

Official Knowledge: Validation Mechanisms for Knowledge Management Systems

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March 4, 2009



Abstract

One of the most important roles of a **knowledge management system** is as a filter to verify, authenticate, or justify the knowledge of an organization. The knowledge that passes this filter and is retained or otherwise deemed valuable by the system is **official knowledge**, the knowledge sanctioned by an organization. In this study, **twenty-two articles** that describe typologies of knowledge management systems were reviewed for their insights into knowledge validation. The articles were reviewed in the context of intellectual parentage with each article belonging to one of ten lines of inquiry spawning from five preeminent knowledge management articles. The results of this **metastudy** identify epistemology, knowledge transfer, the application environment, and the social process of sensemaking as valuable considerations for the **design of validation mechanisms**. A checklist of these considerations serves as the primary contribution of this study.



Outline

- Official knowledge and its validation in KMS
- Review of others' work
- Google Scholar methodology
- Citation network, diagram of validation, and checklist
- Revised citation network, comments, and contributions



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Research Perspective: Part I

Knowledge management system: the combination of people, technologies, and techniques that facilitate an organization's use of knowledge¹.

Research Declarations:

- Organizations know
- A systems perspective is required
- KM manages what organizations know through the design of KMS

¹Bhatt, G.D. (2001). Knowledge management in organizations. *J. of Knowledge Mgmt.*, 5(1), 68–75.



What is Official Knowledge?

formal knowledge * working knowledge * common knowledge * conventional wisdom

Knowledge, when it is shared within the auspices of an organization, becomes official knowledge—that which is deemed accurate, approved, or more exemplary than other knowledge.

Validation of official knowledge has three processes:

1. initial validation
2. obsolescence
3. transfer



Validation by Epistemology

The validation of personal knowledge is described by epistemology:

Epistemology	Conclusions	Validation
Empiricism	Objectivity	Experience
Rationalism	Objectivism Objectivity	Logic
Constructivism	Relativism Inter-subjectivity	Belief



Importance of the Study

Initial Validation Given that shared context is vital, how is it generated?

Obsolescence Validation mechanisms provide a means to make continual validation less taxing

Transfer Individuals can avoid misinformation, rumor, and misapplied assumptions by understanding the provenance of knowledge

Without a framework including assumptions about what an organization is and how it generates knowledge, how can research intelligently proceed?



Research Questions

General Questions

RQ1: What are the ways in which KMS can be classified?

RQ2: What can be learned from the literature on KMS regarding validation?

RQ3: What perspectives underly the classifications?

Validation Questions

RQ4: How is knowledge translated to official knowledge?

RQ5: What are the mechanisms to determine if or prevent official knowledge from becoming obsolete?

RQ6: How is official knowledge transferred throughout the organization?



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Official Knowledge Example: The Best Practice

Initial Validation Found through experience to work well

Obsolescence Replaced when a new technique is found to be superior

Transfer Process Absorptive capacity, causal ambiguity, and an arduous relationship strain transfer².

Most popular topics in the literature

- Specific: automatic validation through reasoners
- General: knowledge transfer mania

²Szulanski G. (1996). Exploring internal stickiness. *Strategic Management Journal*, 17, 27–43.



Classifying Knowledge Management Systems

- The Polanyi Branch
- The Nonaka Branch
- The Blackler Branch
- The Nonaka & Takeuchi Branch
- The Davenport & Prusak Branch



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Research Perspective: Part II

The traditional metastudy uses keywords as query terms in exhaustive database searches because the claims of the study depend upon a representative sample of the relevant scholarly literature.

Value	Method
Understand work in context	use citation network
Build upon previous work	include metasyntesis

The purpose of this study is to examine the literature to discover cumulative frameworks within which the knowledge management discipline is developing and to use these frameworks to build an understanding of validation mechanisms for the set of knowledge management initiatives.



Study Search and Retrieval

Ranked list of the five most cited works in knowledge management:

Top Five Citations
Nonaka, I., & Takeuchi, H. (1995). <i>The knowledge-creating company: How Japanese companies create the dynamics of innovation</i> . New York: Oxford.
Davenport, T. H., & Prusak, L. (1998). <i>Working knowledge: How organizations manage what they know</i> . Boston: Harvard Business School Press.
Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. <i>Organization Science</i> , 5(1), 14–37.
Polanyi, M. (1967). <i>The tacit dimension</i> . New York: Anchor Books.
Blackler, F. (1995). Knowledge, knowledge work, and organizations: An overview and interpretation. <i>Organization Studies</i> , 16(6), 1021–1046.



Criteria for Study Inclusion

To be reviewed for inclusion in the study, articles had to be published in a conference or journal that requires peer-review and the articles had to be retrievable by at least one of the keywords.

Keywords
taxonomy, typology, classification, systematization, styles, types, foundation, strategy, school, landscape, framework

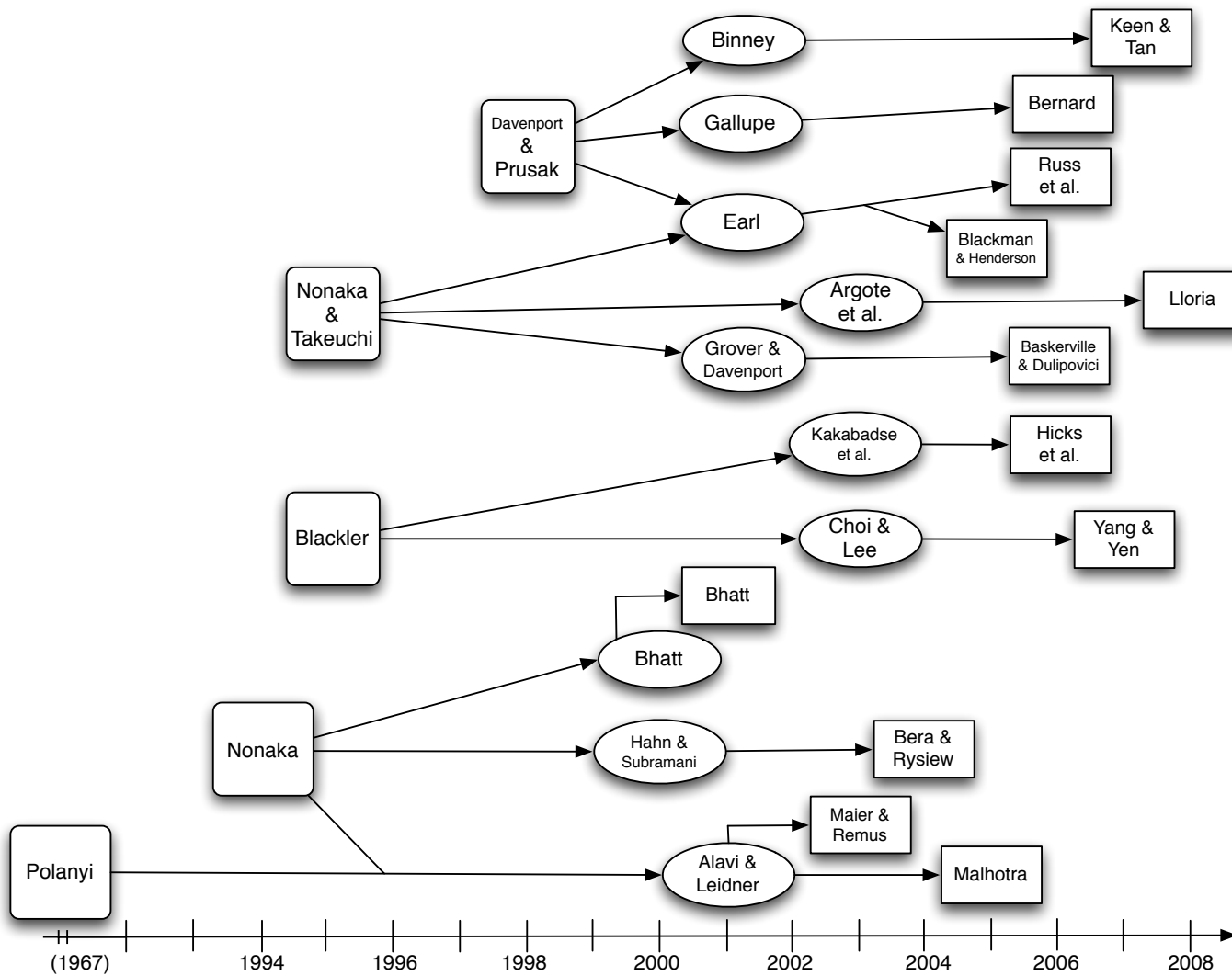
To be included in the study, the article had to present a general-purpose, novel taxonomy describing the nature of KMS. The taxonomy had to be general in nature.



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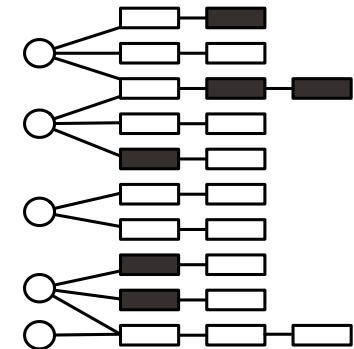




Metastudy: Initial Validation

RQ4: How is knowledge translated to official knowledge?

Deliberate	Emergent
choose codification or personalization	diversity/clarity balance
appropriate incentives	require/discretion balance



Metastudy: Initial Validation

RQ4: How is knowledge translated to official knowledge?

Through deliberate processes:

- A strategic choice between codification and personalization
- Carefully chosen incentives to meet objectives

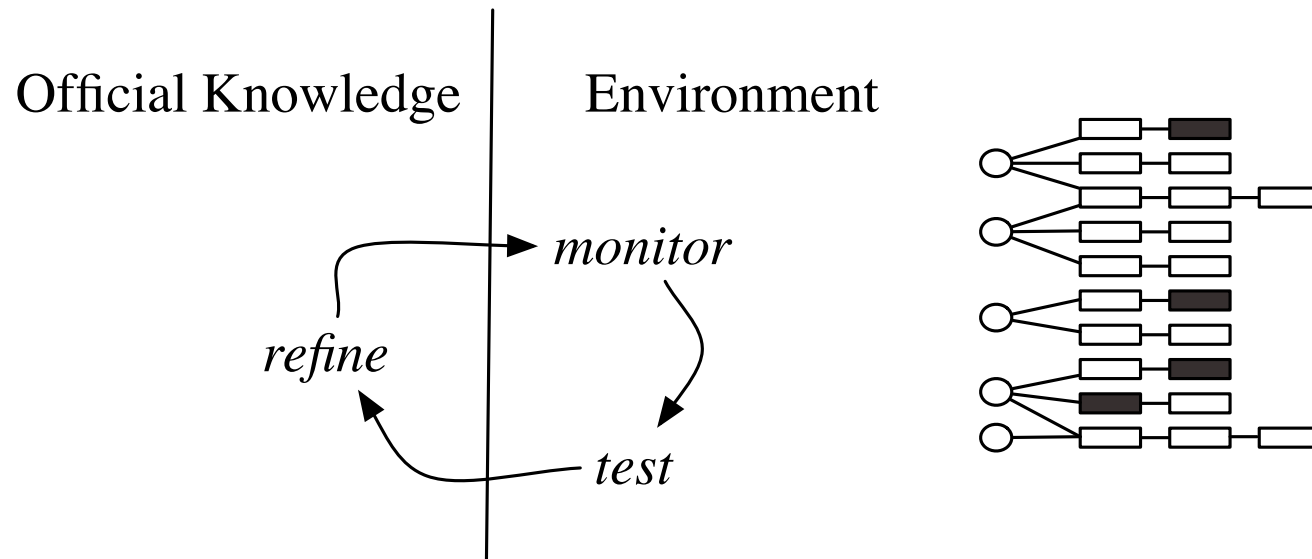
Through emergent processes:

- balance diversity in represented views with clear direction
- balance adherence to official knowledge with individual discretion



Metastudy: Obsolescence

RQ5: What are the mechanisms that prevent official knowledge from becoming obsolete?



Metastudy: Obsolescence

RQ5: What are the mechanisms that prevent official knowledge from becoming obsolete?

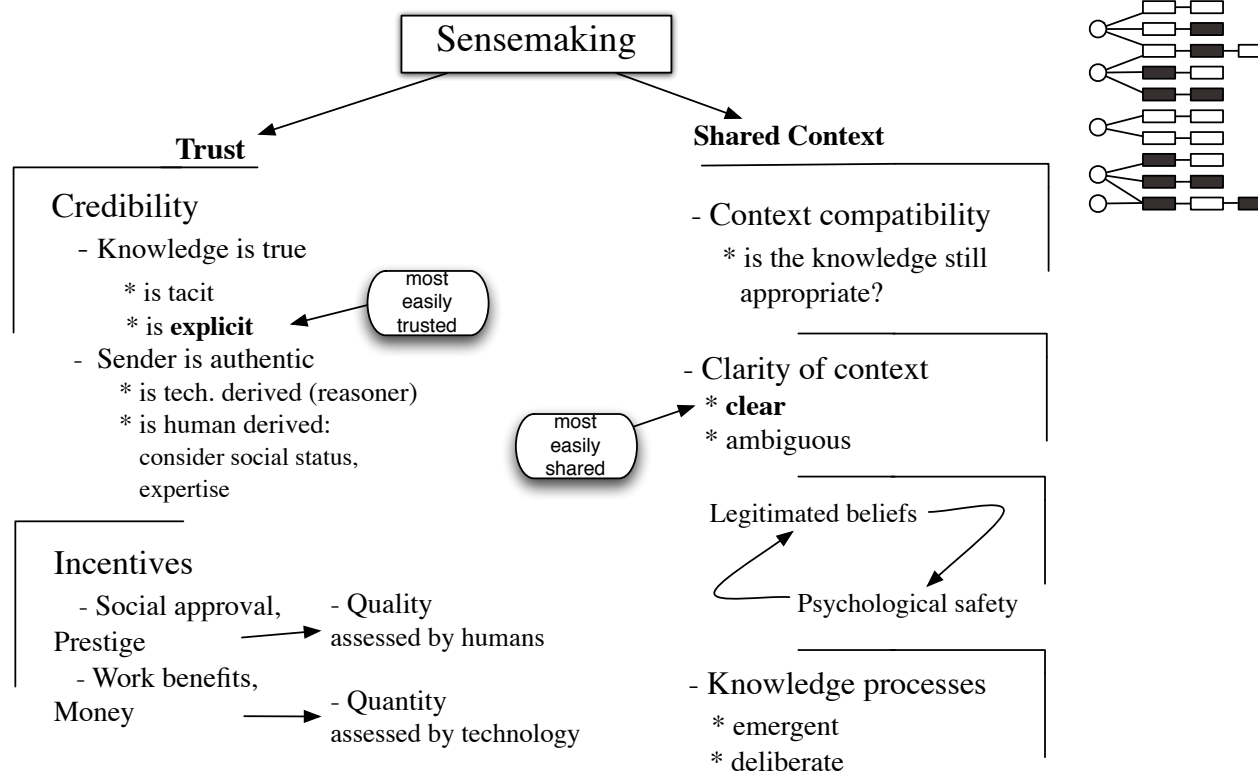
To ease the burden of continual validation:

- Use social norms as incentives so that contributors will maintain their contributions
- Record instances of deviation from official knowledge to track waning applicability



Metastudy: The Transfer Process

RQ6: How is official knowledge transferred throughout the organization?



Metastudy: The Transfer Process

RQ6: How is official knowledge transferred throughout the organization?

Through sensemaking:

- Rather than independently judge accuracy, individuals must **trust** the knowledge sender and the abilities of the system
- The prior knowledge, norms, and beliefs of the sender and receiver must align to produce a **shared context**

By problem-type:

- Techno-centric strategies work best for previously solved problems with a clear context
- Human-centric strategies work best for novel problems with an ambiguous context



Metasynthesis: Epistemology

Epistemology underlies KMS and thus validation standards.

Epistemology	Empiricist	Rationalist	Constructivist
KM Strategy	Techno-centric	Techno-centric	Human-centric
KM Goal	Codification	Codification	Personalization
Knowledge	Explicit	Explicit	Tacit

Techno-centric approaches to knowledge management entail different validation standards than human-centric approaches to knowledge management.



Metasynthesis: Checklist

Validation Mechanisms for Official Knowledge

Types of Validation

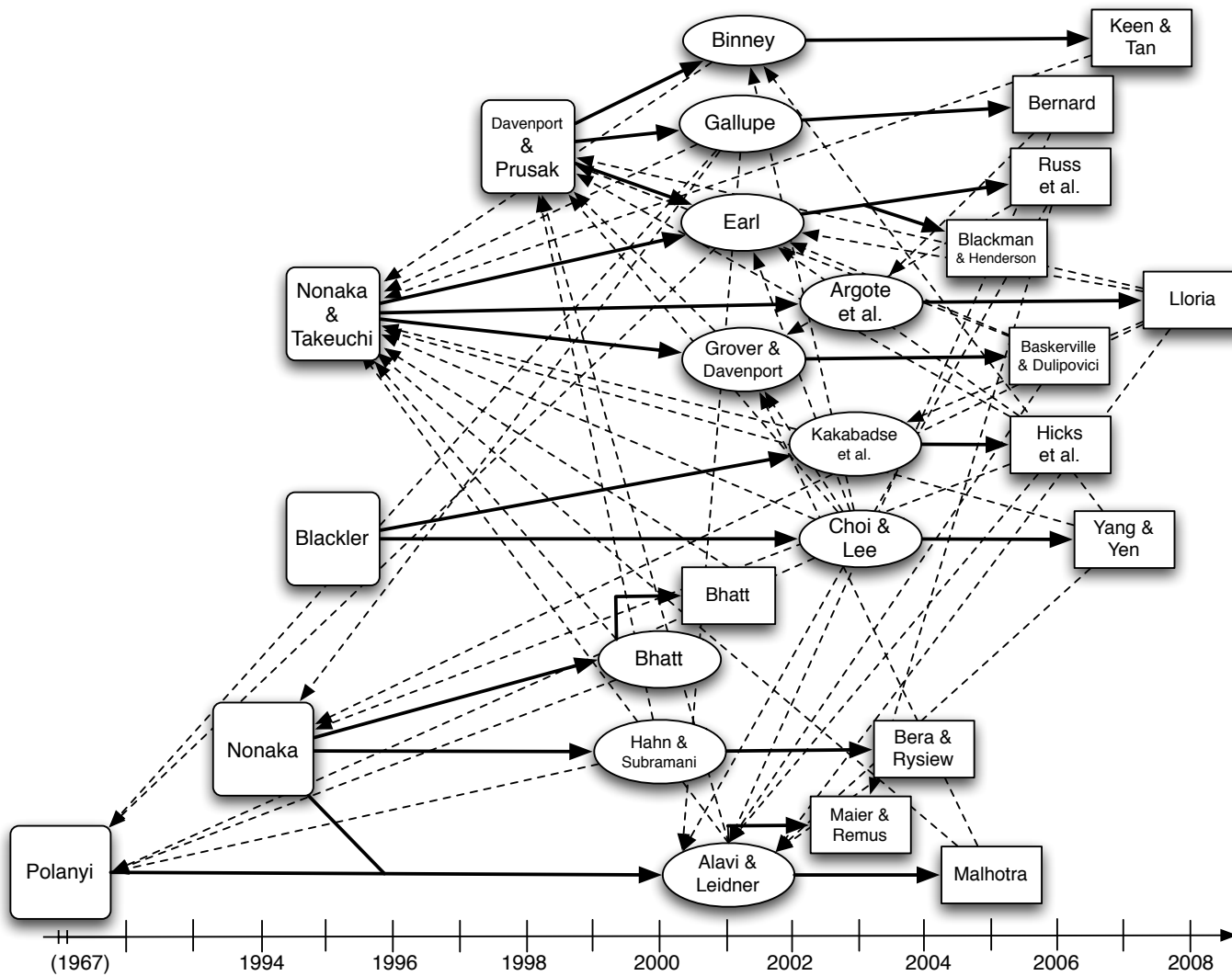
Initial Validation	Obsolescence	Transfer Process
<p>Features:</p> <ul style="list-style-type: none"> • codification • personalization • appropriate incentives <p>Research Topics:</p>	<p>Features:</p> <ul style="list-style-type: none"> • organizational context • external environment <p>Research Topics:</p> <ul style="list-style-type: none"> • provide incentives to maintain • deviation tracking 	<p>Features:</p> <ul style="list-style-type: none"> • sensemaking • problem type <p>Research Topics:</p> <ul style="list-style-type: none"> • sensemaking: trust and incentives • problem type: novel, recognition, clarity of context



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Conclusion

The contribution of this study is a KM philosophy plus a research framework.

KM Philosophy

Organizations know

Systems perspective is needed

KM should design KMS

Research Framework

Official knowledge is organization level knowledge

A KMS is the combination of people, techniques, and technologies

What design features are relevant to validation mechanisms?



Metastudy Articles: First Level Citations

- Alavi, M., & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, 25(1), 107–136.
- Hahn, J., & Subramani, M. R. (2000). A framework of knowledge management systems: Issues and challenge for theory and practice. In S. Ang, H. Kremer, W. J. Orlikowski, P. Weill, & J. I. DeGross (Eds.), *Proceedings of the twenty-first international conference on information science (ICIS 2000)* (pp. 302–312). Atlanta: Association of Information Systems.
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- Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: An integrative framework and review of emerging themes. *Management Science*, 49(4), 571–582.
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- Binney, D. (2001). The knowledge management spectrum—understanding the KM landscape. *Journal of Knowledge Management*, 5(1), 33–42.



Metastudy Articles: Second Level Citations

- Maier, R., & Remus, U. (2003). Implementing process-oriented knowledge management strategies. *Journal of Knowledge Management*, 7(4), 62–74.
- Malhotra, Y. (2005). Integrating knowledge management technologies in organizational business processes: Getting real-time enterprises to deliver real business performance. *Journal of Knowledge Management*, 9(1), 7–28.
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- Hicks, R. C., Dattero, R., & Galup, S. D. (2006). The five-tier knowledge management hierarchy. *Journal of Knowledge Management*, 10(1), 19–31.
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- Blackman, D. A., & Henderson, S. (2005). Know ways in knowledge management. *The Learning Organization*, 12(2), 152–168.
- Bernard, J.-G. (2006). A typology of knowledge management system use by teams. In *Proceedings of the 39th Hawaii international conference on system sciences*. Los Alamitos, CA: IEEE Computer Society.
- Keen, P., & Tan, M. (2007). Knowledge fusion: A framework for extending the rigor and relevance of knowledge management. *International Journal of Knowledge Management*, 3(4), 1–17.





Master's Thesis Defense – Albuquerque, New Mexico – March 4, 2009