Knowledge Management: Monitoring and Evaluation Methods

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Slides available at:
www.knowledgemobilization.net/evaluation
Password: Monitor
Logistics

When can I get more coffee?
When is lunch?
Where are the bathrooms?
When can I go home?
What are we doing today?
What if I want more information?
Workshop Agenda

Morning:
• Why is monitoring & evaluation important?
• Understanding the operational dimensions of monitoring and evaluation in KM
• Learning about current monitoring and evaluation practices in KM including existing models and case studies

Afternoon:
• Identifying challenges including personnel issues, organizational issues, limits of current models, and limits of measuring complex systems
• Paying attention to trends, including data mining, data visualization, dashboards, mobile communication, embedded tracking, and cross-sector collaborations.
Workshop Objectives

You will learn:
• Enhance your understanding of **monitoring & evaluation** as it relates to KM.
• Develop an understanding of **strategy** as it relates to KM.
• Assessment of **current state** of monitoring & evaluation practices.

• Understand the **management process** for monitoring & evaluation.
• Gain access to **tools and templates**.
• Engage with a broader **community** of people working to implement monitoring & evaluation.
Workshop Format

- Some lecture
- Lots of group discussions
- A few videos
- Some resource materials
Discussion

Hello

Let’s find out a little about each other.
What do you hope to gain today?
Discussion

What do you monitoring & evaluation?
"When a measure becomes a target, it ceases to be a good measure."

- Goodhart's law
Sebastian Wernicke: Lies, damned lies and statistics

http://www.ted.com/talks/lies_damned_lies_and_statistics_about_tedtalks.html
“My question is: Are we making an impact?”

New Yorker: Sam Gross 1991
How are we measuring now?

• The Challenge: How did we get here? A brief history.

• Where are we: Study Designs
  – Longitudinal studies
  – Interrupted time series studies
  – Controlled before and after studies

• Where are we: Monitoring Designs
  – Direct observation
  – Interview
  – Survey
  – Multi-method approaches
What are we trying to find?

**Value Identification**
- Programs
- Policies
- Priorities
- Processes/Procedures
- Practice
- Products
- Perspectives
- Possibilities
- People Skills

**Where do we go from here?**
- Spectrum of impact
- Multiple value manifestations
- Enhanced partnerships and collaboration
- Gamification, sensors, and always-on monitoring
The Challenge of the “Growth of Everything” Context
Data and information overload

More data generated in next 4 years than in the history of the world

INFORMATION OVERLOAD

People are connected up to 12 hours a day to:

People see more than 34 billion bits of information per day — an equivalent of two books a day

AMOUNT OF DATA IN 2010

1.2 zettabytes

AMOUNT OF DATA IN 2020

35 zettabytes

LIMITED INFORMATION INTAKE

Time constraints:
24 hours a day = 1,441 minutes a day

Machine Data Transfer Rate

2 million bits per second

Human Absorption Rate

126 Bits per second

Rate humans can listen

40 Bits per second

A lifetime of learning can be transferred over the Internet.

Internet Audience | unique visitors

Worldwide: >1 billion

Asia: 400 million

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Why are we concerned about this now?

• Production

  – Every day, we create 2.5 quintillion bytes of data — so much that 90% of the data in the world today has been created in the last two years alone.
  – This data comes from everywhere: sensors used to gather climate information, posts to social media sites, digital pictures and videos, purchase transaction records, and cell phone GPS signals to name a few.
  – This data is big data.

http://www-01.ibm.com/software/data/bigdata/
Over Consumption?

- Email: 144 billion email per day worldwide. (2012)
- Websites: 624 million (2012)
- Users: 2.4 billion (2012)
- Mobile: 6.7 billion mobile subscriptions (2012)
- Facebook: 1 billion users (2012)
- Google: 1.2 trillion searches on Google (2012)
- YouTube: 4 billion hours/month of video watched (2012)
- Youth: spend less time watching TV (60%) and more time online (600%)
Growth of the Research System

Growth of Scientific Literature

- Available literature includes considerable discussion about the value of knowledge translation
- Little solid research concerning methods for ongoing monitoring and evaluation of KT processes
- Most literature discusses measurement of the outputs of KT activities
- Some literature discusses outcomes
- Very little on longer-term impact of KT
This growth shifts patterns of sharing

- Passive push (until 1970s+)
  - Dissemination via traditional journals, conferences

- Push harder (1990s+)
  - Focus on implementation, e.g. performance feedback

- Partner & pull (2000+)
  - Linkage & exchange, e.g. joint production
Growing recognition that success will mean working together in more complex ways
Challenge: Competition in “idea market”

Philip Davies, Is Evidence-Based Government Possible?
Jerry Lee Lecture 2004, Washington, DC
Taking in traumatic information and transforming it into life-affirming action may turn out to be the most advanced and meaningful spiritual practice of our time.

http://globalpublicmedia.com/how_do_you_like_theCollapse_so_far
Examples of KM Worldwide

Inspiration Session (MBA): Knowledge Management - Lessons I...

http://www.youtube.com/watch?v=J5nrbJ370po#

Play to 4:45
What is “Business as Usual” in KM Evaluation and Monitoring
Steps or shift in ecology?

Mitton (2007) & Ward (2001) identified 5 main steps in KT:
1. identification and communication of the problem
2. analysis of the context in which the problem exists
3. development and selection of knowledge
4. activities and interventions
5. use of knowledge
What are we doing: Study Designs

• KT monitoring and evaluation studies tend to follow one of three main directions:
  – Longitudinal studies
  – Interrupted time series studies
  – Controlled before and after studies
Longitudinal Studies

• Continued monitoring of a KT process or “intervention” from beginning to end
• Real-time monitoring of an intervention allows for identification of problems with the intervention and to address these issues throughout the entire process
• Requires significant financial, time and human resources
Interrupted time series studies

- Involves taking measurements at multiple points before and after a KT intervention has taken place including some limited measurement at pre-selected stages of the intervention.
- More streamlined than longitudinal studies.
- Does not easily allow assessment of the impact of outside influences on the outcome being studied.
Controlled before and after studies

• Make assessments before commencing the intervention and then making assessments after the intervention has taken place to evaluate changes that have occurred

• Beneficial in determining the effect of an intervention in one specific isolated context

• Difficult to account for confounding variables that may have affected the outcome being studied
What are we doing:
Monitoring

• Monitoring and control of a KT study typically involves one of 4 techniques:
  – Direct observation
  – Interview
  – Survey
  – Multi-method approaches
Direct Observation

- Constant awareness of how the KT process is unfolding
- Allows for ‘on the fly’ problem solving
- Develop KT solution that is right for the context of the initiative
- Requires the continuous presence of a knowledge broker
- May be a costly endeavour and create a strain on human resources, finances and workloads
Interview

- Qualitative semi-structured interviews with participants at the outset of the intervention and throughout the implementation process
- One of the most popular methods for evaluating and monitoring KT
- Time consuming requiring preparation and follow up
- Care must be taken to ensure that results produced are not biased
Survey

- Typically involves a before and after survey
- Before the intervention takes place to get a baseline of attitudes, knowledge, skills and descriptive statistics
- After completion of the KT intervention process, individuals are given another survey to determine the change in the factors measured before the survey
- Relatively quick, cheap and easy to perform
- May not provide a full picture of the changes that occur
Multi-method Approaches

• A coordinated, multi-layer monitoring plan throughout the whole process of the KT initiative
• Provide the most complete picture of the initiative, from multiple perspectives in a continuous manner if planned and organized effectively
• Allows for both qualitative and quantitative insight
• More labour, time and financially intensive than any of the other methods used alone

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No singular KT strategy was shown to be effective in all contexts. Conclusions about interventions cannot be taken on their own without considering the characteristics of the knowledge that was being transferred, providers, participants and organizations.

- The effectiveness of knowledge translation strategies used in public health: a systematic review
  LaRocca et al. BMC Public Health 2012, 12:751
So.

How can we think differently?
Do we want KM evaluations that measure the effectiveness of KM interventions?

OR

Do we want to make what we know ready to use, to create value for the communities we are concerned about?
How to align Strategy & Tactics to Create impacts that meets the Vision, Mission, and Goals?
Thinking about KT as Value Creation

**What:** Data, Information, Description, Stories

**Now What:** Decisions, Directions, Actions

**So What:** Meaning, Analysis, Interpretation

**Value Creation**

- Programs
- Policies
- Priorities
- Processes
- Practice

- Products
- Perspectives
- Procedures
- Possibilities
- People Skills

MULTIPLE INPUTS FROM RESEARCH, PRACTICE, EXPERIENCE, CULTURE

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Thinking about a spectrum of activities


Thinking about a spectrum of interactions

Review and Conceptualization of Impacts of Research/Creation in the Fine Arts

Thinking about a nested system of changes

Shaxson and Gwynn (2010) “Developing a strategy for knowledge translation and brokering in Public policymaking” paper from Knowledge Translation and Brokering workshop, Montreal, Canada, 20 October 2010
Thinking about Conversations that link multiple contents with contexts, capacities and cultures within and between people.
Choosing metrics that are preferred by people

Juice: A Guide to Creating Dashboards People Love to Use
Choosing metrics that are preferred by people

http://www.youtube.com/watch?v=Rk0FH4OLPQ4
Choosing play and game design in how we share

The nature of intelligent environments has transformed with the impact of Web 2.0 and social media over the past years.

The conceptualization of the user has changed from being a cog in an organizational machine to a partner in system interaction and an ultimate consumer, and more recently to a content creator and a task performer.
Hacking yourself – how to learn from play

Minute Hacks: The Gamification of Fitness

http://www.youtube.com/watch?v=nq4ufkSVa3c
Measuring for Impact requires a shift from:

• “policing” to “engaging”
• “producers and users” to “partners and co-creators”
• “mechanical systems” to “complex emergent systems”
• “content is king” to “Yes but conversation is queen”
• “binary yes/no, on/off” to “spectrum of utilization”
• “You fit context” to “Context is customized to you”
• “work” to “purposeful play”
5 key elements of KM activity

- Audience
- Message
- Method
- Messenger
- Evaluation
To measure for impact we use two distinct yet complementary processes: Monitoring and Evaluation

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>Evaluation</th>
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</thead>
<tbody>
<tr>
<td>Continuous process</td>
<td>Intermittent process</td>
</tr>
<tr>
<td>Provides clarification of objectives</td>
<td>Analysis of why intended objectives were not achieved</td>
</tr>
<tr>
<td>Provides linkages between activities and objectives</td>
<td>Determines casual relationship between activities and results</td>
</tr>
<tr>
<td>Use of performance indicators to set targets</td>
<td>Looks at implementation process</td>
</tr>
<tr>
<td>Comparison of ongoing results with set targets</td>
<td>Explanation and exploration of unintended consequences</td>
</tr>
<tr>
<td>Allows for detection and reporting of issues and progress</td>
<td>Allows for identification of results, achievements, potential and recommendations</td>
</tr>
</tbody>
</table>
Why measure results?

• To determine successes and failures
• To provide a forum to learn from failures and reward successes
• To recognize and improve upon failures
• To demonstrate concrete results
• To determine initiative is on the correct course
• To provide accountability
• To provide transparency
## Traditional versus Results Based M&E

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Results Based</th>
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</thead>
<tbody>
<tr>
<td>Did they do it?</td>
<td>So what?</td>
</tr>
<tr>
<td>How well executed a program’s implementation is</td>
<td>What are the goals of the program?</td>
</tr>
<tr>
<td>Link to unit of responsibility</td>
<td>Are they achieved?</td>
</tr>
<tr>
<td>No understanding of successes or failures</td>
<td>How can we prove they have been achieved and provide deeper understanding?</td>
</tr>
</tbody>
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Case Studies

• Effective Knowledge Translation & Exchange to Improve Clinical Practices and Return to Work Outcomes for Injured Workers
• World Bank. Ten Steps to a Results-Based Monitoring and Evaluation System: A Handbook for Development Practitioners
• Promoting and assessing value creation in communities and networks: a conceptual framework
Case Study: Effective Knowledge Translation & Exchange to Improve Clinical Practices and Return to Work Outcomes for Injured Workers

Standard Model
Goals: Reduced Physical Impairment

Low Rate of Return to Work

Preferred Model
Goals: Return to Work & Improved Function

Improved Rate of Return to Work

Hypothesis: Effective KTE would Improve Return to Work Outcomes for Injured Workers

Standard Model represents approach employed by local practitioners interfacing with local peers with limited Knowledge Transfer.

Preferred Model would provide Knowledge Translation and Exchange to communicate best practices and evidence based information through effective continuing education and networking with a larger peer group.
Study Approach

• 3 phased initiative:
  – Developed best practices guide & tool kit
  – Created network of peer selected ‘educationally influential clinicians
  – Conducted 11 province wide seminars on resource kits

Response to Best Practices Guide and Tool Kit

<table>
<thead>
<tr>
<th>Statement</th>
<th>No</th>
<th>Neutral</th>
<th>Yes</th>
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<tr>
<td>Easy to Read</td>
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<td>Better Understanding of Best Practices</td>
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<tr>
<td>Better Relationships to Improve Workers’ Treatment</td>
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<tr>
<td>Access to Useful Standardized Outcome Measures</td>
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<tr>
<td>Better Access to Web Based Treatment Information</td>
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<tr>
<td>Project Materials Help Me Deliver Better Care</td>
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Study Outcomes

• Training reached 177 of approximately 750 practitioners
• Seminars conducted in May 2006 throughout Alberta
• Examined monthly trends in time lost benefits claims
  – Study indicated a 2% decrease after KTE intervention
  – Outcome complicated by increase in claimants receiving treatment
• ‘Organization Culture’ of practice settings may present a barrier to research uptake
• Future KTE initiatives should consider the organizational culture in process design.
1. Conduct readiness assessment
2. Determine outcomes to monitor and evaluate
3. Select key indicators to monitor outcomes
4. Baseline data on indicators
5. Plan for improvement
6. Monitor for results
7. Role of evaluations
8. Report findings
9. Use of findings
10. Sustain M&E system within the organization
Step 1: Readiness Assessment

- Determines readiness for an organization to adopt a monitoring and evaluation system
- Assumes there is a need for the system
- 3 main elements:

  **Incentives and Demands**
  - Need driving the development of system
  - Advocates/Champions
  - Who?
  - Why?
  - Who owns the system
  - Who will/will not benefit from the system

  **Roles, Responsibilities and Existing Structures**
  - Roles of those involved
  - Who produces information?
  - Where is information used?
  - Ownership and Accountability

  **Capacity Building Requirements**
  - Skills
  - Requirements of technical assistance,
  - Training
  - Capacity
  - Institutes that can help
Step 1: Example

- **Bangladesh**
  - Reputation as one of the most corrupt countries posed a major obstacle
  - No presence of a champion, no reform incentives, no legal requirements for M&E, weak technical ability
  - Not feasible

- **Egypt**
  - Key champion found in Finance Minister and other key senior officials
  - High capacity to move towards results based system
  - Lack of clear capacity
  - Feasible but more work needs to be done on a strategy, which should be slowly and systematically implemented

- **Romania**
  - Clear commitment to reform, development of a medium-term economic strategy, strong workforce for data collection and use
  - Lack of understanding within public sector that conflicts with government initiatives, weak government institutions, and central planning represent barriers
  - There is an opportunity to move towards implementing M&E systems
Step 2: Agreeing on Outcomes to Monitor and Evaluate

• Targeting outcomes is important to demonstrate success
• Important to distinguish between goals (long term), outcomes (intermediate) and targets (short-range)
• To set and agree upon outcomes
  – Identify key stakeholder representatives
  – Identify major concerns of stakeholder groups
  – Translate problems into outcome statements
  – Disaggregate to frame desired outcome
  – Develop assessment plan
Step 3: Select Key Indicators to Monitor Outcomes

• Translate outcomes into indicators
  – Outcome: Improve student learning
  – Indicators: Increase in test scores

• Good performance indicators are:
  – Clear
  – Relevant
  – Economic
  – Adequate
  – Monitorable

• Proxy indicators are used when information for direct indicators is not available

• Can use predesigned indicators (MDGs, Word Banks’s rural development handbook etc) or can set own indicators such as those developed as part of the Core Welfare Indicators Questionnaire in Africa
Step 4: Baseline Indicators

• Provides a view of where we are today

• First measurement in the M&E process, which gives a foundation for improvement

• 4 stages
  – Build baseline information
  – Identify data sources for indicators
  – Design and compare methods of data collection
  – Conduct pilots
Step 5: Plan for Improvement

• Selection of results targets
  • Take baselines seriously
  • Expected funding and resource levels
  • Do not set targets too much into the future
  • Set realistic targets
  • Flexibility
  • Don’t set firm targets if indicator is new
  • Be aware of political games when setting targets
Step 6: Monitor for Results

• Two main types of monitoring - implementation and results based

• Key needs and components of results based monitoring
  – Ownership
  – Management
  – Maintenance
  – Credibility

• Data should be checked for quality: reliability, validity, and timeliness
Step 7 : Role of Evaluation

• Evaluation assesses KTE monitoring data to determine:
  – Relevance
  – Efficiency
  – Impact; and
  – Sustainability

• sequential complementarity – data generates questions to be answered by subsequent evaluation

• information complementarity – data used to answer different questions in monitoring and evaluation phases

• interactional complementarity – ‘real time’ use of both monitoring and evaluation in tandem to direct initiatives
Step 7: Role of Evaluation –
Pragmatic Uses for Evaluations

1. Resource Allocation decision making – what’s working well, what needs fixing, what needs to be scrapped
2. Analysis of Problems – has the correct problem been identified?
3. Identify Emerging Problems
4. Selection of Best Approach – sorting out competing approaches on the basis of proven results
5. Demonstrate Success of Reform and Innovation – track positive change
6. Build Consensus on Problem Cause and Appropriate Response
Step 7: Role of Evaluation - Outcomes

- Description of situation, process or event being monitored
- Normative or comparison against pre-determined compliance standard
- Correlation between two monitored situations or data sets
- Cause and Effect Relationships (similar to correlation but more outcome based)
- Program logic – extrapolation or speculation on likelihood of continued or future success
- Implementation or progress reporting
- Performance – are we meeting our goals?
Step 8: Report Findings

• Monitoring and evaluation findings are important as they can be used to:
  – Demonstrate accountability
  – To educate
  – To convince
  – To document
  – To explore and investigate
  – To involve stakeholders
  – Gain support for an initiative
  – Provide and promote understanding
Step 8: Report Findings

• Presentation of findings:
  – Written summary
  – Oral presentation
  – Visual presentation
  – Executive summary

• Reports need to be clear, concise and understandable

• Should the M&E system demonstrate negative performance, a potential explanation and steps to be taken to fix the solution should be included
Step 9: Use of Findings

• Findings provide
  – Feedback
  – Knowledge
  – An opportunity for learning

• To optimize use of findings, share them
  – Media
  – Legislation and government
  – Government and non-government websites
  – Publish results
  – Engage with others
  – Development partners
Step 10: Sustain M&E within the System

- Six key factors sustaining M&E systems
  - Demand
  - Clear roles/responsibilities
  - Trustworthiness and credibility
  - Accountability
  - Capacity
  - Incentives

- Incentives and disincentives play a key role in the maintenance and sustainability of M&E systems
Communities of Practice: Evaluation Framework

Promoting and assessing value creation in communities and networks: a conceptual framework

Collaborative Forums for Problem Solving

http://youtu.be/YgGAJeXbIFM
5 cycles/levels of value creation

**Immediate value**: the activities and interactions between members have value in and of themselves.

**Potential value**: the activities and interactions of cycle 1 may not be realized immediately, but rather be saved up as knowledge capital whose value is in its potential to be realized later.

**Applied value**: knowledge capital may or may not be put into use. Leveraging capital requires adapting and applying it to a specific situation.

**Realized value**: even applied new practices or tools are not enough. A change in practice does not necessarily lead to improved performance, so it is important to find out what effects the application of knowledge capital is having on the achievement of what matters to stakeholders ...

**Reframing value**: this happens when learning causes a reconsideration of how success is defined. It includes reframing strategies, goals and values…
Key questions about Immediate Value

What happened and what was my experience of it?

What were significant events? What happened?

• How much participation was there?
• What was the quality of the mutual engagement?
• Was it fun, inspiring, convivial?
• How relevant to me was the activity/interaction?
• With whom did I interact or make connections?
• Which connections are most influential on my own development?
Key questions about Potential Value

What has all this activity produced?

How has my participation changed me?
• Have I acquired new skills or knowledge?
• Has my understanding of the domain or my perspective changed?
• Do I feel more inspired by the work I do?
• Have I gained confidence in my ability to engage in practice?

How has my participation changed my social relationships?
• What access to new people have I gained?
• Do I know them well enough to know what they can contribute to my learning?
• Do I trust them enough to turn to them for help?
• Do I feel less isolated?
• Am I gaining a reputation from my participation? ...
Key questions about Applied Value

What difference has it made to my practice/life/context?

• Where have I used the products of the community/network?
• Where did I apply a skill I acquired?
• When did I leverage a community/network connection in the accomplishment of a task?
• Was I able to enlist others in pursuing a cause I care about?
• When and how did I use a document or tool that the community produced or made accessible?
• How was an idea or suggestion implemented? At what level -- individual, team/unit, organization?
Key questions about Realized Value

What difference has it made to my ability to achieve what matters to me or other stakeholders?

• What aspects of my performance has my participation in community/network affected?
• Did I save time or achieve something new?
• Am I more successful generally? How?
• What effect did the implementation of an idea have?
• Did any of this affect some metrics that are used to evaluate performance?
• What has my organization been able to achieve because of my participation in community/network?
Key questions about Reframing Value

Has it changed my or other stakeholders’ understanding and definition of what matters?

• Has the process of social learning led to a reflection on what matters?
• Has this changed someone’s understanding of what matters?
• Does this suggest new criteria and new metrics to include in evaluation?
• How has this new understanding affected those who have the power to define criteria of success?
• Has this new understanding translated into institutional changes?
• Has a new framework or system evolved or been created as a result of this new understanding?
Additional Resources

- Monitoring & Evaluation Planning for Projects/Programs - Scott Chaplowe
  http://vimeo.com/45266312

- Making sense of too much data

- Three Eras of Knowledge Management - Nancy Dixon
  http://www.youtube.com/watch?v=_YC8jYeKpBw
Thank you – Merci
Final Questions and Discussion

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