skills that can be applied to many work tasks and gives recognition and visibility to Subject Matter Experts for their work
- Training is a source of revenue and identification of new opportunities

SUMMARY OF THE OVERALL ROI AND/OR RESULTS

- Engineering Institute Professional Development hours for Continuing Education certification for participants who attend Kinectrics courses
- Participants in Kinectrics courses learn from experts who share their practical experience
- The Training function operates as a business unit with revenue targets
- Participation in training by staff that audit, then co-teach and teach courses is an effective way to accelerate

FUTURE PLANS

Future plans include:

- Expanding the market for training in the USA and globally and with key partners, clients, standards organizations, associations and working groups etc.
- Specialized training projects e.g. developing and delivering a curriculum of courses; developing training simulations; converting and blending content to new formats such as eLearning, webinars, blogs; collaboration with education institutions; ongoing certification of courses
- Continue developing new topics based on industry needs and demands
- Integrating training as a key activity in client projects

NORTH EASTERN UTILITIES (NEU)

PROFILE OF THE ORGANIZATION

The Northeast Utilities (NEU) system was the first new multi-state public utility holding company system created since the enactment of the U.S. Public Utility Holding Company Act of 1935. NEU was formed on July 1, 1966, when three companies - The Connecticut Light and Power Company, Western Massachusetts Electric Company (WMECO), and The Hartford Electric Light Company - affiliated under the common ownership of NEU, the system's parent company. In 1967, Holyoke Water Power Company (HWP) joined the affiliation and in 1992, Public Service Company of New Hampshire (PSNH), became a new member.

NEU operates New England's largest utility system serving more than two million electric and natural gas customers in Connecticut, western Massachusetts and New Hampshire. NEU is a Fortune 500 diversified energy company, with its headquarters located in Connecticut and operations throughout the Northeast, USA. NEU's vision is: Energy, Growth, and Leadership.

SERVICES AND/OR GOODS PROVIDED

NEU provides a full range of energy products and services to millions of residential and business customers. Upon its creation, NEU had nearly one (1) million customers (846,000 – electric and 145,000 – gas).

- Industry leader in transmission construction, energy efficiency, emergency response, and many other categories.
- Won both national and international acclaim. Award-winning conservation and load management efficiency program, and in 2008 the Platts Global Energy Award for excellence in execution of transmission construction.

HUMAN RESOURCES

NEU has over 6,000 employees - all types of electricians, linemen, and construction. The company offers extensive in-house training in a number of general and specialized technical and engineering areas and follow a systematic approach to training. For instance they provide training on any new equipment; legacy systems that will be in effect for at least another half decade; critical skill and knowledge needs.

- Have 13 work centres in Connecticut
- Train about 3,500 employees annually
- NEU supports their engineers in obtaining specialization certificates or degrees and Masters in Electrical Engineering. It is taught through Worcester Polytechnic at the NEU training site.
  - ⇒ Make very good use of their own resources in terms of internal experts providing the training (engineers, field personnel, linemen etc) and bringing back retirees to develop and conduct specialized technical training.
- Partners with other utility companies for training purposes – since all are competing for the same labour source
- Partners with many tertiary education institutions and organizations, particularly: Bismarck College in North Dakota; Connecticut Community colleges; Electrical Providers Coalition for

Education (EPCE), Coalition for Adult and Experiential Learning (CAEL), University of Connecticut, Center for Energy Workforce Development

- Provides an in-house apprenticeship program(s) and are currently modifying some of the modules.
- All apprentices and new graduate employees are provided 5 weeks of training annually for the first four years in the company. New recruits are also paired up in the field with an experienced employee.
- NEU has its own Information Technology Learning Centre and can provide simulated learning experiences.

KNOWLEDGE MANAGEMENT / TRANSFER APPROACH

BUSINESS DRIVERS FOR EMBARKING ON KM/KT

HR Drivers – high retirement rates and the need to transfer knowledge before people leave.

Some technical jobs are difficult to recruit, primarily because of the specialized knowledge and new technical requirements that continue to expand. Utility companies are all competing for the same relatively small labour pool.

APPROACH TO INTRODUCING KM/KT

- Undertook an examination of the best way to introduce the knowledge transfer concept to the business units as part of a five-year business plan (2008-2012). This plan focused on corporate talent and leadership development and the key supporting and enabling role of knowledge transfer. The plan includes knowledge transfer workshops, provides start-up support for two communities of practice and some technology infrastructure. The plan was accepted, funded and built into the company's human resources strategy.
- Under the banner of workforce planning, Human Resources/Training built and presented a business case for knowledge transfer and piloted knowledge capture in some key operational positions. NEU is committed to capturing and transferring knowledge as critical to maintaining its electricity and gas networks.
- The focus is on knowledge capture and transfer. Training and Human Resources Departments work closely together.
  - ⇒ Human Resources undertake workforce planning and demographic analyses. Project retirements and analyze the positions and skills that are leaving the company. Project skill and position needs and recruitment needs.
  - ⇒ Demographic profile information is shared with Training. Training analyzes the types of positions and skills that are projected to retire; assesses whether the position and/or incumbent possesses critical skills, competencies and knowledge and whether this needs to be captured. Also assesses the numbers retiring in each position or skill set and whether training is needed (e.g. if losing all resources that currently maintain a high risk legacy system). Training liaises on a regular basis with management and staff across the company and in the fields to learn training and development needs and potential critical skills loss and specialty needs.

Knowledge Management / Transfer Initiatives include the following:

- Captured critical situational knowledge from engineers, and identified a storage area for this knowledge within Lotus Notes (a commonly used IBM software platform). An automatic annual review for accuracy and applicability is being implemented.
- Transferred knowledge to two gas project engineers on four situation-based examples and 25 explicit tasks involving critical knowledge and decision-making. As a result NEU developed a master list of knowledge requirements to perform gas project engineering work.
- Transferred knowledge to one electrical maintenance supervisor on 10 critical knowledge aspects across three areas: substation, circuits, and work center knowledge. Captured and stored the 10 aspects in a database with automatic annual review for accuracy and applicability.
- Developed a generic process for knowledge capture and transfer applications which can be utilized to duplicate the effort for other critical positions.
- Identified critical positions where knowledge loss could affect the organization. Initiated roll-out (2007-2009) of performance talent management training, which will have a knowledge transfer component.
- Breathed new life into the mentoring concept by formalizing a knowledge transfer process for two positions.

KM/KT POSITIONS

KT is integrated into NEU operations.

KM PRODUCTS/SERVICES

NEU has many searchable databases (e.g. all types of electrical standards; procedures and methodologies).

KNOWLEDGE MANAGEMENT PRODUCTS / SERVICES – FOCUS ON HR

KT PRODUCTS/SERVICES

HR Related Practices – Training

- Developed a Five Year Training Plan through analysis of human resources workforce demographics; the company's legacy systems and available training budget and company priorities.
- Criteria for development of any new course requires that sufficient numbers of employees require the skills/knowledge to run classes for at least a four year period. (If less than that then specialized workshops / seminars are developed rather than a training program)
- Use a lot retirees as trainers
- Have many external contracts with learning institutes and national training organizations.
- Developing training programs on smart grids with CAEL and EPSE training in Chicago. Eight utility companies across different states have formed an Advisory Committee in conjunction with EPSE to develop curricula for the utility companies. NEU's Director of Training is a participant on this Committee. This means NEU helps to design the EPSE courses and knows what to expect from EPSE graduates in terms of their knowledge, training and skill base when recruiting for new personnel.
- Provides training in partnership with tertiary educational institutions leading to Master Degrees in Electrical Engineering. These are on-line courses.
- Graduated Retirement Programs / Use of Retirees
  - ⇒ Retirees / persons close to or intending to retire can opt to work part time
  - ⇒ Provide graduated retirement programs
  - ⇒ Retirees hired back as technical writers, as trainers and as mentors.
  - ⇒ Use a lot of retirees as trainers
  - ⇒ Mentoring Program (bring back retirees as mentors).
- Mapping Exercises for Knowledge Capture – Internal Process
  - ⇒ Training works with the Operations / field area to map processes and document the process.

Approach:

- Identify persons leaving who occupy a critical position and/or have unique knowledge. Employees in the field identify the critical skills and critical knowledge requirements and pass this information to Training – for either knowledge capture and/or development of training workshops / courses and/or new modules to apprenticeship programs.
- Training hires a technical writer to work with the individual(s) to shadow their work for several weeks or months; to develop a detailed process map of the work requirements; to validate the process map with the individual(s); to interview and discuss all aspects of the job and the context of the job requirements.
- Training developed a simple template form: "Knowledge Transfer Process" to capture a unique knowledge or skill that is important to the company. Trainers use this form. The form addresses:
  - ⇒ What skill / knowledge it covers
  - ⇒ Why it is unique / critical

- ⇒ What are the risks associated with having or not having this skill / knowledge available
- ⇒ Assign a priority to capturing the knowledge based on the answers to the questions on the form
- ⇒ Target who needs to receive this knowledge / skill and by what method / media (work method document; training workshop; written procedures; incorporated into the company's apprenticeship program(s), etc. "*Find the right solution for the type of knowledge that needs to be transferred*."

- Writer develops the appropriate documentation to capture the knowledge – could be a technical manual; process charts; training module. Training and operations and the individual(s) decide on the best communication method and type of media for knowledge transfer of the knowledge that has been captured.
  - ⇒ EXAMPLE: Individual who is responsible for databases on engineering standards and no one but this one worker knows how to maintain the database system. Training arranged for a technical writer to work with the individual to develop a process map and accompanying documentation.
  - ⇒ EXAMPLE: Just completed a knowledge capture exercise of two overhead Linemen. Technical writer was hired and observed the linemen; interviewed them – what they did and how they did it; transferred this knowledge into a procedure manual that included capturing the nuances of the job (e.g. clues to knowing something is wrong such as a type of noise etc).
  - ⇒ EXAMPLE: Knowledge capture exercise on certain types of bridges that are restrictive to certain vehicle sizes. Only a few of these still exist, but they need to be maintained and with the older workforce leaving this is important to ensure that the company has captured the tasks involved and trained new workers in the processes and competencies required.
  - ⇒ EXAMPLE: Have just hired back two retirees for 6 months to work with Training Department and undertake the technical writing; job shadowing; interviewing and training for staff in an electrical engineering specialty. The retirees develop the documentation and also conduct the training.
  - ⇒ EXAMPLE: Have a legacy system dealing with 'lead splicing'. Only have a few lead and paper splicing left – about six. But these still need to be serviced and maintained. NEU brings back a retiree once a year to train several employees on lead and paper splicing and will continue to do this until all such splices are out of commission.
  - ⇒ EXAMPLE: Training developed a business case for the development of "switch training'. The switch training positions were analyzed by human resources and training through a gap analysis and needs assessment on a job class. It was determined that such skills would be required for another decade and that the switching network is a high-risk activity since failures can lead to major outages and fires. To provide such training a model of each type of switch network has been set up in NEU's main training facility and employees are annually taught how to maintain these switches.

SUMMARY

A key success factor in executing KM and KT at NEU is that NEU has integrated KM/KT into its operations. KM and KT are not viewed as the purview of the IT or the HR departments, but are incorporated into the "way business is done" throughout the organization. NEU developed a KT business strategy and uses its operational processes to promote the KT agenda. For example, the

2008-12 five year business plan focused on corporate talent and leadership development and the key supporting and enabling role of knowledge transfer, and under the banner of workforce planning, Human Resources/Training built and presented a business case for knowledge transfer and subsequently piloted knowledge capture in several key operational positions.

There are several critical success factors that can be learned from NEU. These include:

- Senior management is very supportive, however the departments do their homework first and present a fully costed business case.
- NEU identified critical positions where knowledge loss could affect the organization.
- A simple template form was developed for capturing a unique knowledge or skill that is important to the company. This form is used widely by training staff.
- NEU recognizes that knowledge capture is a skill and they hire technical writers to work with the individual(s) to shadow their work for several weeks or months; to develop a detailed process map of the work requirements; to validate the process map with the individual(s); to interview and discuss all aspects of the job and the context of the job requirements.
- NEU leverages the skills and knowledge of projected retirees and persons retired. NEU has Graduated Retirement Programs; hires back retirees as technical writers, trainers and mentors.
- KT is a collaborative exercise:
  - Workforce demographics are analyzed and Human Resources / training works collaboratively with management and staff across the company to address workforce issues.
  - NEU partners with post secondary institutions to develop and deliver training programs.
  - NEU partners with their competitors: eight utility companies across different states have formed an Advisory Committee to develop curricula for the utility companies.

THE INTERNATIONAL ENERGY AGENCY

PROFILE OF THE ORGANIZATION

The International Energy Agency is an autonomous agency established in 1974 and based in Paris. The main IEA decision-making body is the Governing Board, composed of energy ministers from each member country or their senior representatives.

The IEA is the energy forum for 28 advanced economies. IEA member governments are committed to taking joint measures to meet oil supply emergencies. They also have agreed to share energy information, to co-ordinate their energy policies and to co-operate in the development of rational energy programs that ensure energy security, encourage economic growth and protect the environment. These provisions are embodied in the Agreement on an International Energy Programme, the treaty pursuant to which the Agency was established in 1974.

A Secretariat, with a staff of energy experts recruited on a competitive basis primarily from OECD member countries, supports the work of the Governing Board and subordinate bodies. The IEA Secretariat is headed by an Executive Director appointed by the Governing Board. The Secretariat collects and analyzes energy data, organizes high-level workshops with world experts on new topics and themes, assesses member and non-member countries' domestic energy policies and programs, makes global energy projections based on differing scenarios, and prepares studies and concrete policy recommendations for government

FOUNDING OBJECTIVES

- To maintain and improve systems for coping with oil supply disruptions.
- To promote rational energy policies in a global context through co-operative relations with non-member countries, industry and international organizations.
- To operate a permanent information system on the international oil market.
- To improve the world's energy supply and demand structure by developing alternative energy sources and increasing the efficiency of energy use.
- To promote international collaboration on energy technology.
- To assist in the integration of environmental and energy policies.

The IEA is strongly committed to helping countries meet both energy and environmental goals. In 2005, IEA were mandated by the G8 to provide recommendations to achieve "a clean, clever and competitive energy future". Since that time, the IEA has been working on crucial energy and climate issues with the G8, the G20, the Major Economies Forum on Energy and Climate (MEF), as well as continuing existing collaboration with other organizations such as the UNFCCC Secretariat and the Intergovernmental Panel on Climate Change (IPCC). IEA feels that further support for the development and deployment of new technologies is essential.

The IEA is ideally placed to continue its role as an international forum for sharing information and ideas on the rational management of world energy resources. Benefiting from sources in government and industry, its extensive statistical work and expanding databases provide information that contributes to openness and confidence in the energy markets. IEA analyses of the energy policies

of member and non-member countries and its recommendations to governments contribute to more effective policies and greater co-operation in the energy field.

SERVICES AND/OR GOODS PROVIDED

Core Businesses

- As energy markets have changed, so has the IEA. Its mandate has broadened to incorporate the "Three E's" of balanced energy policy making: energy security, economic development and environmental protection.
- Current work focuses on climate change policies, market reform, energy technology collaboration and outreach to the rest of the world, especially major consumers and producers of energy like China, India, Russia and the OPEC countries.

The IEA has the following core business lines in terms of research reports produced and sharing of information:

- Emergency Response Mechanisms - set up under the 1974 Agreement on an International Energy Programme (I.E.P.), which has been signed by all member countries. IEA coordinates actions during emergency situations regarding energy supplies.
- Oil Markets - analyses and monitors short- and medium-term developments on the international oil market to help member governments anticipate and respond promptly and effectively to changes in market conditions. IEA prepares current oil market assessments from information submitted member governments, international oil companies and others. Issues covered include: oil exploration and production developments; supply, demand, price and refining trends; OECD stocks; and international trade in crude and products. The IEA makes much of this benchmark analysis available to governments, industry and the public in its Oil Market Reports
- Gas Markets - publishes an annual Natural Gas Market Review which examines developments and projects trends in international gas markets.
- Energy Statistics – The IEA is the world's leading source of energy statistics, assembling annual, quarterly and monthly reports on oil, gas, coal, electricity and renewables, as well as on overall energy supply, consumption, prices and taxes. Teams of experts visit member countries regularly to make on-the- spot reviews of energy developments. Others prepare projections and assessments, or report on research into new technologies.
- Promotes international cooperation to further improve the quality, timeliness and coverage of country, regional and global energy statistics. The Joint Oil Data Initiative, launched by six international organizations and now housed at the International Energy Forum Secretariat in Riyadh, constitutes a concrete example of such co-operation.
- Global Energy Dialogue - hosts periodic multilateral technical-level meetings of experts from energy producing and consuming countries to promote understanding and communication, organizes seminar/ workshops on specific topics such as emergency response policies, energy efficiency and regulatory issues with non-member countries, and is developing a more formal training and capacity building programs.
- Energy & the Environment - analyzes and interprets the technology and policy options that may be implemented to mitigate climate change. Work is underway on climate-friendly technologies, with research on topics as diverse as renewable energy, energy efficiency and new carbon-capture and storage technologies. New intellectual ground has been broken with work on "energy indicators".

- Energy Efficiency - promotes energy efficiency policy and technology in buildings, appliances, transport and industry. IEA analyses identified best practices, highlighting the possibilities for energy efficiency improvements and policy approaches.
- Energy technology Innovation - initiatives include a series of roadmaps, which develop the growth path for a particular technology from today to 2050 and identify milestones for development, financing, policy and public engagement that need to be achieved to realize the technology's full potential. The IEA Technology Collaboration Programme deals with technologies for fossil fuels, renewable energy, efficient energy end-use and fusion power, as well as electric power technologies and Energy Technology Perspectives 2008 technology assessment methodologies.
- Energy Technology Network - made up of 41 Implementing Agreements on key areas of energy technology. More than 5 000 experts from IEA member and non-member countries, and from industry, participate. The Agreements offer a flexible framework for the international co-ordination of basic science, research and development, and demonstration and deployment of energy technologies. Benefits include pooled resources and shared costs, harmonization of standards, and hedging of technical risks. More recent IEA technology initiatives include organizing an international technology platform to help accelerate the spread of low-carbon technologies globally.
- Policy Analysis and Cooperation - IEA member countries co-operate to increase their collective energy security through diversification of their energy sources and improved energy efficiency, while ensuring economic competitiveness and protecting the environment. Every four years the policies of individual member countries are reviewed in-depth by their peers. In intervening years, brief standard reviews update the main energy policy developments and report on progress in implementing the recommendations of the in-depth reviews.

ORGANIZATION STRUCTURE

The International Energy Agency (IEA) is an intergovernmental organization which acts as energy policy advisor to 28 member countries to ensure reliable, affordable and clean energy for their citizens.

- The participant countries include: Canada, EU, France, Germany, Portugal, Spain, Sweden, Switzerland, and USA.
- Provides an international, North American and Canadian perspective.

HUMAN RESOURCES

The IEA employs approximately 190 staff - primarily energy experts and statisticians from its 28 member countries. Many initiatives are undertaken by university professors from the member countries. Professors submit a research idea or initiative to the IEA and if accepted the IEA will sponsor the initiative in terms of distributing the material or research produced, providing profile to the research on their website and in some cases providing the internet portal. IEA does not fund such research; the professors need to find the funding from their government, and/or their university and/or university research institutes or other institutes. In some cases the professors and government representatives do not receive any funding for the research, but volunteer their own time in order to pursue their academic interest in the subject area.

KNOWLEDGE MANAGEMENT/TRANSFER APPROACH

BUSINESS DRIVERS FOR EMBARKING ON KM/KT

- Reduce the cost of planning and deploying solar energy systems, improve efficiency of solar energy systems through more accurate and complete solar resource information, and increase the value of the solar energy produced by solar systems.
  - ⇒ Improve data reliability and quality of the data
  - ⇒ Data standardization and benchmarking of international solar resource data sets to ensure worldwide inter-comparability
  - ⇒ Improve accessibility of information to members
- IEA has been active in KM initiatives
- In 2004 the solar industry, under the IEA, established a Solar Resource KM Taskforce
- The Solar Heating and Cooling (SHC) Implementing Agreement Programme was established in 1977, one of the first collaborative R&D programmes of the IEA. The Programme's work is unique in that it is accomplished through the international collaborative effort of experts from Member countries and the European Commission.
  - ⇒ The benefits of this approach are: accelerates the pace of technology development, promotes standardization, enhances national R&D programmes, permits national specialization, and saves time and money.
- The SHC Programme's participants have been conducting joint projects on advance active solar, passive solar, daylighting and the application of these technologies in buildings and other areas, such as agriculture and industry.

Business Drivers for Task 36 KM/KT Solar Energy Initiative

- Knowledge of solar energy resources is critical when designing, building and operating successful solar water heating systems, concentrating solar power systems, and photovoltaic systems. The ability to forecast solar resources reliably for up to 72 hours ahead is one important way to assist solar system operators how to best manage the output of their systems, especially in those cases where these systems are connected to the utility grid. One way to develop these forecasts is to adapt existing forecasting methods to address specific solar resource forecast estimates. However, little information is currently available on how well these solar resource forecasts actually compare with what actually occurred in specific locations.
- Task 36 is focusing on the development of products that will reduce risks in project implementation, increase access to key data products, and provide guidance on the reliability of various solar data sets.

APPROACH TO INTRODUCING KM/KT

Each IEA project, unless a core business service, is unique and the approach used is dependent upon the researchers undertaking the studies and/or the organizations partnering with IEA to produce the studies or undertake the initiatives.

KM/KT POSITIONS

Depending on the type of study or initiative, different subject matter experts are involved. In the case of Task 36 the work is being undertaken by university professors and one member of the taskforce has the responsibility for development and maintenance of the internet-based portal that disseminates the research and answers questions from industry companies, academics and the public. For Task 36, the professor is a specialist in solar energy but has taken on the coordination and portal role and the coordinator role is being funded for four months annually by his university and the Government of France. Only the coordinator role is funded, the research work is volunteer based on pursuing academic interests and for teaching purposes at the university where he works.

More Information

- http://www.iea-shc.org/task36/index.html - this web site is the official web site of IEA/SHC Task 36 "Solar Resource Knowledge Management" - a five-year task initiated by IEA SHC Programme Implementing Agreement.
- http://www.iea-shc.org/task36/index.html - this web site is the official web site of IEA/SHC **Task 36 "Solar Resource Knowledge Management**" - a five-year task initiated by IEA SHC Programme Implementing Agreement.

KNOWLEDGE MANAGEMENT PRODUCTS / SERVICES

KM PRODUCTS/SERVICES

Product 1: Task36 "Solar Resource Knowledge Management & Knowledge Transfer"

Task 36 is a five-year collaborative project with IEA's SolarPACES and Photovoltaic Power Systems that will be completed by June 2010.

The KM project lead is located in the US and has a Canadian member.

The participants in *Task 36: Solar Resource Knowledge Management* represent research institutions and private consultancies from around the world, and are engaged in producing information products on solar energy resources. The work is intended to assist policymakers; project developers and industry companies in advancing renewable energy programs worldwide.

Drivers

- Requests from industry
- Research interests of several academics – primarily from Germany and Switzerland. Task 36 was created by researchers who knew each other or were familiar with the research of task group members (rather like a virtual community of practice).

In 2004 the solar industry, under the IEA, established a Solar Resource KM Taskforce to discuss the sector's needs and to develop a work-plan to address those needs. The participant countries included: Canada, EU, France, Germany, Portugal, Spain, Sweden, Switzerland, USA. The industry realized that it needed new tools which were not available in the marketplace, that international R&D collaboration was needed to speed up the development of the sector, a need to make more effective use of synergies within the renewables sector, a need to develop solar resource tools and databases and to be able to offer a wider range of products to more customers. Specific needs identified:

- More site and time specific information
- Improved accuracy through commonly acknowledged validation and standardized products

- Customized easy to access products shaped towards user needs
- Global geographic information
- Improved service availability and reliability
- Improved spatial and temporal coverage and higher accuracy

Project Resourcing

- Formed a task group and submitted to IEA for its consideration
- IEA agreed to sponsor the portal and the researchers were left to fund their own funding. Approximately 66% of researchers were not funded for this initiative.
- Government of France funded four months annually for a coordinator role (the role of the individual responsible for the portal)
- IEA has copyright of the reports produced under this Taskforce for IEA, but does not have copyright of the research produced.

Goal

The goal of IEA/SHC Task36 "Solar Resource Knowledge Management" is to provide the solar energy industry, the electricity sector, governments, and renewable energy organizations and institutions with the most suitable and accurate information of the solar radiation resources at the Earth's surface in easily-accessible formats and understandable quality metrics. The scope of solar resource assessment information includes historic data sets and currently derived data products using satellite imagery and other means.

Objectives

The objectives of the work is to provide the solar energy industry, the electricity sector, and system operators, particularly those operating large-scale grid-tied PV systems, with information on how reliably solar radiation resources can be forecast at specific locations, ideally on an hourly basis, for up to 72 hours ahead. The scope of this particular task is to “benchmark” various solar resource forecasting schemes developed by research institutions and private companies with ground-based solar measurement data, and even with actual PV system output.

There are three (3) main objectives of Task 36:

- To provide further standardization and benchmarking of international solar resource data sets to ensure worldwide inter-comparability and acceptance;
- To provide improved data reliability, availability and accessibility in formats that address specific user needs; and
- To develop methods that improve the quality and the spatial and temporal coverage, with customized solar resource products, including reliable solar radiation forecasts.

Description of Task 36

Task 36 is both a KM and KT initiative. The KM component is the development of essentially a repository of studies, research and tools. Each participating university’s data is combined and made available through an IEA portal that provides the information in a standardized format using internet based tools.

The KT component is the dissemination of the research and the use of the tools by industry participants and any other interested parties. The KT component is the actual portal used by industry firms to access the results of the various TaskForce studies. The portal is standardized; information

is available only in English and contact information is provided. Portal users can email any technical questions and the KM/KT expert on the Taskforce answers the questions.

No registration or fee is required to access the portal and the portal is open to anyone (industry firms, public, academics, members and non members of IEA).

Background

TaskForce 36 developed out of a SoDa initiative to disseminate information to industry participants on solar energy. Information on SoDa os provided below:

SoDa Service answers the needs of industry and research for information on solar resource, solar energy and solar radiation data and its exploitation. Examples are renewable energy systems (photovoltaics, solar thermal for water heating, solar plants, solar heating and cooling), energy efficiency in building or solar energy system, architecture, daylighting in building, environment, meteorology, climatology, global change, health, air quality and pollution, ocean, water (reservoir, eutrophication), primary production, vegetation, agriculture, forestry, horticulture, material weathering.

SoDa is a multi-disciplinary consortium, which gathers companies and researchers with the necessary expertise in solar radiation and information and communications technologies. Customers and users are represented as partners in the consortium via the involvement of commercial private vendors of solar radiation databases and of representatives of large international or local environmental research and development programs. Its users are primarily industry firms.

The SoDa Service offers a one-stop access to a large set of information relating to solar radiation and its use. The services are organized in categories of services or domains (e.g., air quality, or solar energy systems). This service itself is not a warehouse. The innovation is that it is made of an *Intelligent System (SoDa IS)* that builds links to other services that are located in various countries. To answer a request, the SoDa service invokes several resources to elaborate the appropriate answer and ensures the flow and exchange of information between the services and itself, as well as with the customer/user. A service can be a database (e.g., solar radiation database or temperature database), or an algorithm that performs on data to create a new information, or an application that provides an information that can be directly used by professionals.

The SoDa Service comprises applications and a number of databases and data sets about long-term time-series of irradiance or irradiation, temperature, rainfall, longwave radiation, Linke turbidity factor, atmospheric turbidity, clear-skies properties, PAR (photosynthetically active radiation), spectral distribution and more. The SoDa Service contains several services and its content is evolving as additional resources (databases, algorithms, end-user applications) are populating the SoDa Service.

The SoDa Service can be launched by the item "Services" in the menu on top or "Access a Service" on the left menu in the SoDa website (www.soda-is.com). The domains are displayed on the main screen and the user selects the domain of interest in the list. When activated, a service displays a request interface that depends on each service. This interface displays a map and a form Details on inputs are given in the service information page. The map displayed shows the geographical coverage of the selected service. The geographical selection can be made in three ways:

- Click on the map.
- Enter latitude and longitude in decimal degrees. (Information is provided on how to convert

geographical coordinates in degrees and minutes into decimal degrees);
- Search by name- then enter name of the desired city.

The selection of the time period is usually done by selecting two dates or a month (Other cases are possible. Several formats of outputs are also possible, although HTML is the default format.

SoDa to Task 36
In 1999, funded by the European Union, SoDa made a prototype of a portal that could provide solar research, data and maps to industry users allowing for more uniform access. The project began with 4 users and within a short time had over 100 users, which encouraged the researchers to provide the SoDa services through a web-based portal. By 2008 SoDa had over 40,000 users worldwide, without any marketing to industry. Researchers realized there was a definite interest and need in the services being provided.

In 2008 SoDa conducted a survey to ascertain who was using the services. The response rate was low, 170 responses, however of those responses over 66% were industry company users and the other third were from academics researching within the industry sector. SoDa also kept track of the questions submitted through the website and generally received several emails a day and primarily from industry companies.

Several problems were identified with SoDa (which is essentially a KT tool for the dissemination of industry information, data, knowledge and simulations). The key problem is the ability of firms to transfer the software to their own IT infrastructure. This was very difficult to perform. Since SoDa was launched new web based tools are now available and it was decided to build a new version of SoDa that was more accessible to users; could be accessed in different formats; would use standardized formats and would include more knowledge, studies and datasets from universities across the world. This new launch of SoDa was the 'birth" of Task 36. The new portal through Task 36 is web based and so all users have access to the data and simulations and there are no concerns with IT functionality. Users can now run their own simulated models using the data regardless of their IT platforms.

Task 36 - Anticipated Outcomes
Achieving these objectives would reduce the cost of planning and deploying solar energy systems, improve efficiency of solar energy systems through more accurate and complete solar resource information, and increase the value of the solar energy produced by solar systems.

Task 36 - Specific KM needs identified:
The needs for this initiative were identified by university professors and representatives from the energy and from industry companies. The TaskForce members identified several industry companies in their member countries interested in the furthering solar energy research and dissemination of research results to industry participants as well as academics. Each TaskForce member was expected to interact with identified interested industry participants in their member countries.

Specific needs to be addressed included:
- More site and time specific information; improved accuracy through commonly acknowledged validation and standardized products;
- Customized easy to access products shaped towards user needs;
- Global geographic information;

- Improved service availability and reliability; improved spatial and temporal coverage and higher accuracy.

Task 36 Approach / Method

- Defining the products and services of the key industry stakeholders
- Bringing together the leading experts from all disciplines needed to best solve the questions
- Providing globally comparable products based on the most suitable data and best methods from around the world
- International cooperation is a "must"

The KM activities were grouped into three sub-tasks:

1. Standard qualification for solar resource products;
2. Development of a common structure for archiving, processing and accessing solar resource information;
3. Improved techniques for solar resource characterization and forecasting to enhance quality and develop new and more versatile products.

The KM activities identified for the 5 year work program (2005-2010) were independent from each other, were comprehensive and were charged with leading to tangible deliverables and products. Solar resource information is defined as "all data describing site and time specific physical parameters of solar radiation at the Earth's surface needed for the design and operation of solar energy systems". (*Presentation by R. Myer, Institute for Atmospheric Physics, EC Joint research Centre Symposium, Italy, Dec 2004 slide 26).* Relevant solar applications include: building and cooling (SHC); photovoltaic (PV) and concentrating solar power systems (CSP) for producing electricity and process heat. KM is being used to flow information to serve the evolving applications of these technologies, including their role in distributed energy networks.

The KM activities were grouped into three sub-tasks:

1. Standard qualification for solar resource products – setting standard for solar resource products, validation in accordance with worldwide comparability and acceptance. The subtasks involved:
    - Select and qualify measurement data set
    - Measures for model quality for product validation
    - Method for establishing benchmarking of products
    - Application of benchmarking procedures
2. Development of a common structure for archiving, processing and accessing solar resource information (e.g. through a single portal). The subtasks involved:
    - Identifying commonly used software by end users
    - Developing data exchange protocols
    - Developing a network of resource providers
    - Evaluating legal aspects
    - Automatic access by commercial applications
3. Improved techniques for solar resource characterization and forecasting to enhance quality and develop new and more versatile products. The activities entailed the development of eight

solar industry products (radiation products, satellite models, micro siting) and analytical and forecasting tools.

RESULTS

2009 Highlights:

- 2008 highlights focused on a preliminary assessment of solar resource forecasting capabilities. This continues to be a major area of emphasis within the task, and therefore a major highlight of 2009 is the gaining of further understanding of a variety of solar resource forecasting methods. Solar resource forecasting is becoming of growing importance towards the cost-effective and successful operation of large-scale grid-tied solar energy systems, both PV and CSP. Utilities and system operators can use the forecasts to predict the approximate amount of energy they can rely upon over the next several hours to the next two to three days. If the operators know with sufficient certainty that the solar energy technologies operating within their system will be on or off, this information can be important to them for determining what other types of back-up systems they may need to plan for to meet forecasted loads.
- One study, published in 2009, was led by Task participants from Oldenburg University (Germany). Besides Oldenburg, the study team consisted of participants from Bluesky Wetter (Austria), Meteocontrol (Germany), Meteotest (Switzerland), CENER (Spain), CIEMAT (Spain), and the University of Jaén (Spain). The study team collected high quality ground solar measurement data from throughout Europe, covering the period 1995-2004, with which to compare their various forecasting schemes.
- The different research institutions have employed a variety of methods for developing the solar forecasts. Two institutions make use of the European Center for Mid Range Weather Forecast (ECMWF) products, and then refine the forecasts with mesoscale numerical models, such as the Weather Research and Forecasting Model. Other researchers use the Global Forecast System (GFS), as a starting point. Even other institutions use “learning methods” to develop their forecasts.
- The forecast benchmarking work has already provided some useful and important results. For one, all of the forecasting methods produce lower uncertainty than persistence. In general, those methods that begin with a global forecast, such as ECMWF or GFS, and then include some post processing such as a mesoscale model produce the best results. The results also indicate that the WRF performs the best of all the mesoscale models used in the study.
- Task participants held a Task Definition Workshop in March 2010 to develop a proposed annex for a new task with additional activities related to solar resource characterization and forecasting.
- A Best Practices Guide will be published by the Task to capture the key findings of the five-year program. During 2009 the Task participants will be considering additional activities that could result in a broader scope as well as a time extension of the Task. This guide is an interactive portal that permits users to launch and operate the services and tools made available through all the research. The guide is continually being up-dated by the universities and it provides the most up to date knowledge in the field.
  - ⇒ The guide provides information and not “just data”. It also provides an assessment of the quality of data available through the portal.

For more information go to: http://www.iea-shc.org/task36/publications/index.html

LESSONS LEARNED

- Task 36 has conducted several surveys to identify industry needs and to obtain feedback on the tools, model and data available through the portal. In their experience the response rate is very low if the survey is too long; their best response was to a very short (3 questions) and targeted survey.
- Standardization of language and of coding is very important in any KM initiative that is targeted to KT. Requires a common vocabulary among the many researchers first, and then disseminating this across the industry sector. One of the first tasks of Task 36 was to agree on a common methodology, common terminology and common coding. These tasks allow industry to use and improve their own information by being able to access and use the data and information provided through the Task 36 portal.
- The major challenge is that the Taskforce is primarily worked on by academic volunteers who undertake the research and coordinate because of their interest in the field. If members leave then there would be no monies to maintain the portal and the data available through the portal.

A complete listing of all IEA publications is available from:
IEA Communication and Information Office 9, rue de la Fédération
75739 Paris Cedex 15 – France Tel. (33-1) 40 57 65 54 Fax: (33-1) 40 57 65 59 www.iea.org/books
Report called Sectoral approaches in Electricity www.iea.org

KNOWLEDGE MANAGEMENT PRODUCTS / SERVICES

OVERVIEW OF KM AND KT BENEFITS

The target audience for the products and services emerging from work of the taskforce are the various users of solar energy applications and other stakeholders, all represented within the IEA. Target audience includes:

- Industry: construction, PV, CSP, and SMEs involved in planning and monitoring of solar systems.
- Solar heating and cooling
- Concentrating solar power
- Future solar markets – solar process heat and chemical products and water desalination and detoxification
- Finance and insurance sector – bilateral banks, donors, venture capital, fund managers and re-insurance companies.
- Electricity sector – network and retail utilities, rural authorities, independent power producers.
- Governments – national, regional, local and regulatory agencies
- NGOs and other promoters of solar energy
- Research organizations.

BENEFITS

The benefits of developing and making available solar resource information to industry players are many, including:

- Knowledge on solar energy potential on a regional, national and global scale
- Economic assessment of project feasibility for calculating solar energy yields – i.e. improved information on where systems become economically viable.
- Site specific optimization of solar systems
- Optimizing operations
- Distributed power generation management
- Market development scenarios
- Knowledge of solar resource and real weather data critical for the development of solar energy technologies
- Provide assistance for joint implementation projects that contribute to studies on energy and climate.
- Improved knowledge will help to increase the usage of solar energy in the future since use is still marginal.

LESSONS LEARNED TO DATE

2008 and 2009 Highlights have been reported *(Highlights Report SHC Task36 Solar Resource KM*). Task 36 is focusing on development of products that will reduce risks in project implementation,

increase access to key data products and provide guidance on the reliability of various solar data sets.

- Development and testing of a variety of solar resource forecasting methods. This is integral to the cost effective and successful operation of large scale grid-tied solar energy systems.
- Utilities and system operators can use the forecasts to predict the approximate amount of energy they can rely upon over the next several hours to the next 3 days.
- Initial studies have examined 60 hour ahead hourly forecasts from publicly available forecasting sources. The forecasts were compared against measurement at three high quality solar monitoring sites in the US.
- By 2010 a Best Practices Guide will be published by the Taskforce to capture the key findings of the five year program.

HYDRO QUEBEC (HQ)

PROFILE OF THE ORGANIZATION

Hydro-Québec is a government-owned public utility established in 1944 by the Government of Quebec. Based in Montreal, the company is in charge of the generation, transmission and distribution of electricity across Quebec. With sixty hydroelectric and one nuclear generating stations, Hydro-Québec is the largest electricity generator in Canada and one of the world's largest hydroelectric generating company. The combined capacity of its power stations was 36,810 megawatts and its distribution network served over 3.96 million customers in 2009.[2]

The development of several large-scale hydroelectric projects which took place non-stop from the late 1940s to the mid-1990s — the Bersimis, Carillon, Manic-Outardes, Churchill Falls and the two phases of the James Bay Project — allowed Quebec to reduce its reliance on fossil fuels. In 2006, primary electricity accounted for 40.4% of all energy used in the province. However, the construction and operation of these projects has led to conflicts with aboriginal populations living in Quebec's North.

SERVICES AND/OR GOODS PROVIDED

Hydro-Québec generates, transmits and distributes electricity, mainly using renewable energy sources, in particular hydroelectricity. It is one of the biggest electric utilities in North America. Its sole shareholder is the Québec government. Hydro-Quebec is known worldwide for its expertise, mainly in the areas of hydroelectric generation and high–voltage transmission

ORGANIZATION STRUCTURE

In 2000, the new regulatory framework governing the North American Power industry led HQ to adopt a new organizational structure with four divisions in order to adapt to current market conditions**:**

- Hydro-Québec Production: generates power for the Quebec market and sells its surpluses on wholesale markets. It is also active in arbitraging and purchase/resale transactions.
- Hydro-Québec TransÉnergie operates the most extensive transmission system in North America for the benefit of customers inside and outside Quebec.
- Hydro-Québec Distribution provides Quebecers with a reliable supply of electricity. To meet needs beyond the annual heritage pool which Hydro-Quebec Production is obligated to supply at a fixed price, it mainly uses a tendering process. It also encourages its customers to make efficient use of electricity.
- Hydro-Québec Équipement and Societe d'energie de la Baie James (SEBJ), a subsidiary of Hydro-Quebec, design, build and refurbish generation and transmission facilities, mainly for Hydro-Québec Production and Hydro-Quebec TransEnergie.

This structure promotes the concentration of leading-edge expertise in each of the divisions and gives each the flexibility to adjust to their particular business environments. Other components of the organization are the corporate groups: Technology (Hydro-Quebec's Research Institute, Telecommunication, IT), Finance, HR, Corporate Affairs and communication.

HUMAN RESOURCES

Hydro-Québec has approximately 23 000 employees broken down as follows:

- 30.1% female
- Rate of unionization: 85.2 %
- Average age: 45.4 years with 19.4 years of service
- Occupational groupings
    - 9. 4 % Management
    - 22.4 % Scientific/Specialist
    - 19.5 % Engineers and technicians
    - 21.9 % Clerical/Administrative
    - 26.8 % Trades

NEW BUSINESS DRIVERS AND MAJOR WORKFORCE RISKS

Hydro-Québec's primary mission is to ensure the long-term supply of electric power in Quebec. The focus is on continuing to develop its hydropower fleet and integrating a large volume of wind power into its transmission system. These renewables, combined with Hydro-Québec's ongoing efforts in energy efficiency, form the basis of energy security in Québec and the continuous development of Hydro-Québec's export markets and paving the way for a sustainable future through ground transportation electrification.

In the years 1998-2000, Hydro-Québec was focused on making changes in order to keep serving its customer well and continue growing in a fast, evolving industry. Hydro-Québec faced at the same time two major challenges that were rated (or considered) by the top management of the company as risks having the highest impact on business and a probability of occurrence higher than a low level of hydraulicity and the risk of climate change. These two risks were:

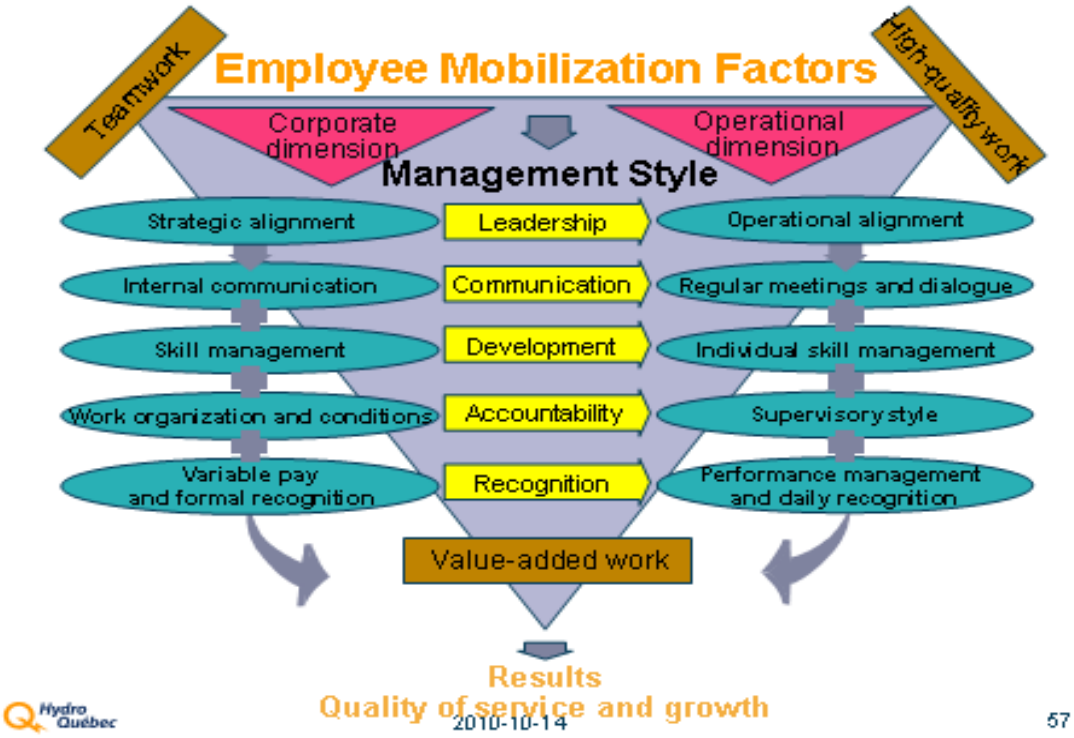
- To hire and train another generation of employees to remain competitive and build on the often unique expertise developed by its experts in a variety of critical sectors, and
- To improve the mobilization of the employees that was at that time at the lowest level since HQ started an employee survey in the 1990.

A CORPORATE APPROACH TO KNOWLEDGE TRANSFER

KNOWLEDGE MOBILIZATION, CULTURAL CHANGE AND MANPOWER RENEWAL

To address the key business drivers and risks noted earlier, Hydro-Quebec developed a mobilization model that clarified the management style and the values that were expected from the managers and the employees. This model is outlined below.

Figure 1: Mobilization Model

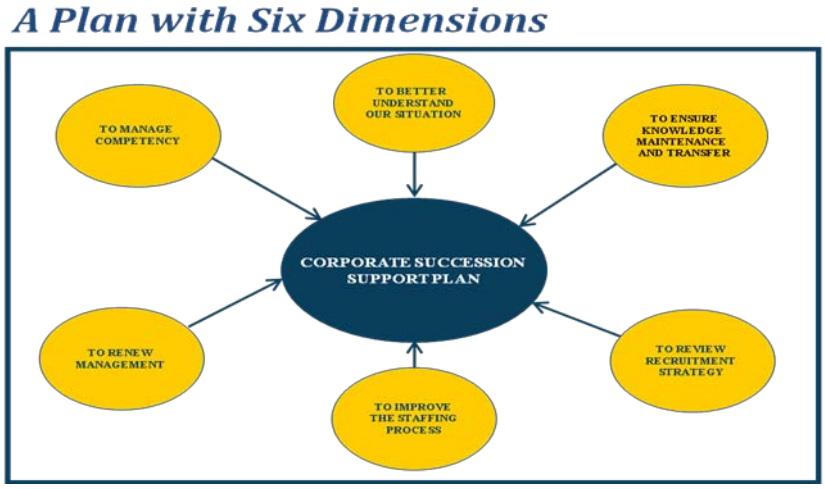


In 2002, the HR function developed a corporate succession and expertise renewal management plan to address the following issues:

1. Major risk that expertise will be lost in the medium (2006) and long (2012) term;
2. Recruitment difficulties in the medium (2006) and long (2012) term (also in the short term for outlying regions);
3. Collective agreements lack flexibility with respect to large-scale hiring/staffing and high skill requirements;
4. Weakness in competency management; and
5. Renewal of Hydro-Quebec's management team.

Figure 2 outlines the corporate Succession Support Plan.

Figure 2: Overview of Hydro-Quebec's Corporate Succession Support Plan



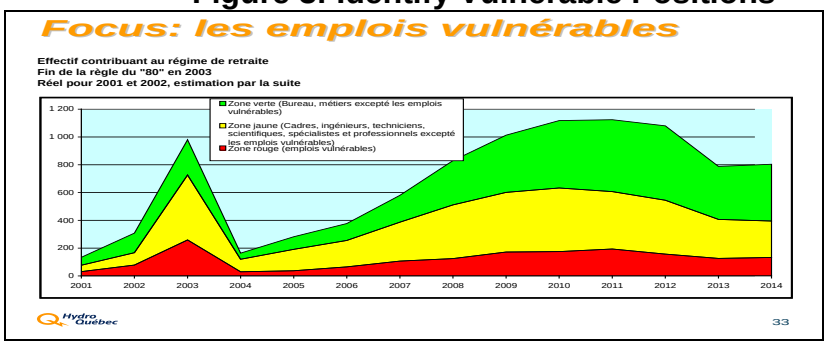
The first two years were spent developing creating or improving tools to support the improvement of HR processes involved and in developing the competency management toolkit.

SITUATIONAL ASSESSMENT

A critical first step was identifying the key business and workforce risk in relation to knowledge assets. This was done through workforce mapping and analysis to identify the jobs or positions that were most vulnerable considering 1) the projected retirement (projected dates calculated based on age and tenure data or on employees estimates/feedback when available); 2) a knowledge loss risk analysis based on the level of expertise and the rarity of the expertise of the job (position), the incumbent and availability both inside and outside the organization; 3) the estimate of the difficulty or level of effort to replace the job incumbent and to train and integrate him or the volume in hiring and or in training the new employees

As figure 3 shows, the situational assessment has given a better estimation of the proportion of vulnerable positions and of the effort to manage the replacement staffing. Hydro-Québec found that there were actually only a few job classifications that were contributing the most to the KT problem.

Figure 3: Identify Vulnerable Positions



KNOWLEDGE TRANSFER

After undertaking targeted knowledge mapping, Hydro-Québec found that there were actually only a few job classifications that were contributing the most to the problem and, in those cases, the knowledge was unique – developed within the company over many years; the loss of which would have a significant impact on the organization and its competitiveness. For the cases where the knowledge was at risk, a formal program was launched in 2002 to:

- Identify experts and the knowledge at risk (importance, rarity, difficulty of recovery);
- Finance advance staffing for strategic positions in order to facilitate the knowledge capture and transfer of the most at risk positions;
- Improve the capture and sharing of high value undocumented knowledge and improve overall knowledge sharing; and
- Improve or shorten the length of formal training and introduce/improve the informal learning strategies for those job categories where a large number of job incumbents were being replaced and the organization had to fast track learning and development times.

COMPETENCY MANAGEMENT

A key foundational piece developed and implemented was a competency management approach and related tools. The competency management framework was seen as the key component of the corporate succession plan in the organization's first years working in the area of KT.

To support the introduction of a competency based management approach Hydro- Québec developed agreements with the unions on the introduction of competency dimension in assessing employees for job transfers and promotion.

Hydro-Québec also focused on improving key HR processes including:

- Analysis of why employees were leaving;
- Shorten the recruitment and new employee integration process; and
- Fostered partnerships with Québec universities to increase the supply of electrical engineering graduates to the organization and sector.

THE SHIFT FROM KT TO KM

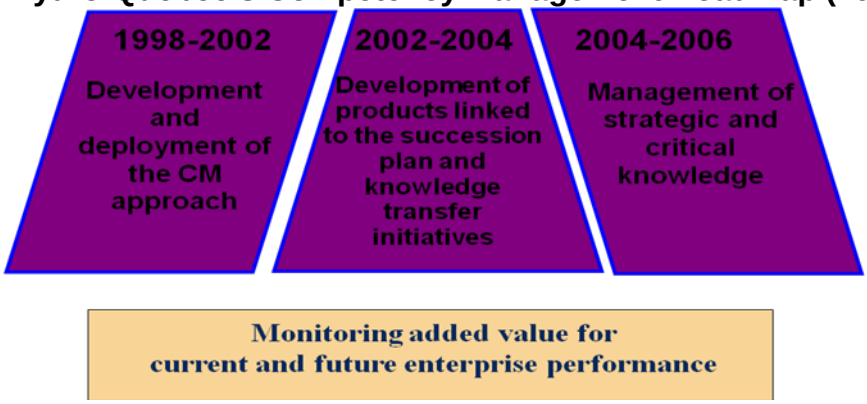
Increasingly Hydro-Québec has shifted its focus from KT to incorporate a broader and more strategic approach to KM –particularly in relation to communities of practice or technical networks and in the capturing and documentation of high-value undocumented knowledge in the technical functions and in the strategic problem-solving activities. Within this framework, learning and KM were seen, around 2002, as being in the same value chain. Figure 4 below identifies the link between competency management (CM) and knowledge management (KM).

Figure 4: CM and KM Linkages

C M and KM processes and strategies 2002+

Plan	Acquire	Develop
Continual adjustment of retirement requests Vulnerability stratification Maps of critical knowledge Expertise management plans	Competitive hiring conditions Evaluation system at hiring, VIP service Partnerships (*Institute of Electrical Power Engineering*) Watch, benchmarking	Development plans Situational learning (apprenticeship, buddy system, coaching, mentoring, online tutorials, collaborative work) Networks (technical or functional)
Use	**Preserve**	**Recognize**
Performance management and mangement of individual contributions Networks (technical or functional)	Hiring in advance Transfer plans Knowledge modeling Networks (technical or functional)	Demonstrate know-how and highlight innovation Daily actions to recognize contributions and attitudes

Figure 5: Hydro-Québec's Competency Management Roadmap (1998-2006)



THE INTRODUCTION OF COMMUNITIES OF PRACTICE

By 2002, HR was looking for leaders and champions to support KM, as well as researching best practices and lessons learned in and outside the electricity industry. Specifically Hydro-Québec took part in a research project in Quebec on ways of working and collaborating in the Internet age. The purpose of the project was to study the implementation, operation and evolution of virtual communities of practice. The two pilot communities did not stay with the project until the end. Key challenges to sustaining these communities were: 1) a lack of situational analysis prior to the establishment of the communities and 2) the tensions between daily work and the managers and employees expectations about what to expect/was required from communities of practice, collaboration and informal learning among co-workers, among geographically dispersed

Meanwhile, in 2002 and 2003, 14 intentional sharing and collaboration networks were created or recognized because they were already well-rooted in existing natural or formal networks. Some of these networks already stood out for their ongoing support and leadership from sponsors, their flexible and open-ended design, their focus on network facilitation (and therefore the support for and training of facilitators). For four of the networks, their implementation of a virtual environment suited the needs of members for their practices. This experience therefore led the organization to recognize the importance of communities of practice and technical networks as a transfer method and to implement other knowledge transfer strategies.

DIFFERENTIAL APPROACH TO COMMUNITIES OF PRACTICE AND TECHNICAL NETWORKS

Hydro-Québec tested two different collaborative approaches for both technical networks and communities of practice. Networks are more functionally based and communities of practice tended to focus on a knowledge domain or a common practice field where there is no content authority. Technical Networks are a mode of collaboration that is sponsored by a manager responsible for key areas of expertise. Technical networks include support level expertise and exchange of knowledge that is more fluid in terms of sharing. Networks include both higher and lower levels of technical support level in a business lines or a functional domain or an activity including: transmission line, distribution line, production installation, etc. This worked really well in these areas of the business but in other areas the networks were not as successful as the target groups were not open to collaborating.

While some areas and professions are more prone to collaboration, on the whole, Hydro-Québec found some resistance to communities of practice and collaboration occurred when the need was not sufficiently recognized by management, co-workers and/or colleagues As a result, Hydro-Québec focused on engaging and developing support from upper management and managers responsible for domains or functions and among the targeted professional groups where there was an interest in developing a network or community of practice.

CRITICAL KM/KT SUPPORTS

ROLE OF HR

Hydro-Québec put in place a "What To Do Guide" network that included a team of HR advisors that were supporting the different business unit's plans for knowledge transfer. This network supports the business unit and develops a KM/KT guide to support KM/KT interventions. HR advisors also played a role on the learning side of capturing the knowledge of the experts. Hydro-Québec uses transfer plans to support knowledge transfer in critical areas. The development of these plans includes:

- Gathering of material;
- Review of procedures, process, and technical data sheets;
- Review of equipment/training requirements; and
- Support the transfer of information through mentoring/coaching.

UNDERSTANDING EMPLOYEES KT NEEDS

While implementing an approach to KM/KT, it became important to understand what employees consider to be "knowledge" and what they saw as important from a corporate perspective. Through focus groups, employees were asked what they saw as "KT" and if they were satisfied with Hydro-Québec's approach to KT. What they heard was that employees wanted Hydro-Québec to look at KT beyond staff turnover particular KT between the regional operations; consultants/researchers and between branches and units. They also indicated that employees need to be better prepared to transfer and receive information (including through coaching).

ESTABLISHING KNOWLEDGE MANAGEMENT GOVERNANCE

Proof of concept experiments illuminated the importance of Information Management and IT contributions for the success of the deployment of KM processes and a KM toolkit.

After much reflection and discussion, the decision was taken in 2008 to introduce a Chief Learning Officer position, which has all responsibility for training and the KM/KT Strategy and all related activity. It was a significant decision to take and took a long time to receive final approval from upper management. Currently HQ is working on a KM corporate strategy and developing pilot projects to improve the integration of IT and IM services, KM services and HR.

IT

There were a number of initiatives that were introduced to support knowledge sharing. Knowledge portals were introduced and tested through a proof of concept approach. Most functions now have a knowledge portal on the shared drive – but these are not truly knowledge portal as they are located on the hard drive and not online knowledge portals. Hydro-Québec now has knowledge portals for critical functions in the organization and uses Live-Link to support document management and collaboration.

KEY SUCCESSES AND CHALLENGES

KEY SUCCESSES

In terms of measuring mobilization, Hydro-Québec has developed an annual employee survey in which a number of factors are assessed including: succession readiness, climate, tracking improvements related to knowledge transfer. While Hydro-Québec has found it hard to measure the impact of KM/KT on productivity, the annual survey of employees on the KT program has demonstrated that satisfaction with the transfer of knowledge and with training had traditionally been relatively low. A more specific survey conducted each year from 2002 to 2007 with managers and experts that were leaving and successors showed high satisfaction with the corporate KT program, as well as showed a relation between organizational climate, succession readiness, and knowledge transfer in the parts of the organization where there has been knowledge transfer plans with advance staffing.

KM/KT strategy has helped Hydro-Québec focus on the formal transfer of knowledge but it is recognized that KT could have a greater impact across the company. Assessment of Hydro-Québec's KM/KT strategy has helped the organization focus on the formal transfer of knowledge but it is recognized that greater impact is needed across the company.

KEY CHALLENGES ENCOUNTERED

Investing Enough Resources in KT – The main reasons cited for a failure to effectively transfer knowledge include:

- Lack of planning and resources;
- Lack of availability of the experts;
- Lack of supporting organizational culture; and
- The suspension of jobs as a result of a reallocation of resources.

INTRODUCING AND SUPPORTING COMMUNITIES OF PRACTICE

From Hydro-Québec's experience it is important not to underestimate the need to develop and introduce new KM/KT strategies. It took a great deal of time to successfully implement communities of practice and the technical networks. HR had to make the business case for them, as well as the collaborative tools required to support these networks. In benchmarking other firms, Hydro-Québec noticed that communities of practice in leading private sector organizations are linked to bottom line targets but at Hydro-Québec this has not been easy to do. The organization is working to link collaboration to performance and in finding ways to link communities of practice to the interest of experts in order to get them more interested in actively participating in the communities/networks.

Given the importance of co-development, those working to support KT have recommended that the organization needs to make available the time of experts and HR to effectively support the development of succession and KT plans.

WORKFORCE FORECASTING

In 2005, Hydro-Québec began to review the impact of its investment in succession planning. The findings of the review were that people did not retire at the same rate as forecasted. People left but a lot of people postponed their retirement and this directly impacted their forecasting of workforce turnover.

Risk Analysis

In 2006 Hydro- Québec did an audit of manpower planning and KT strategy and it was determined that they needed to strengthen key HR processes:

- ⇒ Make succession concerns, including critical knowledge transfer and organizational memory, a part of HR planning process;
- ⇒ Emphasize vulnerabilities/risks in planning;
- ⇒ Assure continuous monitoring of the workforce and feeder groups (external and internal) through both forecasting and simulation;
- ⇒ Identify critical knowledge and the people who hold it – knowledge mapping;
- ⇒ Put in place methods that encourage acquisition of knowledge and organizational memory encourage the identification and sharing of tacit knowledge, facilitate access to explicit knowledge, value knowledge asset base and ensure its use;
- ⇒ Identify and capitalize on opportunities for medium- and long-term optimization; and
- ⇒ Value the knowledge asset base throughout the organization and ensure to use it.

REDEFINING THE ROLE OF HR IN KM/KT

For the HR managers globally – when the KT program was introduced it was clear that the Hydro-Divisions HR specialists who were members of the Gestion du savoir-faire (What to Do Guide) network were coordinating the program, supporting the first knowledge transfer plans and were coaching other HR specialists and trainers that were directly involved in the local projects; but in retrospective unfortunately, the succession plan was not strategically influencing the training departments and HR generalists in how they worked or their focus in supporting the succession plan. HR realized that they needed to assess how the function needed to change to better support KM/KT. This included breaking down its silos; introducing greater integration among HR's key activities; and moving towards more informal learning, job aids and easier access to organizational memory and to online training to provide employees with more flexibility.

LESSONS LEARNED

ENGAGING SENIOR LEADERSHIP

In developing the corporate succession support plan (the primary KT strategy), it was recognized that upper management had to be more engaged in order to effectively link the succession plan to the business side of the organization.

Hydro-Québec has also found that the Chief Learning Officer (CLO) role is not sufficient in and of itself to realize the full potential of its KM and KT initiatives. Rather senior management needs to drive KM/KT at a corporate level and ensure resources are available to support it. Best practices research at TVA and other leading industries has demonstrated to Hydro-Québec that the successful implementation of KM/Kt within these organizations was the direct result of upper management being actively and visibly involved. Hydro-Québec's corporate succession support plan has been a critical tool for ensuring support and buy-in from senior management/executive team.

Hydro-Québec has also found that it needs to invest more in the introduction and understanding of communities of practice and collaborative work particularly in ensuring the supporting technology, leadership, labour relations, and culture is in place to support knowledge sharing. To develop leadership and build a supportive culture, Hydro-Québec has invested in more training and coaching of managers so that they are better able to use tools to mobilize the experts in order to share critical knowledge.

STRENGTHENING KM/KT EFFORTS AS FOLLOWS:

- Continuous integrated planning:
  - Make succession concerns, including critical knowledge transfer and organizational memory, a part of the ongoing business and HR planning process.
  - Emphasize vulnerabilities/risks.
- Position the project well at the corporate level and in each of the functions or business activity:
  - Demonstrate the value proposition for the top management, functional managers, the employees and line responsibilities
  - Develop a business case to get buy-in from senior leadership.
  - Combine and integrate all activities into a project structure and promote synergies.
- Identify and capitalize on opportunities for medium- and long-term optimization:
  - Make sure to target expertise (who, why, how, consequences etc.).
  - Operational knowledge needs to be linked up with supporting systems.
  - Strategic knowledge needs to be linked up with the key business domains, in the domain of activity or in one specific domains of expertise.
- Identify the key elements of transfer.
- Capture knowledge of the expert and produce a document in a format appropriate to the context. These could include:
  - Heuristic schemata (Knowledge maps) and references;
  - Models of knowledge by object portrayed and references;
  - Electronic repository of knowledge or knowledge books, collection of good practices, case studies, learning stories;
  - Demonstrations on video; and

- Updating of processes, procedures, norms, of contents of training, telephone directories.

Provide all managers with simple tools to address knowledge sharing and knowledge transfer issues within teams, as well as the continued promotion of collaboration, inter-generational dialogue and internal networking.

FUTURE DIRECTIONS

Going foward, the focus of Knowledge Management at HQ is to get buy-in from managers at all levels to put in place or improve informal learning processes and tools, as well as formal learning processes adapted to the business needs and the needs and preferences of its employees.

Currently representatives from management, as well as information technology management and information management are involved in developing the Learning and KM corporate strategy or value proposition and are partners in the development of solutions at the corporate and division levels.

From Hydro-Québec's experience the KM/KT Strategy cannot just focus on critical workforce factors and knowledge documentation and transfer. It must be linked to business priorities and critical and performance improvement priorities. It must also be supported by the proper IT environment and by sound document management practices and content management systems.

Appendix

Tool Kit extracts from 2003
1) 2003: simple tools for HR, trainers and OD spécialists supporting the capturing of knowledge and putting it in a user –friendly format

2) 2009-2010: The value proposition and the tools that are available for deployment with examples of what is done in two business units see PDF

3) 2010 tools for different Management problems: you might find some interest in that KM tool that was available yesterday on the web site of CEFRIO.