Knowledge Management in Theory and Practice

Lecture 10: The Value of KM

KM Metrics Overview

- Some commonly used approaches:
  - Sveiby's Four Categories for Measuring Intangible Assets
  - ICM Group – Current Measures for Intellectual Capital
  - Edvinsson and Malone's Universal Intellectual Capital Navigator
  - Benchmarking
  - The Balanced Scorecard Method
  - The House of Quality Method
  - Results-based or outcome-based approaches

Why measure?

- To prove that a KM initiative is fulfilling its objectives and creating value
- To convince management and stakeholders of the value of KM
- To refine the project by providing regular benchmarks to identify areas for improvement, change or adaptation

What do we want to measure?

- Meaningful measures relate directly to specific targets and objectives
  - KM measures should tie into the critical success factors of the project
  - Need a clear understanding of your goals before choosing metrics
- Measurements have varying levels of informativeness
  - Some quantitative metrics give you hard data without explaining why things are so

For whom are we measuring?

- Who is concerned by the success of the KM initiative, and what kind of results are they expecting?
- Target interests of stakeholders with metrics
  - Three main categories:
    - *Program funders - ROI*
    - *Managers – adoption*
    - *Employees/participants - practicality*

When should we measure?

- 4 phases of KM projects
  - Pre-Planning
  - Start-Up
  - Pilot Project
  - Growth & Expansion
- Begin metrics during the pilot phase
  - Although some metrics can be useful in the start-up phase to garner support and keep people involved

Smith. (2001) "Metrics Guide for Knowledge Management Initiatives."

How should we measure?

- *Quantitative measurement*
  - Pros: assigns a numerical value to an observable phenomenon and provides concrete evidence (or financial value) of the success of KM programs
  - Con: problematic for demonstrating the value of the more intangible results of KM.
- *Qualitative measurement*
  - Pro: provides context and value to notions that are either difficult or irrelevant to quantify (e.g. perceptual value)
  - Con: more difficult to convince stakeholders

How should we measure?

- *Anecdotal – qualitative/quantitative hybrid*
  - "serious anecdote" = story that has a "lessons learned" punch line
  - excellent for capturing the context of a valuable piece of knowledge
  - often carries a quantitative measurement

Davenport and Prusak (2000). Working Knowledge.

How should we collect data?

- Different methods for different metrics
  - Built into IT systems
  - Surveys
  - Interviews
  - Focus groups
  - Financial analysis
  - Others…

How can we analyse results?

KM Initiative	Key System Measures	Key Output Measures	Key Outcome Measures
Best Practice Directory	• Number of downloads • Dwell time • Usability survey • Number of users • Total number of contributions • Contribution rate over time	• Usefulness survey • Anecdotes • User ratings of contribution value	• Time, money, or personnel time saved by implementing best practices • Number of groups certified in the use of the best practice • Rate of change in operating costs
Lessons Learned Database	• Number of downloads • Dwell time • Usability survey • Number of users • Total number of contributions • Contribution rate over time	• Time to solve problems • Usefulness survey • Anecdotes • User ratings of contribution value	• Time, money, or personnel time saved by applying lessons learned from others • Rate of change in operating costs
Communities of Practice or Special Interest Groups	• Number of contributions • Frequency of update • Number of members • Ratio of the number of members to the number of contributors (conversion rate)	• Number of "apprentices" mentored by colleagues • Number of problems solved	• Savings or improvement in organizational quality and efficiency • Captured organizational memory • Attrition rate of community members versus non-member cohort

Source: Smith, 2001, 67

How do we measure different levels of impact?

- 3 types of metrics:
  - Outcome metrics - applying metrics to the productivity and revenue of the organization as a whole
  - Output metrics - measurement at the project level, usually specific processes
  - System Metrics - measurement of IT tools, and their integration and usefulness in supporting initiatives

Source: Smith, 2001)

How to answer the question: "What is it worth?"

- KM metrics are a heuristic exercise not a precise mathematical one
  - More craft than science
  - May change as field matures
  - Multiplicity of approaches used
  - More guidelines than recipes/formulae
  - Tend to be customized more than generic

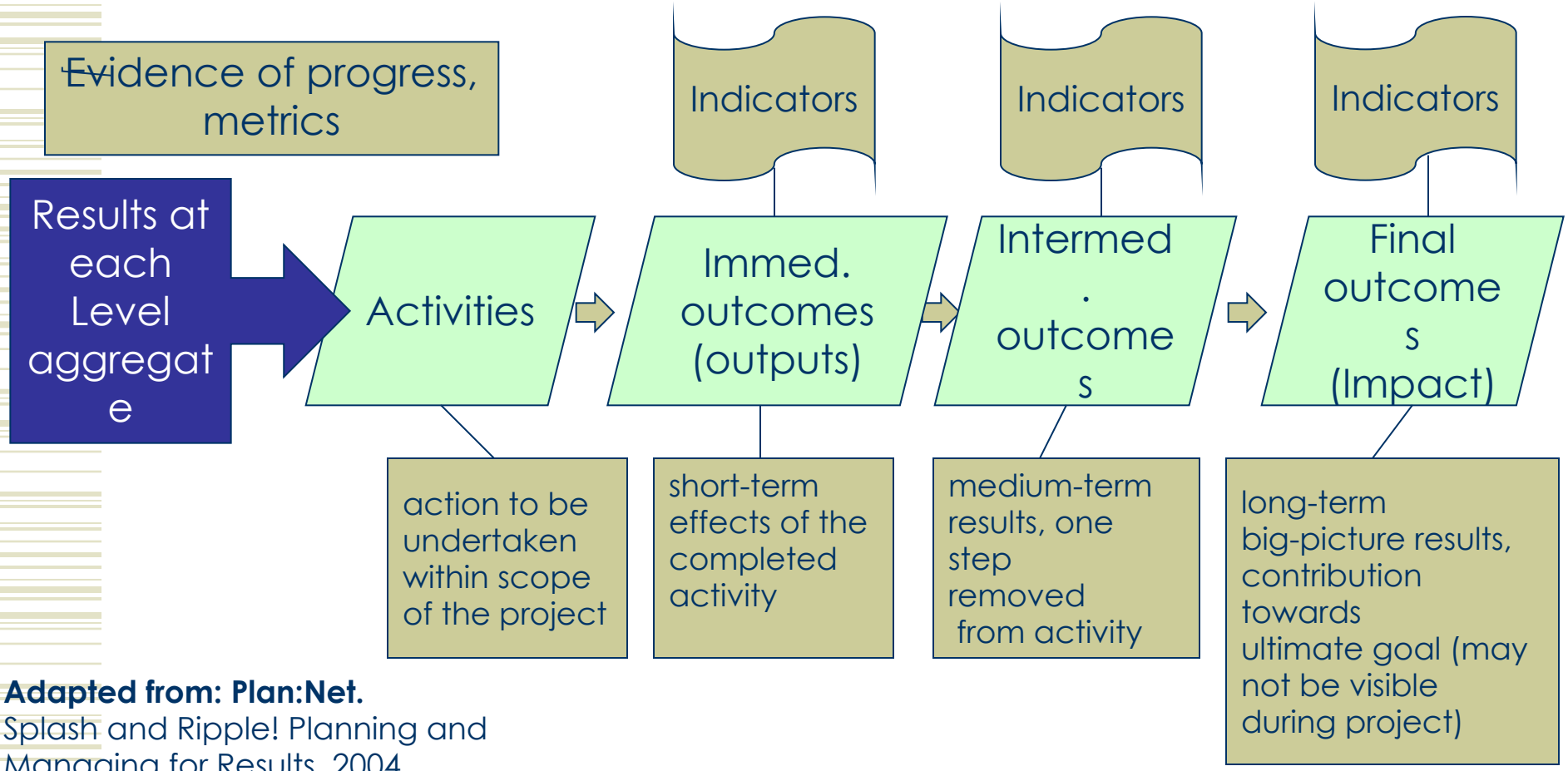
Results-based management (RBM)

- RBM – Emphasis on:
  - defining realistic results based on analysis
  - monitoring progress of expected results
  - reporting
- **Result** = describable or measurable change resulting from a cause and effect relationship
- Also used by CIDA, UN agencies, USAID, Fujitsu, among many others

RBM - continued

- Results chain: Explores how resources and activities connect with changes (flow type)
  - Activities: actions to be undertaken within the scope of the project
  - Immediate outcomes (a.k.a outputs): short-term effects of the completed activity
  - Intermediate outcomes: medium-term results, one step removed from activity
  - Final outcomes (a.k.a impact): long-term big-picture results, contribution towards ultimate goal (may not be visible during project)
  - Indicators: evidence of progress, metrics
- Results aggregate at each level

Results chain – "splash and ripple"



Adapted from: Plan:Net.
Splash and Ripple! Planning and Managing for Results. 2004.

Why RBM for KM?

- Traditional metrics frameworks are difficult to apply to KM, especially in government
  - Strong ROI focus
  - Not enough emphasis on cause and effect
- Although metrics is not an exact science, indicator selection is made easier with clear and well-defined results

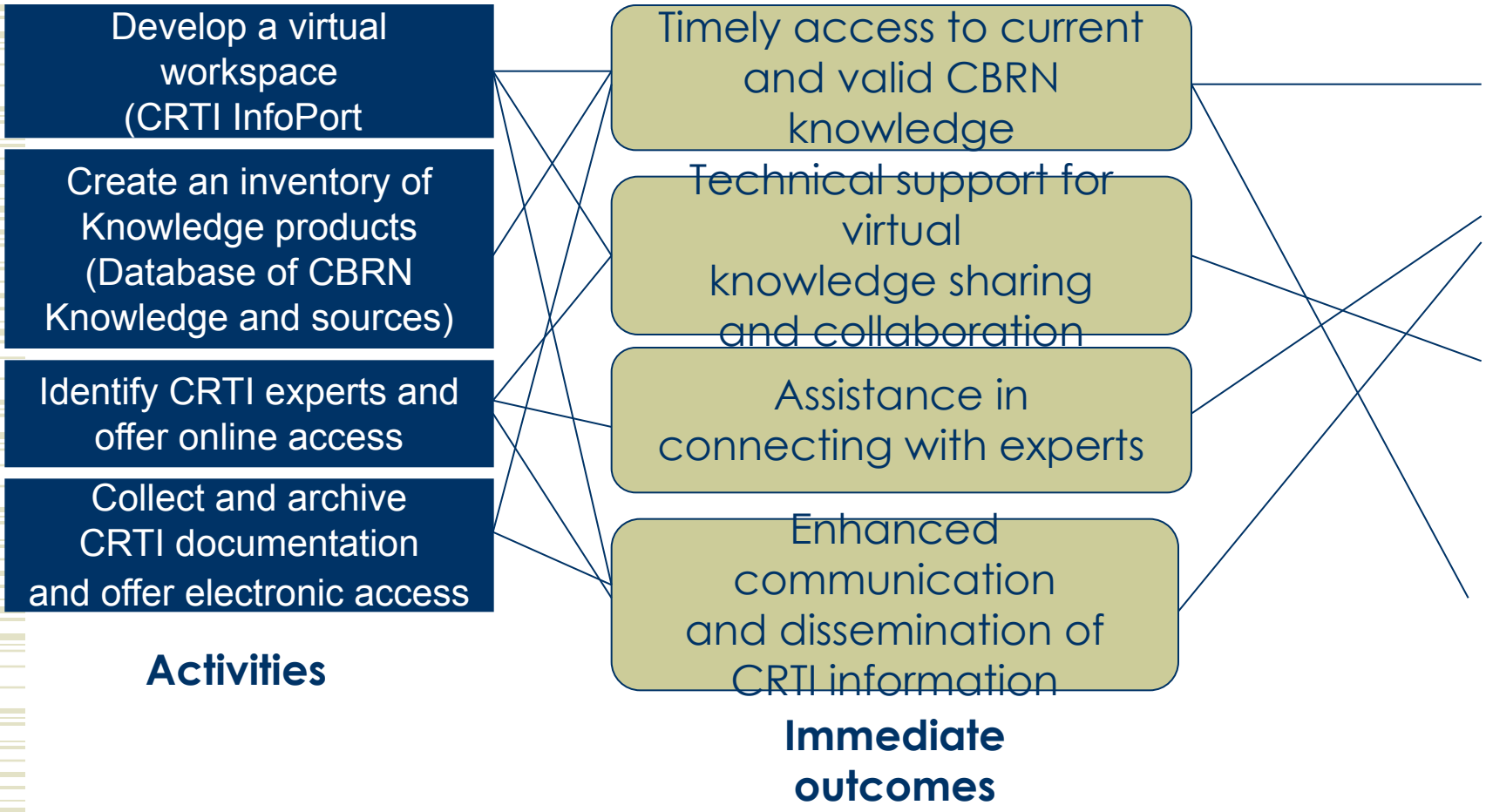
Case study: Canadian anti-terrorism organization

- KM strategy and initiatives implemented in 2002
  - facilitate interactions within the chemical, biological, radiological and nuclear (CBRN) research community,
  - stimulate science and technology innovation and knowledge creation
  - provide knowledge to the broader stakeholder community
- 2005-2006 is year 4 of 5 year mandate so it was a good time to assess success of KM

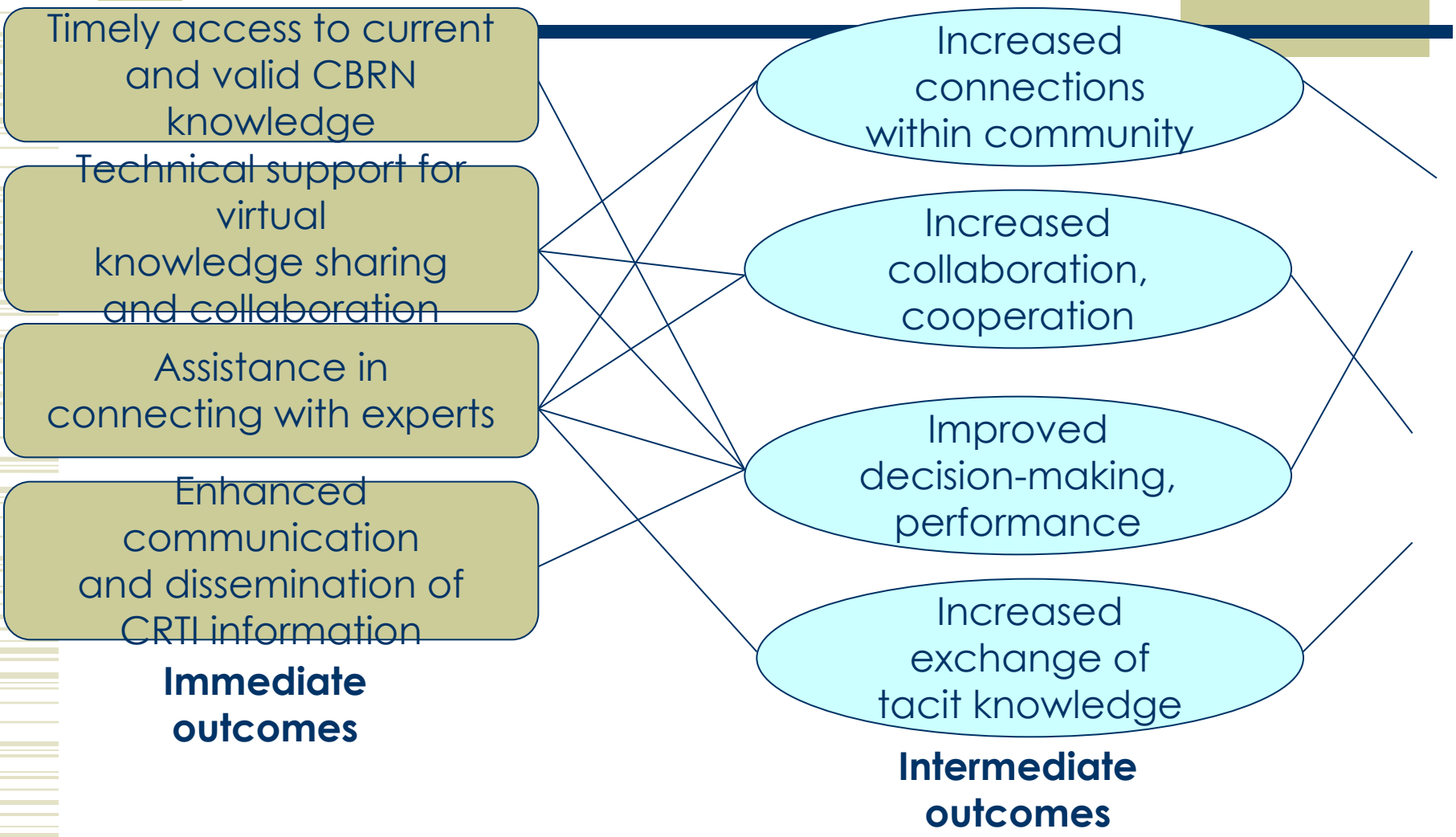
KM at CRTI

- 4 main KM projects at CRTI, with 2 related initiatives
  - CRTI InfoPort (Portal)
  - Community support (Training, exercises, etc)
  - Symposia and workshops
  - Knowledge products
  - Media communications
  - Information management

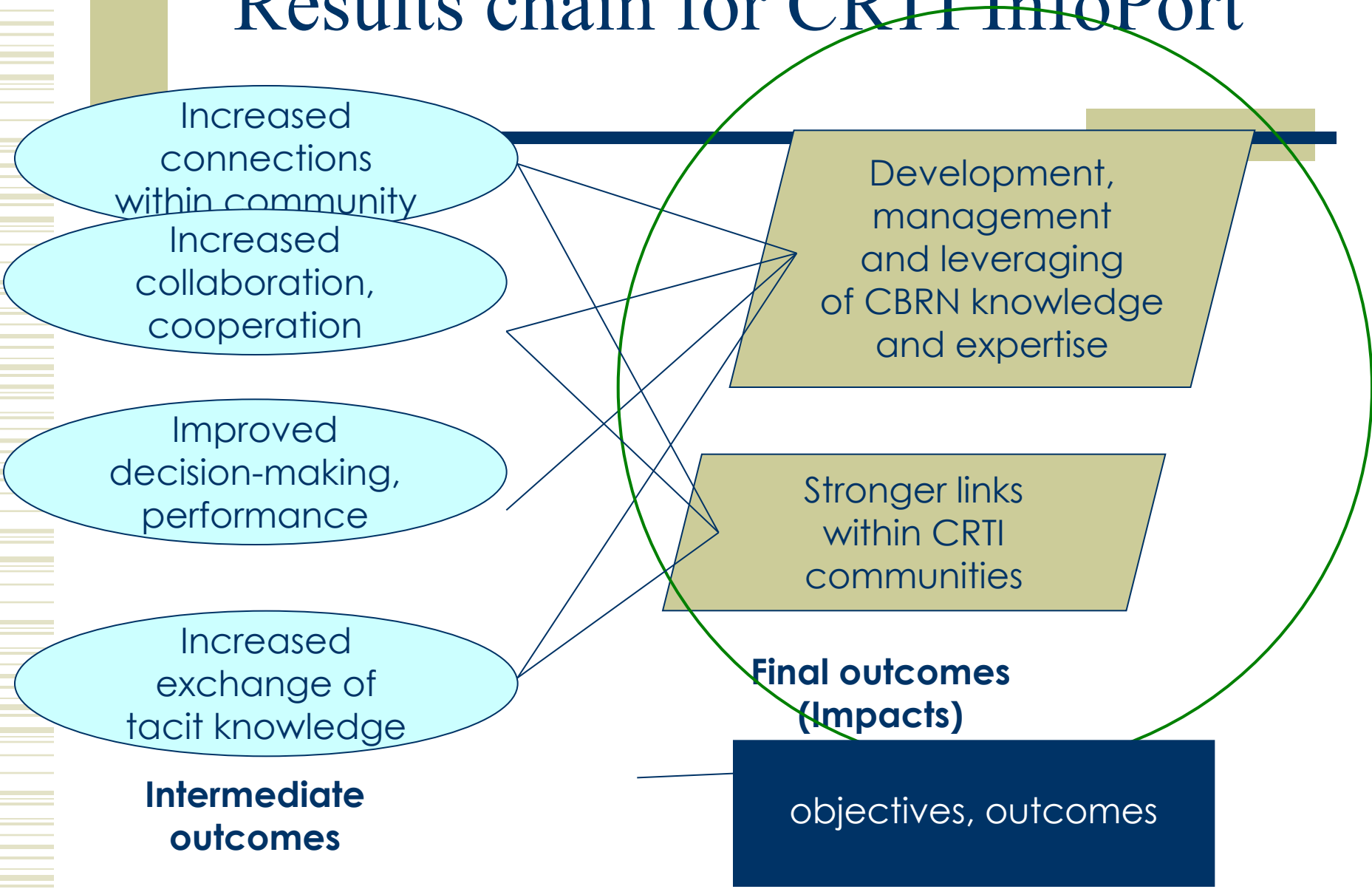
Results chain for CRTI InfoPort



Results chain for CRTI InfoPort



Results chain for CRTI InfoPort



Examples of indicators

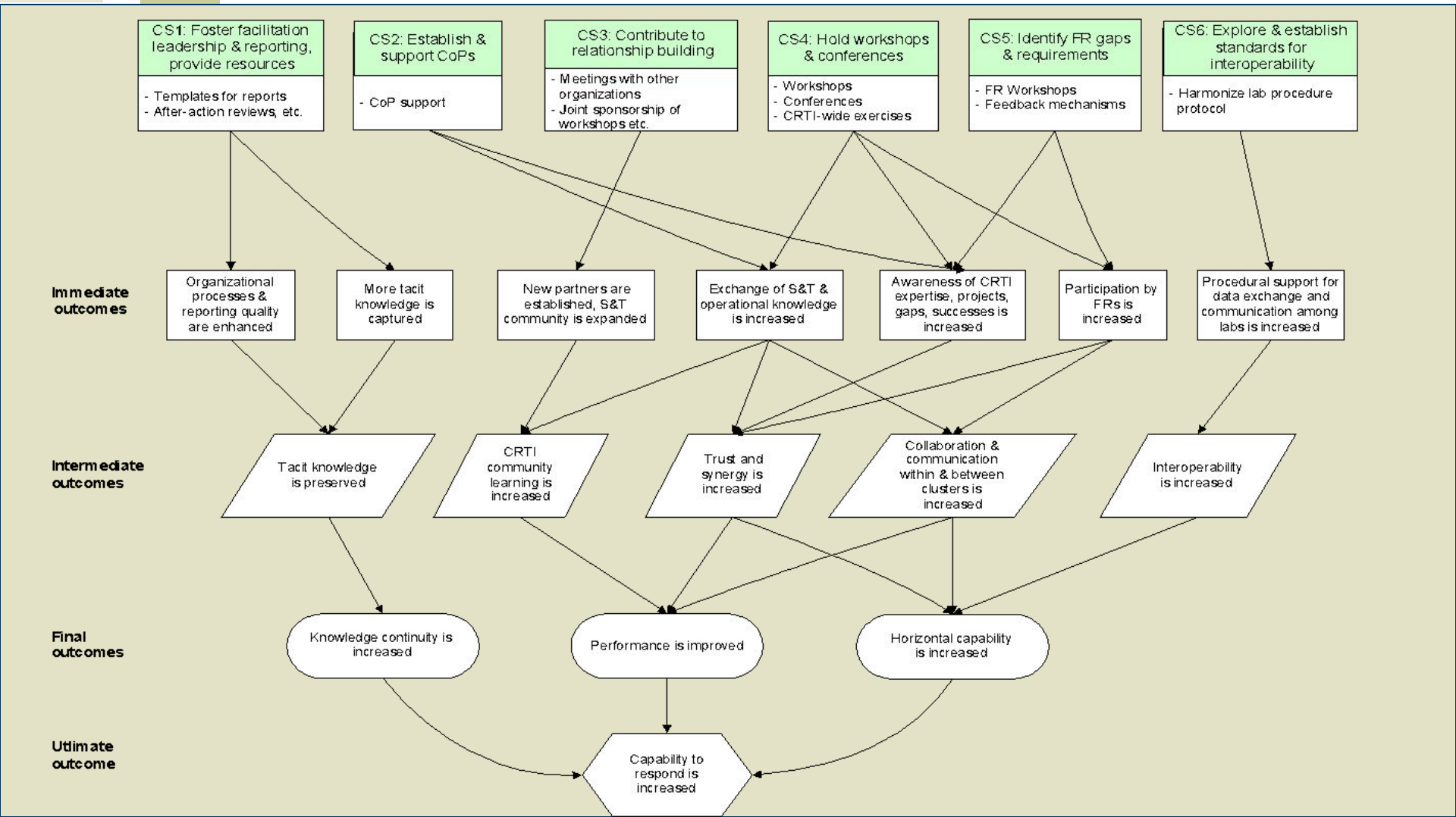
- Quantitative
  - Number of users, hits, downloads
  - Number of available knowledge products
  - Domains of expertise covered in expertise locator
- Qualitative
  - Perceived value of portal, knowledge objects
  - Value of connections made through expertise locator
  - Time saved in solving problems due to use of portal AND/OR examples of problems avoided or quickly solved

Appendix II: SAMPLE RESULTS MAP

PURPOSE:			ORGANIZATION:	
			PROJECT NAME:	PROJECT TIMEFRAME
HOW?		WHAT WE WANT?		WHY?
INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	LONG TERM OUTCOMES OR IMPACTS
INDICATORS				
		Outputs	Outcomes	Long Term Outcomes (Impact)
PEOPLE/GROUPS/COMMUNITIES/SECTORS/INVOLVED				
ASSUMPTIONS AND RISKS				

Source: Plan:Net. Splash and Ripple! Planning and Managing for Results. 2004.

Logic Model: Collaboration Support



Why RBM and not some of the other KM measurement Frameworks?

- Value Chain Scorecard
  - Indicators are quantitative only
- Skandia Navigator
  - Indicators were not all relevant to KM @ CRTI
- Intangible Assets Monitor
  - Presented challenges in linking KM goals to CRTI goals
- Balanced Scorecard
  - Causal relationships in BSC are arguably, in reality, only logical and not causal.

Identifying the Metrics

- Identify metrics for each outcome box in the logic flow
- Example from Collaboration Support: *organizational processes and reporting quality are enhanced*
  - How many after action reviews have been done?
  - Have you participated in writing after action reviews?
  - Do you make use of the (KM designed) templates for reports?
  - Have the templates improved the quality of your reporting?
  - Have these templates enhanced or improved any organizational processes in which you are involved?
  - Have the reports and after action reviews been incorporated into internal document repositories?

Collection Tools

- Electronic qualitative survey (SurveyMonkey)
- Likert scales
- Open ended questions
- Distributed to CRTI members through CRTI's portal
- Follow up with interviews to gather additional anecdotal information on the impact that KM has had on CRTI's ultimate goals

Preliminary findings

Sample findings:

- 100% feel that the KM activities have increased the communication of CRTI information and documentation
- 100% feel their personal network of partners expanded as a result of the KM activities
- 92% agree that the KM activities have provided valuable learning experiences
- 69.3% feel that the KM activities have had an impact on project development
- While 66.7% feel they have centralized access to CBRN S&T through the portal, 53.8% rarely use the portal to accomplish tasks

Some Recommendations

- Measure continuously
- Experiment with different types of methods and approaches – use a combination
- Measure what is strategically important
- Use conservative numbers and keep it simple
- Use different measures for different stakeholders

Some additional references

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- Bukowitz, Wendi and Gordon P. Petrash. "Visualizing, measuring and managing knowledge." Research Technology Management .Jul/Aug (1997): 24-31.
- Dalkir, K., and McIntyre, S. (2011). Measuring intangible assets: Assessing the impact of knowledge management in the S&T fight against terrorism. Chapter 8 in: Identifying, Measuring, and Valuing Knowledge-Based Intangible Assets: NewPerspectives IGI Global, V. Bélén (Ed.). Pages 156-176.
- European Committee for Standardization. European Guide to good Practice in Knowledge Management - Part 4: Guidelines for Measuring KM. CWA 14924-4:2004 (E), 2004.
- Smith, A. "Metrics Guide for Knowledge Management Initiatives.". 2001. Department of the Navy

Next:

- Organizational memory and organizational learning