

Identifying Subject Matter Experts (SMEs) through Knowledge Network Mapping

A Canadian federal department piloted peer-evaluated expertise identification and continuity planning with 379 of its IT staff.

Core Topics

Social Capital, Knowledge Network Mapping, Capability Networks, Knowledge Transfer, Patterns, E-Workplace Systems and Technology, Knowledge Strategy, INFLOW™, KNETMAP™

Key Issue

Knowledge Network Mapping as a Foundation for Continuity Planning

Public service organizations function mostly on the basis of knowledge. Yet this knowledge is often not codified and frequently not valued until it begins to 'leak' through retirement. If knowledge network mapping can identify those individuals deemed by their peers to be subject matter experts in strategically important products, processes and services, then it could potentially be a useful decision support tool for continuity planning.

Issues Addressed:

- Identification of critical skills and expertise (required to deliver the mandate established by the strategic plan);
- Mapping the source of that expertise (a recent reorganization of this department disrupted established task networks and access to known subject matter experts);
- Recognition of a need to establish practical knowledge transfer initiatives (by targeting retirees who are identified by their peers to be key resources in specific knowledge domains).

Objectives:

- Identification of subject matter experts (i.e. where skills and knowledge reside across a recently reorganized workplace) in key disciplines;
- Analyze the dependence on these people for expert advice, and assess the risk to the organization if this resource were lost.

Approach:

- Peer evaluation of colleagues and co-workers through eight queries sent by email over a two week period:

Query Example: From whom do you seek opinions on best practices in risk analysis and conducting a risk assessment?

- Each recipient responded to the queries by selecting from a pick list of names;
- New names (including external contacts) were added to the pick list.

Using the data gathering tool KNETMAP™, data was displayed in real-time in the form of dynamic Web-based knowledge network maps (see Figure 1).

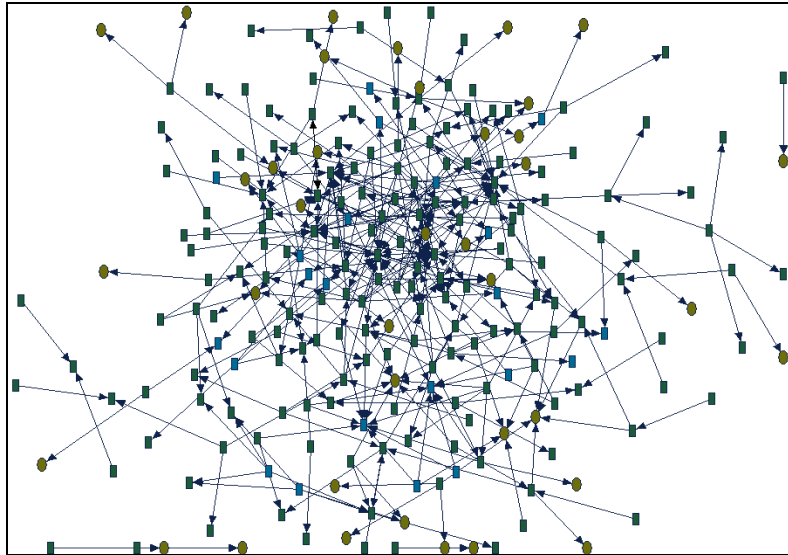


Figure 1: Screen shot of KNETMAP™ knowledge network map

Nodes are color coded by the following attributes. All names are pseudonyms.

■ S -- eligible to retire short-term	■ O -- eligible to retire in short-term/odd situation
■ L -- eligible to retire in long-term	■ N -- not permanent employee
■ C -- consultant	■ X -- all others

Node	Attribute	
Don Topper	■ X	# of incoming links (10); # outgoing links (0)
Alan Rockford	■ S	# of incoming links (15); # outgoing links (0)
Rick Laing	■ S	# of incoming links (12); # outgoing links (0)
Cindy Chelsea	■ X	# of incoming links (11); # outgoing links (1)
Rand Mercer	■ X	# of incoming links (4); # outgoing links (0)
Glen Chester	■ X	# of incoming links (14); # outgoing links (1)
Dale Hart	■ L	# of incoming links (6); # outgoing links (0)
Sally Bingam	■ X	# of incoming links (6); # outgoing links (0)
Lewis Miller	■ C	# of incoming links (9); # outgoing links (0)
Don Belisle	■ X	# of incoming links (5); # outgoing links (0)

***Definition of REACH:** Reach-In measures how influential a node is. The metric looks at both direct and indirect ties. By calculating how many unique nodes seek the advice/expertise/opinion of node X, the influence of node X can be determined. The influence of node X goes up if other influential nodes seek its advice/expertise/opinion. The sphere of influence for node X can be determined by viewing both direct and indirect in/out links surrounding node X -- incoming links show who seeks out node X, while outgoing links reveal who, if anyone, node X seeks for advice/expertise/opinion.

Node Specific Data

Don Topper: incoming link is Cindy Chelsea
 Cindy Chelsea: outgoing link is Don Topper
 Glen Chester: outgoing link is Rand Mercer

Figure 2: Analyzed Data

Results:

- Lists of known subject matter experts in the knowledge domains queried
- Lists of up-and-coming subject matter experts in the knowledge domains queried
- Surfacing of 'surprise' SMEs as key organizational resources

Benefits

- Reduced subjectivity in identifying SMEs due to the peer evaluation approach
- Identified individuals with deep corporate knowledge
- Disclosed emergent communities of practice
- Exposed strategic vulnerabilities related to critical skills assets
- Identified individuals who are isolated
- Provided decision support for targeted training and continuity planning

Conclusion

The data gathered in this pilot revealed many of the 'lynchpins' in the flows of knowledge instrumental to getting things done. Such individuals are generally only manifest in informal networks because information flows do not follow managerial lines. These informal links help circulate information and are responsible for significant activity that sustains the effective functioning of the organization.

References:

Degenne, A. and Forse, Michel (1999), *Introducing Social Networks*, Sage Publications.

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