

# Systems Thinking and Tools for Knowledge to Action (KTA)

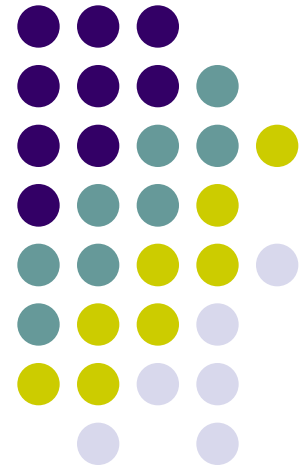
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Allan Best, PhD

Gregg Moor, BA

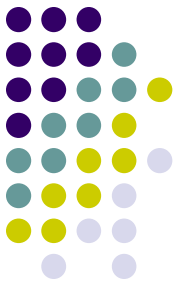
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*InSource*



KT08

June 10, 2008



# Overview

Phase 1 ~ The Lunchbucket

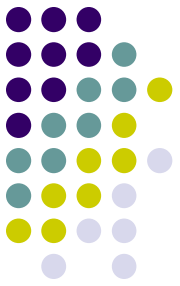
Phase 2 ~ Laying Out the Smorgesbord of Models and Tools

Phase 3 ~ A Banquet - Models, Tools, Comparative Case Studies, Simple Rules

# NCIC Knowledge Integration Framework

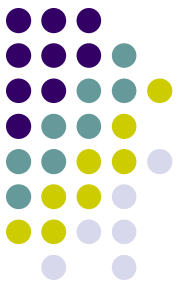


<b>SYSTEM/ POLICY</b>			
<b>TEAM/ ORGANIZATION</b>			
<b>INDIVIDUAL</b>			
	<b>BASIC</b>	<b>CLINICAL</b>	<b>POPULATION</b>



# Sample Strategies

<b>SYSTEM/ POLICY</b>	<ul style="list-style-type: none"><li>● incentives</li><li>● EHRs</li><li>● report cards</li></ul>	<ul style="list-style-type: none"><li>● multi-component intervention</li><li>● interagency networks</li><li>● supportive funding policies</li><li>● KE platforms linking producers and users</li></ul>
<b>TEAM/ ORGANIZATION</b>	<ul style="list-style-type: none"><li>● detailing</li><li>● office systems</li></ul>	<ul style="list-style-type: none"><li>● communities of practice/knowledge networks</li></ul>
<b>INDIVIDUAL</b>	<ul style="list-style-type: none"><li>● active training</li><li>● on-demand evidence tools</li><li>● self-monitoring</li><li>● follow-up</li></ul>	<ul style="list-style-type: none"><li>● user friendly MIS</li></ul>
	<b>CLINICAL</b>	<b>POPULATION</b>



# Generations of Knowledge Thinking

## 1: Linear Models (1960s-mid 90s)

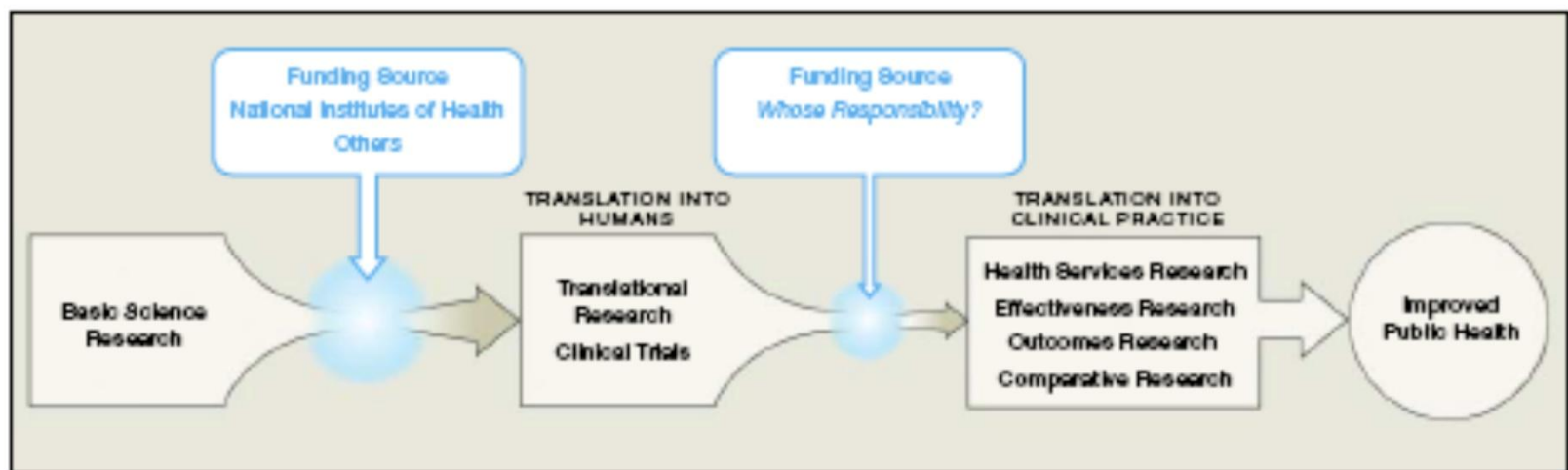
### LANGUAGE

- Dissemination
- Diffusion
- Knowledge transfer
- Knowledge uptake

### KEY ASSUMPTIONS

- Knowledge is a product
- Key process is a handoff from research producers to research users
- Knowledge is generalizable across contexts
- Application is a function of effective packaging

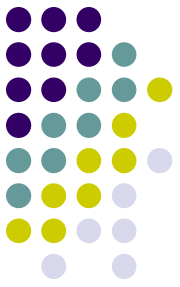
# Linear Models ~ Two Stage Translational Research



Clinical research can be viewed as encountering 2 separate roadblocks on the way toward improving public health. These 2 translational blocks have different factors creating each but whereas the National Institutes of Health has been consistently targeting the bench-to-bedside block, no one is taking responsibility for the second, which is integrally tied with the funding of the health care delivery system.

# Generations of Knowledge Thinking

## 2: Relationship Models (Mid-90s to present)

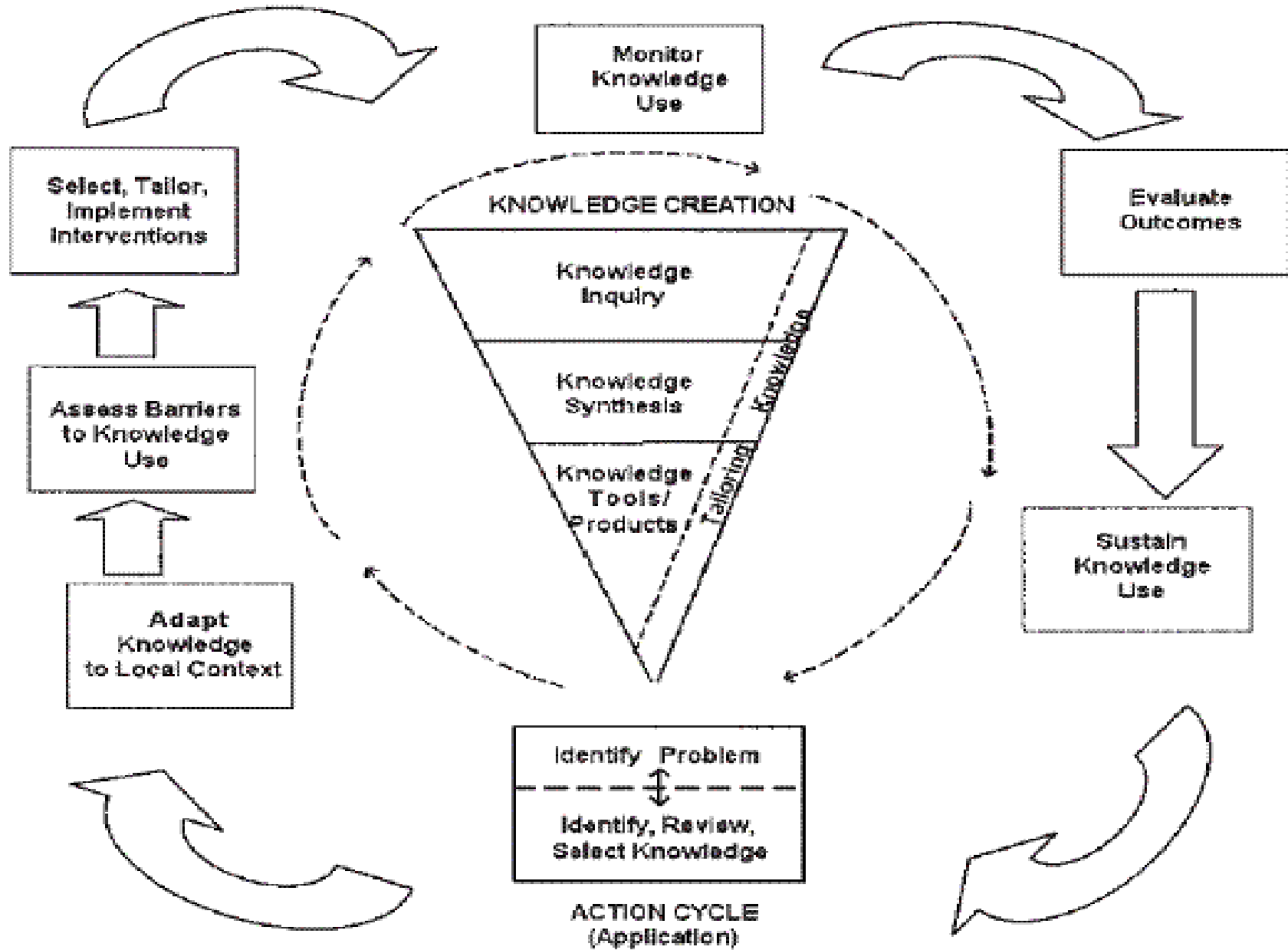


### LANGUAGE

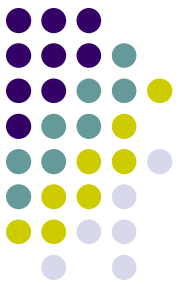
- Knowledge exchange

### KEY ASSUMPTIONS

- Knowledge from multiple sources research, theory, and practice
- Key process is interpersonal, involving social relationships
- Networks of research producers and research consumers
- Collaborate thru production-synthesis-integration cycle
- Knowledge is context-linked, and must be adapted to local setting
- Degree of use is a function of effective relationships and processes







# Generations of Knowledge Thinking

## 3: Systems Models

### LANGUAGE

- Knowledge integration
- Knowledge translation
- Knowledge mobilization
- Knowledge exchange and uptake

### KEY ASSUMPTIONS

- Knowledge cycle is tightly woven within priorities, culture, and context
- Explicit and tacit knowledge need to be integrated to inform decision making and policy
- Relationships mediate throughout the cycle, and must be understood from a systems perspective, in the context of the organization and its strategic processes
- Degree of use is a function of effective integration with the organization(s) and its systems

# SYSTEM ANTECEDENTS FOR INNOVATION

Structure	Absorptive capacity for new knowledge	Receptive context for change
Size/maturity	Pre-existing knowledge/skills base	Leadership and vision
Formalisation	Ability to find, interpret, re-codify and integrate new knowledge	Good managerial relations
Differentiation	Enablement of knowledge sharing via internal and external networks	Risk-taking climate
Decentralisation		Clear goals and priorities
Slack resources		High quality data capture

## SYSTEM READINESS FOR INNOVATION

- Tension for change
- Innovation-system fit
- Power balances (supporters vs opponents)
- Assessment of implications
- Dedicated time / resources
- Monitoring and feedback

## THE INNOVATION

- Relative advantage
- Compatibility
- Low complexity
- Trialability
- Observability
- Potential for reinvention
- Risk
- Task issues
- Nature of knowledge required (tacit/explicit)
- Technical support

## COMMUNICATION AND INFLUENCE

### DIFFUSION (Informal, unplanned)

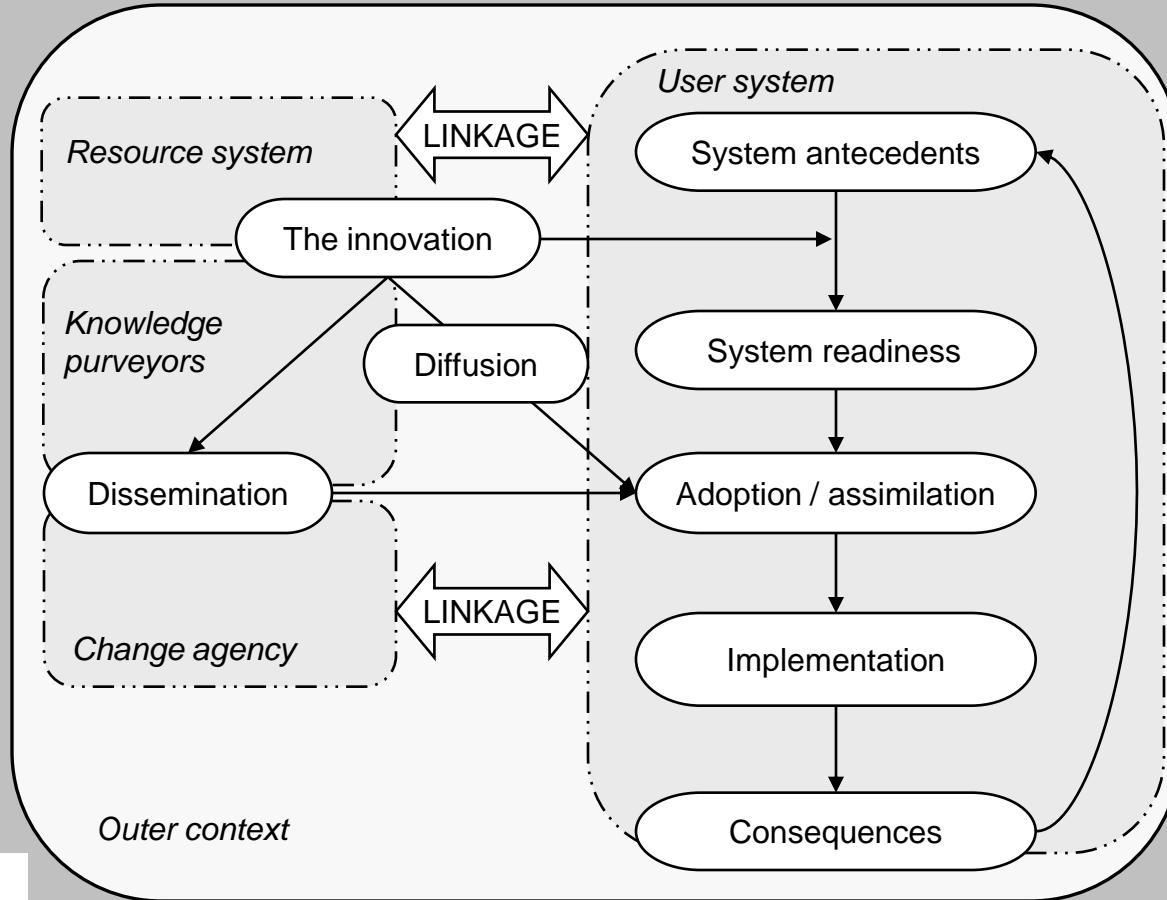
- Social networks
- Homophily
- Peer opinion

- Marketing
- Expert opinion
- Champions
- Boundary spanners
- Change agents

### DISSEMINATION (formal, planned)

## THE OUTER CONTEXT

- Socio-political climate
- Incentives and mandates
- Inter-organisational norm-setting & networks
- Environmental stability



## THE ADOPTER

- Needs
- Motivation
- Values and goals
- Skills
- Learning style
- Social networks

## ASSIMILATION

- Complex, non-linear process
- 'Soft periphery' elements

## THE IMPLEMENTATION PROCESS

- Decision-making devolved to front line teams
- Hands-on approach by leaders and managers
- Human resource issues, especially training
- Dedicated resources
- Internal communication
- External collaboration
- Reinvention/development
- Feedback on progress

### LINKAGE

#### Design stage

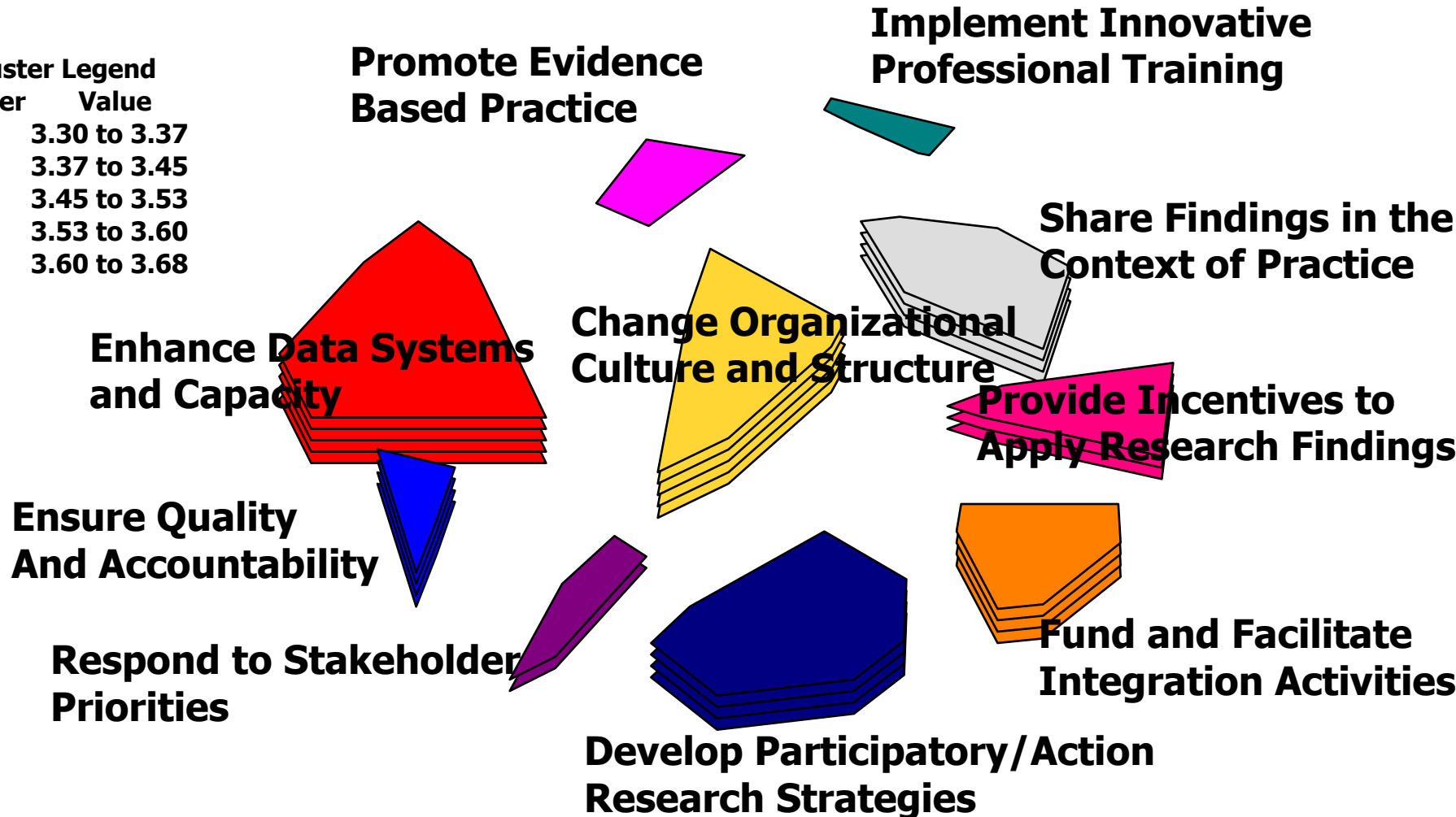
- Shared meanings and mission
- Effective knowledge transfer
- User involvement in specification
- Capture of user-led innovation

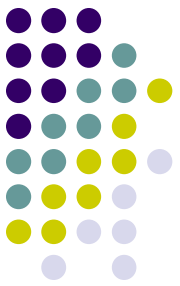
#### Implementation stage

- Communication and information
- User orientation
- Product augmentation e.g. technical help
- Project management support

# Clusters and Importance Ratings

Cluster Legend	
Layer	Value
1	3.30 to 3.37
2	3.37 to 3.45
3	3.45 to 3.53
4	3.53 to 3.60
5	3.60 to 3.68





## Phase 2 ~ Smorgesbord

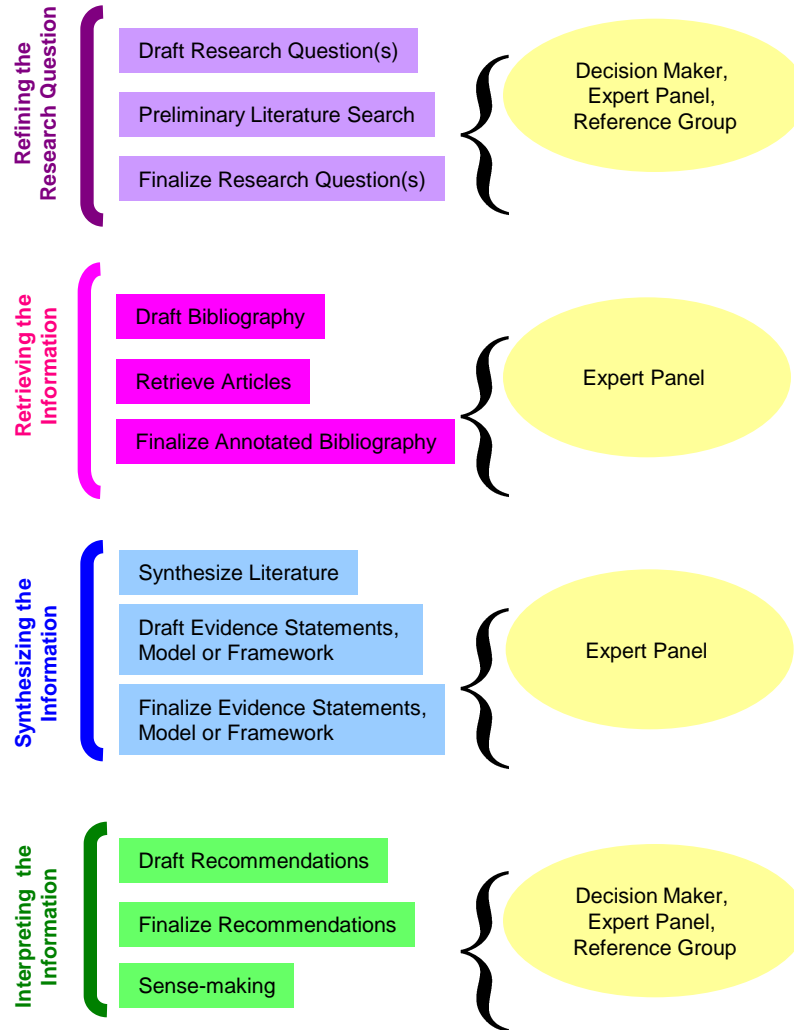
- Metanarrative review of conceptual models for KTA (with Craig Mitton and Trisha Greenhalgh)
- Refinement of problem-based methods for systems thinking (e.g. rapid reviews, social network analysis)

# Metanarrative Review Questions

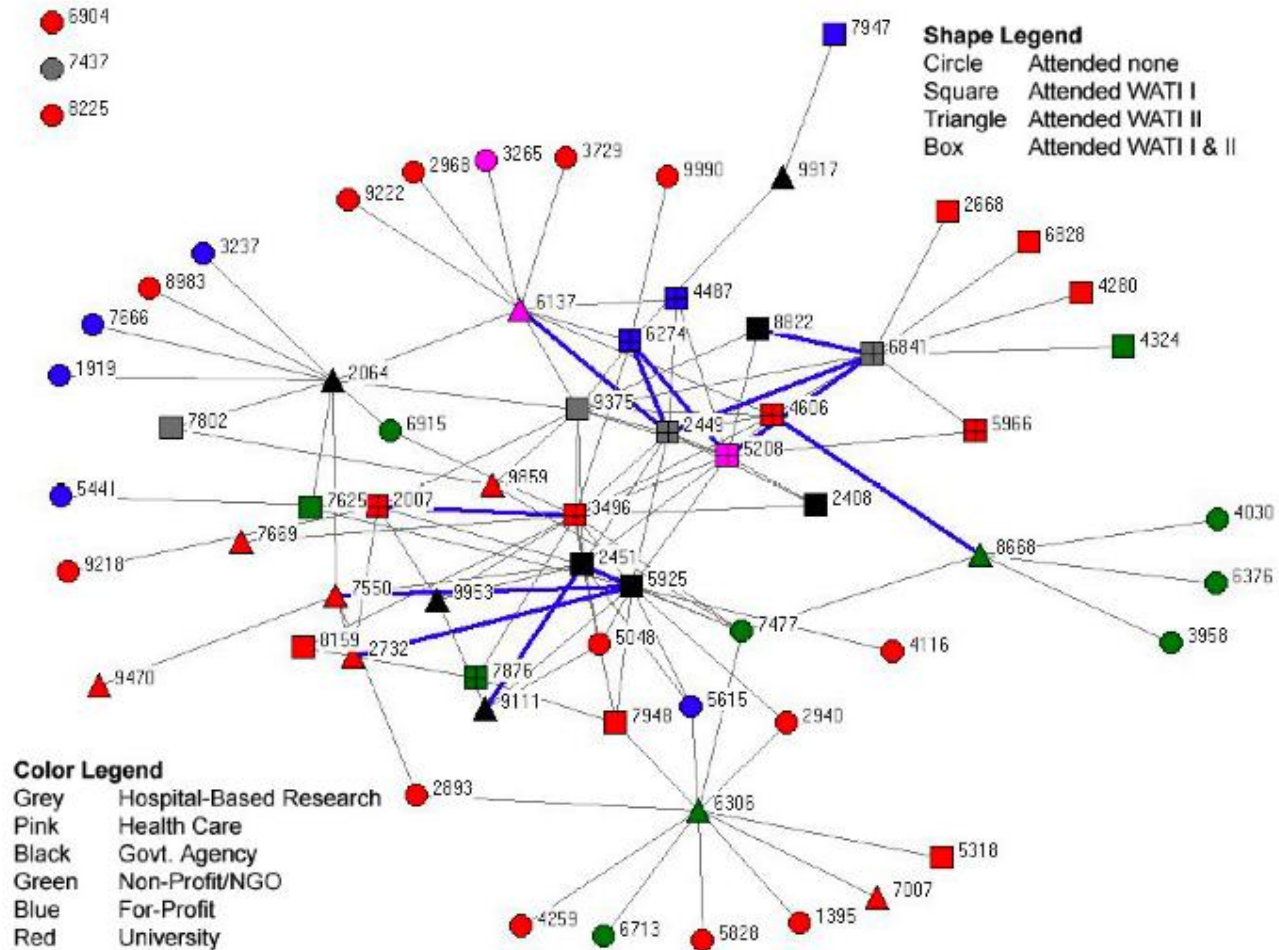


1. Distinct “research traditions”?
2. Nature and strength of theoretical principles?
3. Important distinguishing features?
4. How address contextual factors?
5. How tradition developed over time?
6. What criteria might guide selection and refinement of the best model in a specific decision context?

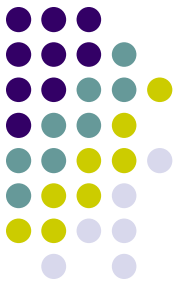
# The Rapid Review Process



# Social Network Analysis: Web Assisted Tobacco Interventions



Norman & Huerta, Implementation Science, 2006, 1 (20), 1-11.



## Phase 3 ~ Banquet

- May 29 workshop on organizational design
- Cohesive community of practice
- Planned international comparative case studies
- Indepth studies of how organizational design affects KTA in practice