



Center for
Technology in Government

Electronic Governance and Organizational Transformation

Tutorial and Workshop

ICEGOV 2007

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Understanding terms

- Traditional organizational literature influenced by the Weberian research stream sees the organization as a nexus of structure, standard routines, and procedures geared to greatly reduce internal and external uncertainty, provide stability, and organizational self-perpetuation independent from individual human agents.
- Newer contributions portray the organization as a locus of and a means for orchestrated and controlled adaptation.

Scholl, 2005

- **Organizational transformation** is a radical and fundamental type of change in organizations.
 - http://www.managementhelp.org/org_chng/trnsform/trnsform.htm

Understanding terms

- E-government has been conceptualized as the intensive or generalized use of information technologies in government for the provision of public services, the improvement of managerial effectiveness, and the promotion of democratic values and mechanisms.

Luna and Gil-Garcia, 2004



Understanding terms

- Digital government, e-government, e-governance: all are terms that have become synonymous with the use of Information and Communications Technologies (ICTs) in government agencies.
- Regardless of the label, digital government has become a prominent strategy for government administrative reform.



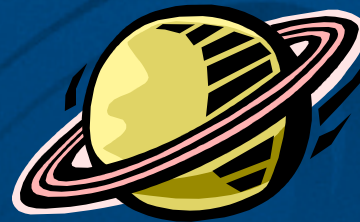
Information and Communications Technology (ICT) Choices

ICT choices are among the most complex and expensive decisions made by managers

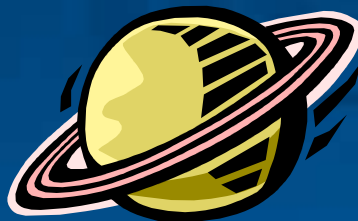


Our world (s)

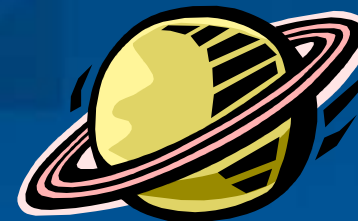
Technology
10,000 mph



**Organization &
management**
1000 mph



Public policies
10 mph



Why bother?

- \$100 billion per year - just in the U.S. Federal Government
- 8 in 10 initiatives go wrong in some way
- Public and political pressure to perform is often tied to information systems
- Promise (and promises) of e-government



Innovation

- An idea or behavior perceived as new to the individual or adopting organization. (Rogers, 1972, Kanter, 1983, Damanpour, 1996)
- The generation, acceptance, and implementation of new ideas, processes, products, or services. (Kanter, 1983)

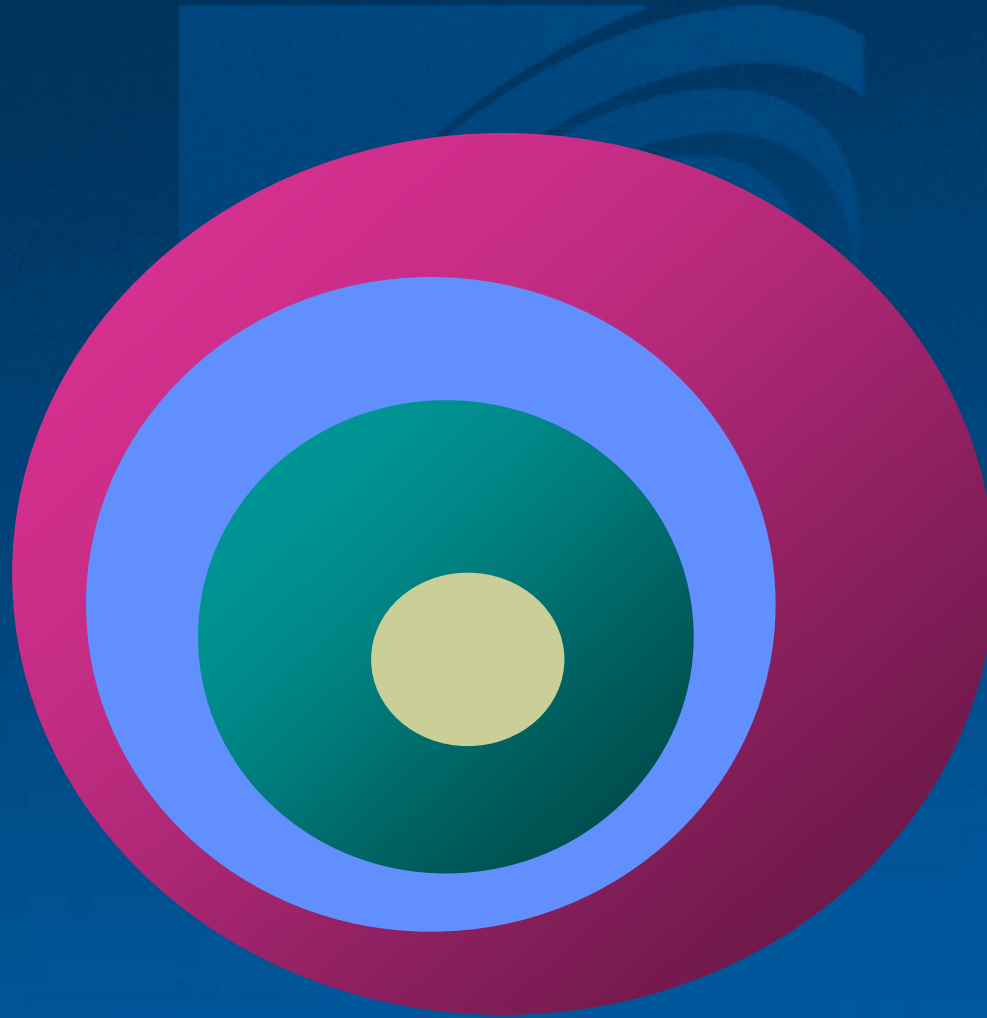


Innovation and Risk

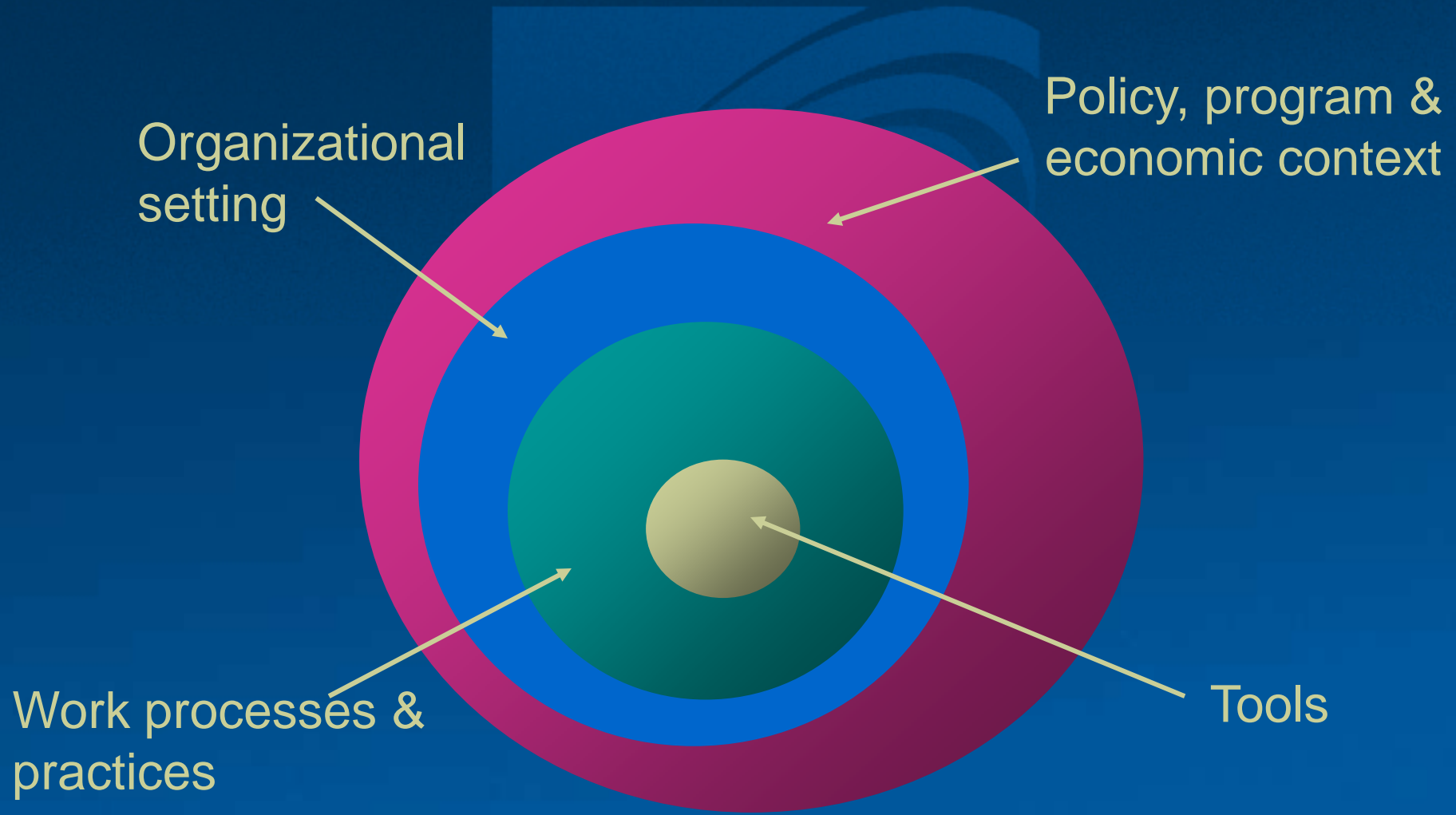
- Innovation characteristics interact with organizational characteristics
- Uncertainty results from the lack of adequate knowledge about the interaction
- Risk results from uncertainties about the consequences of change efforts



Why is ICT innovation so risky?



Layers of complexity



Sources of risk in ICT

- Failure to understand context
- Initial (or most) focus on technology instead of work processes and goals
- Underestimating complexity
- Ignoring variation and diversity
- Using 'command' models of leadership
- Inadequate amounts & kinds of communication
- Lack of trust (and trustworthiness)
- Lack of constituency



Risks to government transformation

- Environment
 - divided authority, multiple stakeholders
- Accountability
- Bottom line
- Willingness to pay for *better* decision making
- Limits on discretion
- Media oversight



Challenges

“ Many of the barriers to realizing the benefits of IT are not technical, but rather occur when social, political, or legal issues arise as attempts are made to deploy and adopt the IT and its applications.”

- PITAC Interim Report, August 1998



Evolution of IS research

- Early research highly focused on technical elements
- Overtime began to consider the role of the organization and the user
- Began to understand that no one set of principles holds across all organizations and all technologies.
- New focus on nuances of specific technologies within specific places, at specific times.
- Recognition context matters.

Conceptualizations of IT

- Tool view of technology
 - The engineered artifact, expected to do what designers intend it to do.
- Proxy view of technology
 - focus on one or a few key elements in common that are understood to represent or stand for the essential aspect, property or value of the information technology.

Conceptualizations of IT

- Ensemble view of technology
 - focus on the dynamic interactions between people and technology
- Computational view of technology
 - interested primarily in the capabilities of the technology to represent, manipulate, store, retrieve, and transmit information.

Orlikowski and Iacono, 2001





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The World Trade Center Response

A case of egovernment and
organizational transformation:
An ensemble view of technology

GIS Potential

- Some of the most impressive advantages of geo-spatial data are derived from the power of bringing together geographic data covering territories that may well be administered by different organizations and from layering geographic data with other social and demographic data.



Challenges

- Building the infrastructure necessary for interoperability and integration has been challenging
 - Technical capabilities are available
 - Organizational, institutional, and political factors are powerful barriers.

Crisis as a Catalyst

- Structuration theory as a lens to argue how the WTC crisis was a catalyst for a change in the conceptualization of GIT for emergency response, and consequently for interoperability and interorganizational GITs



GIS: Potential Vs Reality

- Data expensive to acquire
- Jurisdictional problems
- Proprietary data with competitive value
- Creating common formats, meta-data, etc.



Impact of WTC

- GIS now seen as vital to homeland defense and security

“Whereas: on September 11, 2001, and in the days and months that followed, geographic information technology was a crucial tool in facilitating the disaster recovery efforts at the World Trade Center and, today, its role as an integral component of emergency services and homeland security continues to grow...” NY State Proclamation declaring Sept. 25, 2002, Geographic Information Systems Day



What Happened?

- A precipitating crisis
- Strong pre-existing networks of relationships
- Pre-existing professional norms
- Sharing interpretive schemas



From NYCMap to Integrated Data Capabilities

- NYCMap – a core data set and a common coordinate system
- 5 years in the making, compiled from 7500 aerial photographs
- A framework for presenting fundamental geographic features upon which many additional layers of data might be added



Pre-existing Relationships

- NYCMap lost in destruction of NYC Emergency Operations Center
- Copy obtained from professor
- Emergency Mapping and Data Center staffed by GIS professionals, assembled from pre-existing GISMO user group



Emergency Mapping and Data Center

- Physically assembled tool makers with tool users
 - a group of GIS staffers from a variety of organizations, each with expertise and access to resources that would normally be separated.
 - GIT staff with traditional units of emergency first responders, police, firefighters, medical teams etc. in pier 92.



Applying Professional Norms

- GIS staff talk to users

“...we never envisioned ourselves as almost in a first responder capacity. And then we hadn't thought about, well, what does a first responder need going on to a site? So our consciences just weren't there...., it's an axiom of IT ... that you have to talk to the user. O.K., so we followed that and said, O.K., let's talk to the users. And as we talked to the users, I mean, you know, we can do this, what do you need? They said well, we need this, we need this...ohh...we need that.



Sharing Interpretive Schemas

- GIS staff began to understand needs of first responders

“And they kept on telling us and then we started to put our heads into their heads and then the imaginative process began and ohh and then we began to be able to anticipate what they might need and started to make decisions based on our new level of consciousness. And that iterative back and forth started really early. . . . And pretty soon we were really cooking. “



Sharing Interpretative Schemas

- First responders began to understand what GIS could do

“As people learned more about what we were able to do they started asking “Can you put this information on the map in relation to the streets?’ Such features included command posts for the fire department or the different things that needed to be set up to support the search-and-rescue operation.”



Sharing Interpretive Schemas

- Emergency Mapping and Data Center asked to do more than just make maps

“[e]arly on we thought, well, we're the mapping guys...whatever data you have we'll create a nice picture that'll help you. And then we were being asked to do way in excess of just producing a map. We were asked to integrate data, to represent it on a map, to analyze it, to do a lot more kinds of things to develop applications and to solve problems that we never imagined. So we became the emergency mapping and data center We sort of dubbed ourselves as the deliverer of that data and particularly integrated data from all these different silos generating the data. ... And all became products....”



Sharing Data

- Fulfilling potential of GIS meant finding data to add to the base map, which was
 - “located on desktops across the city. The GIS team had to go to where the data was, collect it -- often on disk – and import it into the GIS laptops and desktops”
- Integrated data made it possible to make information about safe zones available to the public through EMOLS (Emergency Management Online Locator System)



Sharing Data

- “We were building data on electrical outage, water outage, gas outage, steam outage, telephone outage. We were assessing vehicle and pedestrian access to the area south of Canal St. We were assessing subway access as well as access via river crossings.
- All of those items became maps that we posted to the Web. By week two we had an interactive mapping application, which was an adaptation of an application Office of Emergency Management already had developed with our assistance.
- People could go in by the address of the building they were interested in below Canal St. and find out what zone that building was in and whether they could travel to it and work in it or not. “



The LIDAR Story

- Capturing images and data from the air began on first day of the crisis
- LIDAR (Light Detection and Ranging) designed originally to collect topographic data
- Laser scanning system mounted on an aircraft measures the round trip travel time of a laser pulse from the aircraft to the ground, making it possible to precisely measure spot elevations, from which accurate 3 dimensional images can be constructed.



LIDAR

- First responders didn't know about it
- Many issues preventing city and local government from developing remote sensing capabilities: budgetary, institutional, political, data related

“...cities don't have a suite of remote sensing systems available to them.”



LIDAR

- New York State GIS collaborating with New York City GIS

“...I don't think we asked for LIDAR. It was really suggested, because we didn't know anybody who had that technology.

- LIDAR offered by Earthdata Systems
- LIDAR provides a view through the smoke

“...what the LIDAR sensors did was provide us a first clear shot of the damage at ground zero. Because at the frequency that the LIDAR is firing, the smoke is transparent. So the photographic images that we'd gotten before were shrouded in the smoke. And we didn't have a three-dimensional view of it. “



LIDAR

- Profound impact on responders

“...I still remember creating that LIDAR image on the nineteenth. I got the data; we printed it out and brought it to the firehouse and to the Pier 92 and the firemen, you know, they stood around staring at it silently...there was about a half a dozen of them. And then suddenly they understood what it was, you know, even though they'd never seen this technology before, it started to hit home. And they could recognize the different mounds and the pits and where their guys were working in different parts of the image. And I think it became a really important tool for organizing their thinking and orchestrating the response to the whole crisis.”



Organizational transformation

- Some of the most successful activities rested on years of relationship and trust building among key individuals
- Public-private-nonprofit cooperation was unprecedented
- Familiarity and competence mattered
- Information continues to play a powerful role in traditional rivalries



Organizational transformation

“I would say that the World Trade Center incident, September 11, had a lot to do with being a catalyst for the recognition of a significant contribution that geo-spatial data makes to emergency responseNow, would I be sitting here in an interagency geo-spatial preparedness team had September 11 not happened? I for sure would not be sitting here”



Discussion

- Ensemble view of technology
 - Focus on the dynamic interaction among people and technology
- Is this broader conceptualization of IT (ICTs) useful for understanding and managing the risks of ICT innovation in your egovernment initiatives?
- How and why or why not?
- Can you share a case story?



Three Topic Areas in Electronic Governance and Organizational Transformation

- Network organizations
- Information and knowledge sharing networks
- Capability for information sharing



Network Organizations



Center for
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UNIVERSITY AT
Albany
STATE UNIVERSITY OF NEW YORK

Defining Network Organizations

- “Any collection of actors that pursue repeated, enduring relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange.” (Podolny & Page, 1998, p.59)



History of Network Organizations

- 1946- Weber's ideal bureaucracy: based on the "principle of office hierarchy and levels of graded authority"
- 1990- W.W. Powell identified the network organization as an alternative form of economic organization that is separate from market and hierarchy



Two Traditions in the Study of Networks

- Tradition 1: emerges from policy studies literature and focuses on collaboration among bureaucrats, interest groups, and target populations for policy formulation and implementation.
- Tradition 2: emerges from organizational studies literature and investigates the use of non-hierarchical, non-market forms of organization in the public sector as an alternative to traditional bureaucracy.

Advantages of Networks

- Enhances the ability to transmit and learn new knowledge
- Adaptability to unexpected environmental changes
- Better control of resource dependencies
- Alleviates external constraint or uncertainty by strengthening relationships with the source of dependence



Role of the Manager in a Network

- Activating: the process of identifying participants and stakeholders in the network.
- Framing: establishing and influencing the operating rules of the network.
- Mobilizing: inducing individuals to make a commitment to the network.
- Synthesizing: the enhancement of conditions for favorable, productive interaction among network participants.
- (Agranoff & McGuire 2001)
- *The challenge of normal times...*





Information and knowledge sharing



Information as a core commodity

- Information is one of the most valuable resources in government for achieving a wide range of objectives.
 - Public services
 - Crisis and disaster response
 - Monitoring
 - Performance measurement
 - Citizen participation

New understanding about information

- Government leaders are finding the information needed to plan, make decisions, and act is often held outside their own organizations, collected for different reasons, and held in disparate formats.



As a consequence...

- These leaders are turning to information sharing as a strategy for maximizing the value of information in providing services, responding to problems, measuring performance, and engaging citizens.



Pressure to transform current capabilities

- Environmental factors creating pressures for organizations to improve information sharing capabilities
 - globalization
 - increased security concerns
 - rapid technological change
 - demands of knowledge work
 - government reforms

Information and Knowledge Sharing

- In the government sector these forces are recognized in
 - Analyses of security needs
 - Enterprise architecture developments
 - Government information studies
 - Intergovernmental information sharing programs
 - Disease prevention efforts, such as the international response to the SARS epidemic .



Information sharing...

- Is a critical component in the design and implementation of several advanced information technologies
- Involves phenomena and theoretical frameworks in several disciplines
- Is a lynch pin in a substantial range of information uses in critical public policy areas such as public safety, environmental protection, crisis response and management, and health care.



Benefits of information sharing

- Increased productivity
- Improved decision-making
- Reduced costs
- Increased revenues
- Integrated service delivery

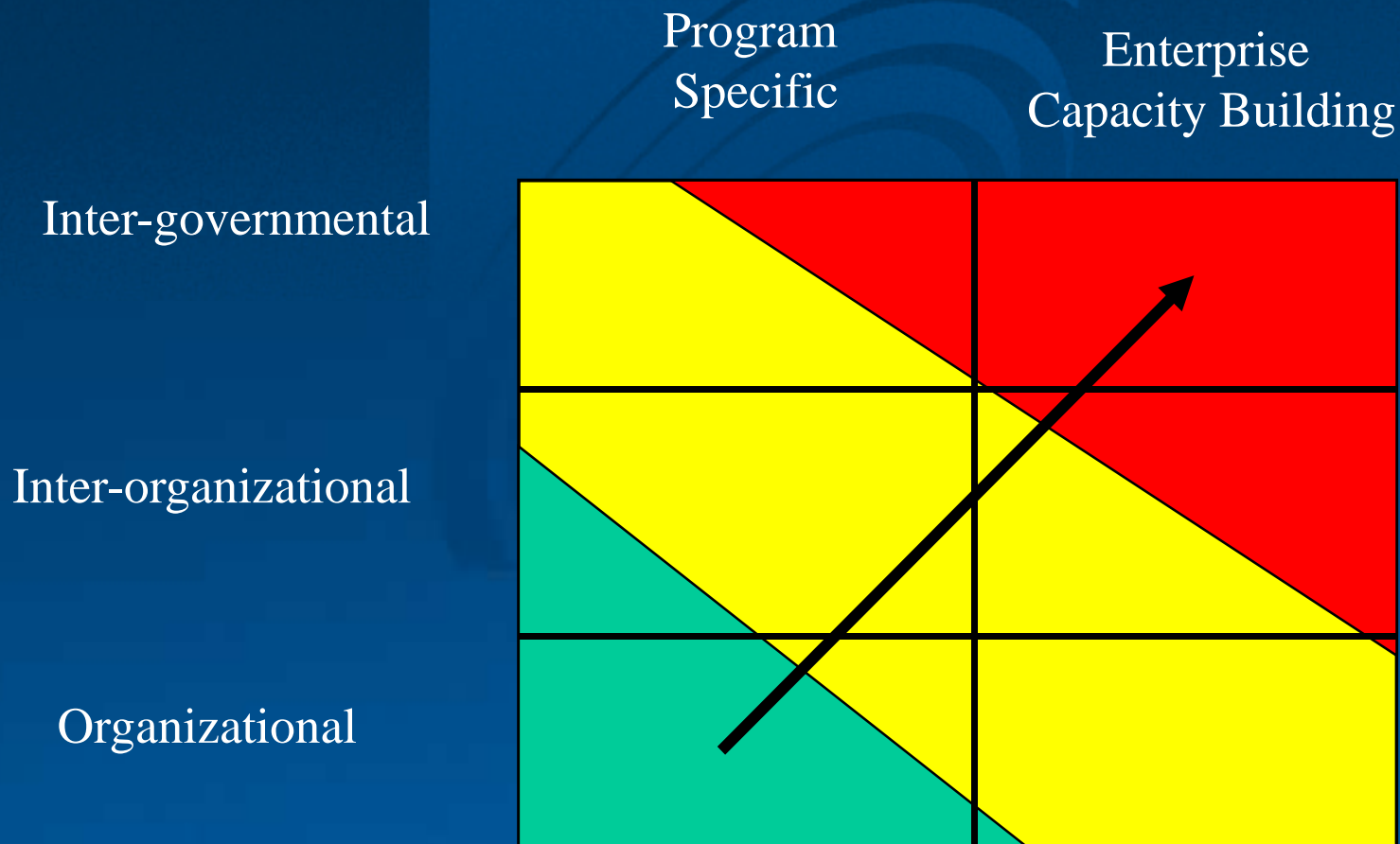


Barriers to information sharing

The difficulty that government agencies face appears to increase proportionally with the increases in...

- The number of boundaries to be crossed
- The number and type of information resources to be shared
- The number of technical and organizational processes to be changed or integrated

Information Integration Complexity Matrix



Information and knowledge sharing networks



Information and knowledge sharing networks

- New forms of public organization.
- Do not replace old forms.
- Networks and bureaucracy co-exist and interact. (o'toole, 1997)
- Formal authority remains important.
- Other concepts - innovation, consensus-building, and risk taking - are equally important.



Information and knowledge sharing networks

- Emerging in an increasing number of program and policy arenas.
- They facilitate cross-program and cross-functional coordination and support communities of practice.
- Differ from service delivery in that their purpose is sharing information and knowledge among participating organizations.



Modeling the social and technical interactions in cross-boundary information sharing

- An interdisciplinary study funded by the U.S. National Science Foundation in 2002 to investigate two key questions:
 - What are the critical factors and processes involved in sharing and integrating information across the boundaries of organizations charged with providing government services?
 - How do technical and social factors interact to influence the effectiveness of cross-boundary information sharing and integration in these contexts?

Cases	
<i>Case Site</i>	<i>Focus of Effort</i>
State of New York	Develop and implement a statewide strategy for responding to the reemergence of West Nile Virus.
Larimer County, Colorado	Develop and implement a county level and statewide strategy for responding to the reemergence of West Nile Virus.
State of Connecticut	Develop and implement a statewide strategy for responding to the reemergence of West Nile Virus.
State of Oregon	Develop and implement a statewide strategy for responding to a potential West Nile Virus outbreak.



Managing public health

- Public health in most U.S. states is a local government responsibility – primarily county-level
- The state primarily regulates delivery of these services and provides support.
- Local governments
 - New York has 57 counties – 33 of which have their own full-time health services
 - Colorado has over 2,800 local governments – each able to operate independently in terms of its systems and practices.

The information sharing challenge of WNV response

- An effective response capacity for WNV depends on an accurate assessment of how the virus is spreading among the animal population and sharing that information with human public health specialists.
- Tracking data within the animal population provides a critical early warning for the possible spread to humans.
- Information of interest was held in the hands of animal and human public health agencies at the local, state, and federal levels as well as a mix of public and private sector human and animal healthcare facilities and providers such as hospitals and veterinarian practices.



West Nile Virus in New York State

- New York State Department of Health led effort to improve state wide capacity to respond to another outbreak
- Critical component of response capacity was development of a Web-based integrated information network
- Existing infrastructure used to collect and provide access to West Nile virus related case data



West Nile Virus in New York State

- Network became the platform for sharing mosquito, bird, mammal, and human data
- Brought together animal and human public health professionals unaccustomed to collaborating



West Nile Virus in the State of Colorado

- First human cases were reported in 2003
- County health departments responsible for coordinating the response to the virus
- Response capacity included a cross-boundary information sharing initiative involving multiple organizations
- At the local level, the coordination of response efforts relied heavily on a less formal or single system

West Nile Virus in the State of Colorado

- This 'system of systems' was comprised of e-mail, phone, fax communications, and geographic information systems
- Public and private sector human and animal healthcare facilities and providers involved



Data and Methods

- Content analysis and semi-structured interviews
- Interviews with public managers and other actors
- Interviews were transcribed and analyzed following an inductive logic and using grounded theory techniques
- Atlas.ti, a qualitative analysis software tool, was used to support coding and analysis activities.



Our findings

Identified 32 factors of central interest.

- Among them:
 - Leadership
 - Trust
 - Clarity of roles and responsibilities
 - Knowledge
 - About own organization and others – information, business processes, technologies. etc



Leadership *(as an example)*

- Research and experience tells us leadership matters.
- What we don't know is how leaders make a difference.
 - What mechanisms do they use to effect change?
- How do leaders effect change in cross-boundary information sharing efforts.

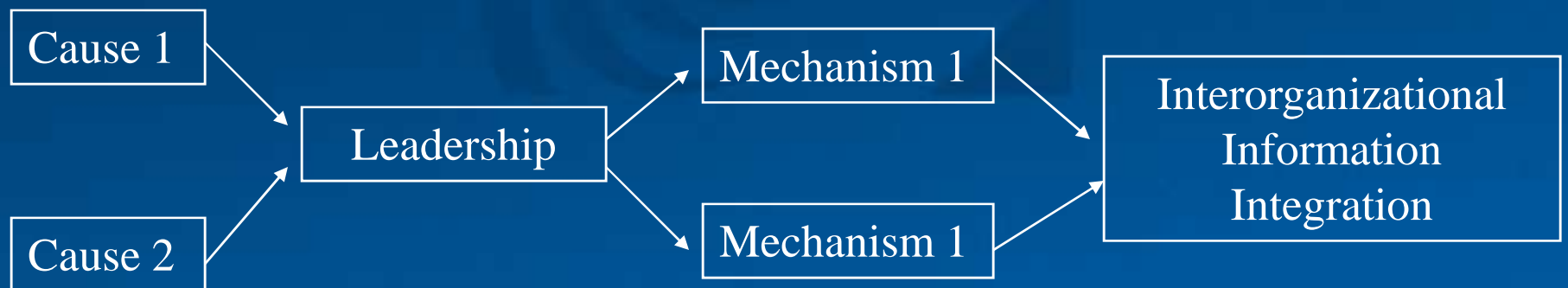
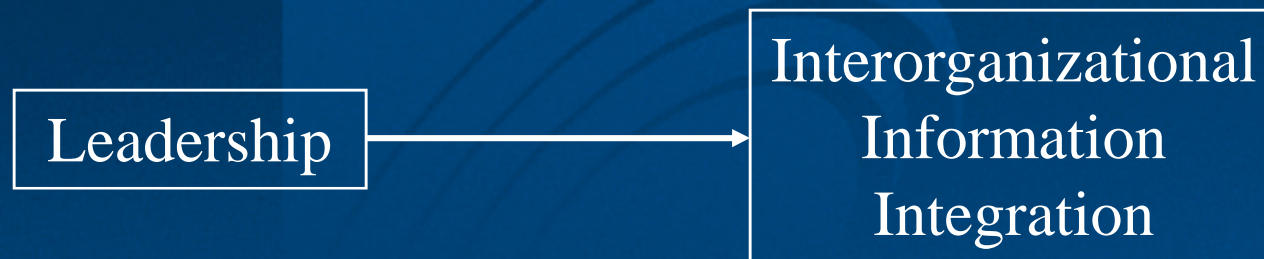


Leaders Played an Important Role

- Role of Leadership and Authority in Intergovernmental Information Sharing
 - Informal Leadership
 - Executive Involvement
 - Exercise of Authority
- Two focus areas
 - Effects of Leadership on Information Sharing
 - Antecedents of Leadership



Causes and Effects of Leadership in III



**Executive
Involvement**

Formal Authority

**Informal
Leadership**

???

???

???

**Cross-Boundary
Information Sharing**

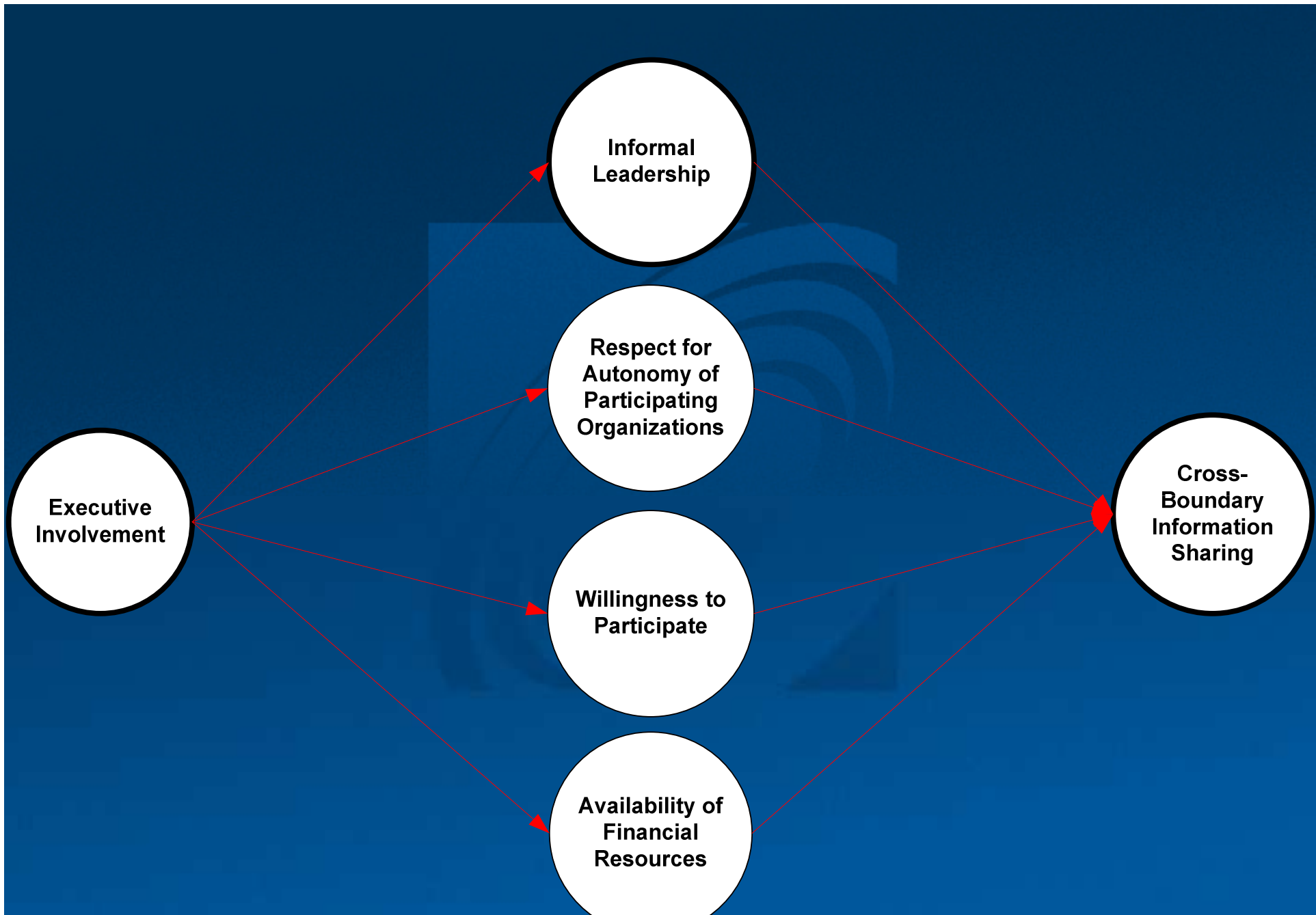


Leadership Variables

Mechanisms/Mediators

Dependent Variable





Respect for autonomy of participating organizations

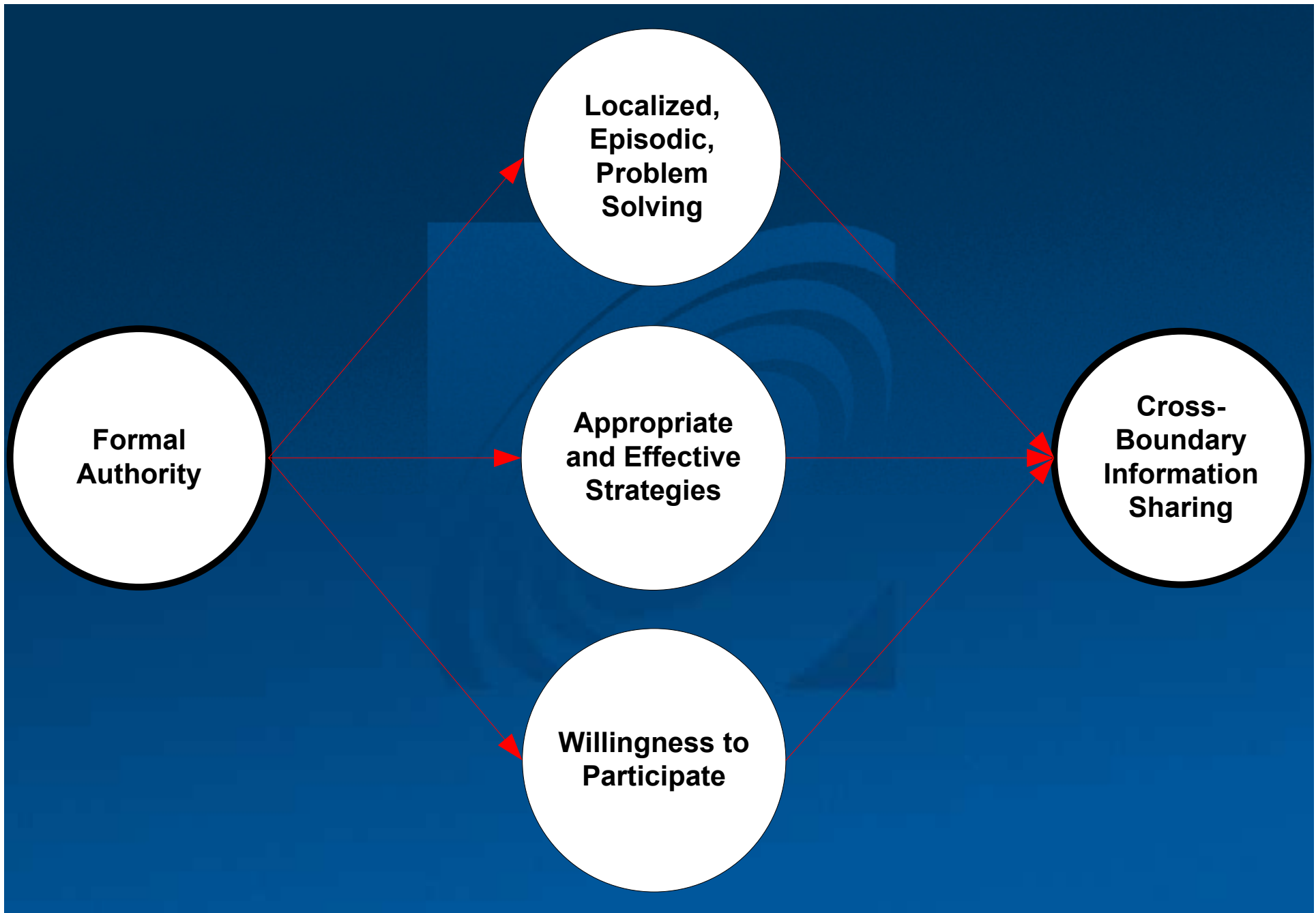
- Positive influence
 - Sensitivity to local concerns about disclosure of information.
 - Informal leader negotiated a 24 hour delay release to allow elected officials time to prepare.
- Negative influence
 - Taking an authoritative position in relationship to the local governments.
 - The state forced its own system onto locals. The result – the cost and complexity of running parallel systems.



Degree and Nature of Executive Involvement

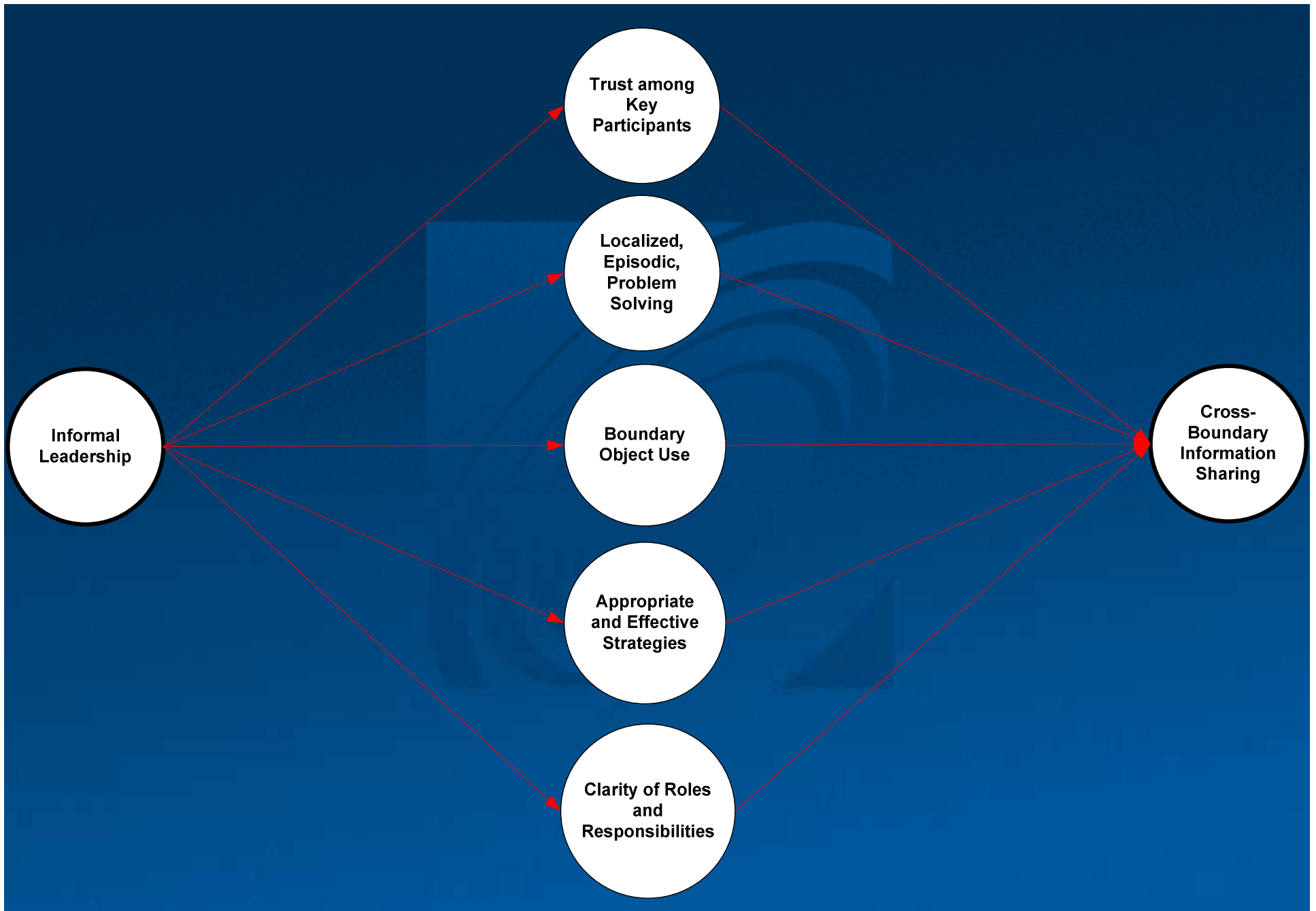
- Influencing
 - Presence, quality, and acceptance of informal leaders
 - Degree of respect for autonomy of participating organizations
 - Extent and nature of unmet concerns
 - Degree of willingness to participate
 - Degree of clarity of roles and responsibilities
 - Availability of financial resources
 - Degree and nature of exercise of authority
- Influenced by
 - Extent and nature of political concerns about information disclosure
 - Nature of the focusing event
 - Clarity and relevance of regulatory frameworks





Degree and Nature of Exercise of Authority

- Influencing
 - Presence, quality, and acceptance of informal leaders
 - Localized, episodic, problem solving
 - Development of appropriate and effective strategies
 - Degree of willingness to participate
- Influenced by
 - Degree and nature of executive involvement
 - Extent and nature of political concerns about information disclosure
 - Nature of the focusing event
 - Clarity and relevance of regulatory frameworks
 - Degree of clarity of roles and responsibilities



Presence, Quality, and Acceptance of Informal Leaders

- Influencing
 - Degree of trust among key participants
 - Localized, episodic problem solving
 - Extent of boundary objects use
 - Development of appropriate and effective strategies
 - Degree of clarity of roles and responsibilities
- Influenced by
 - Group and individual past experiences
 - Diversity of participating organizations and their goals
 - Nature of the focusing event
 - Degree and nature of exercise of authority
 - Degree and nature of executive involvement

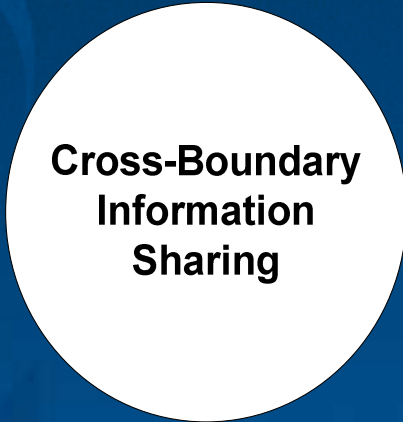
Leadership Variables

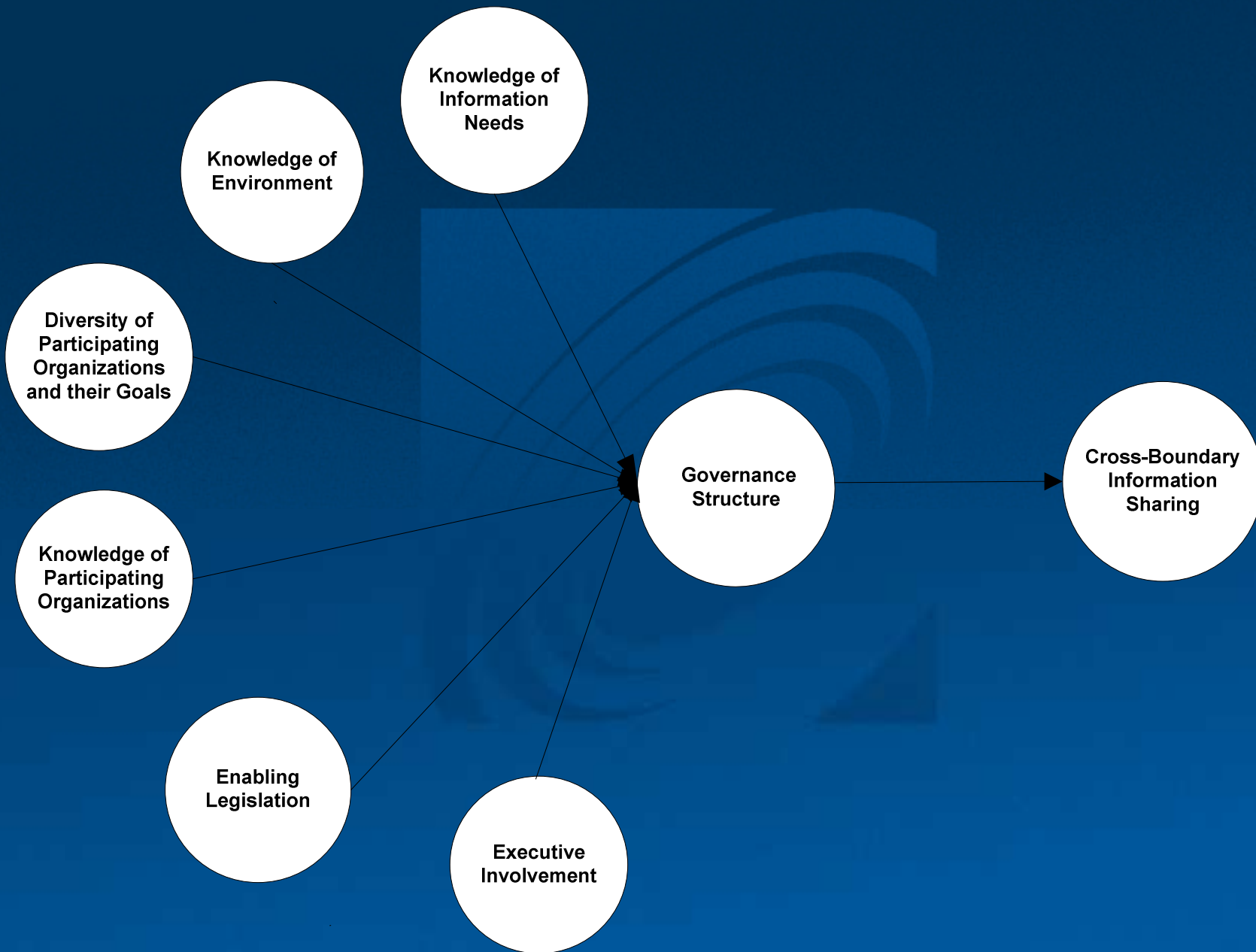
Mechanisms/Mediators

Dependent Variable



???





Existence and nature of governance structures

- Influenced by
 - Knowledge of information needs
 - Knowledge of the environment
 - The degree of willingness to accommodate diversity of participating organizations and their goals
 - Knowledge about participating organizations
 - Legislation affects the existence and nature of governance structures
 - Executive involvement



Next steps

- National survey to test model of cross-boundary information sharing with public health and public safety professionals.
 - Currently in pre-test mode, pilot will be conducted in November, full release in January.
- Testing and extending the model through comparative analysis in non-US context through dissertation work.
 - Creating an *International Program on Comparative Information Sharing and Integration Studies*
- Applying this and other research to the development of practical tools for building capability



Capability for Information Sharing



What is information sharing capability

- *Multidimensional*
 - it is made up of several dimensions, all of which contribute to overall information sharing capability.
- *Complementary*
 - high or low overall levels of capability can result from different combinations of factors, high levels in some dimensions can often compensate for lower levels in others.
- *Dynamic*
 - it can increase or diminish due to changes within an initiative or in its external environment.
- *Specific to its setting*
 - some elements of capability apply to all settings, but capability for any particular project must be assessed relative to its own specific objectives and environment.

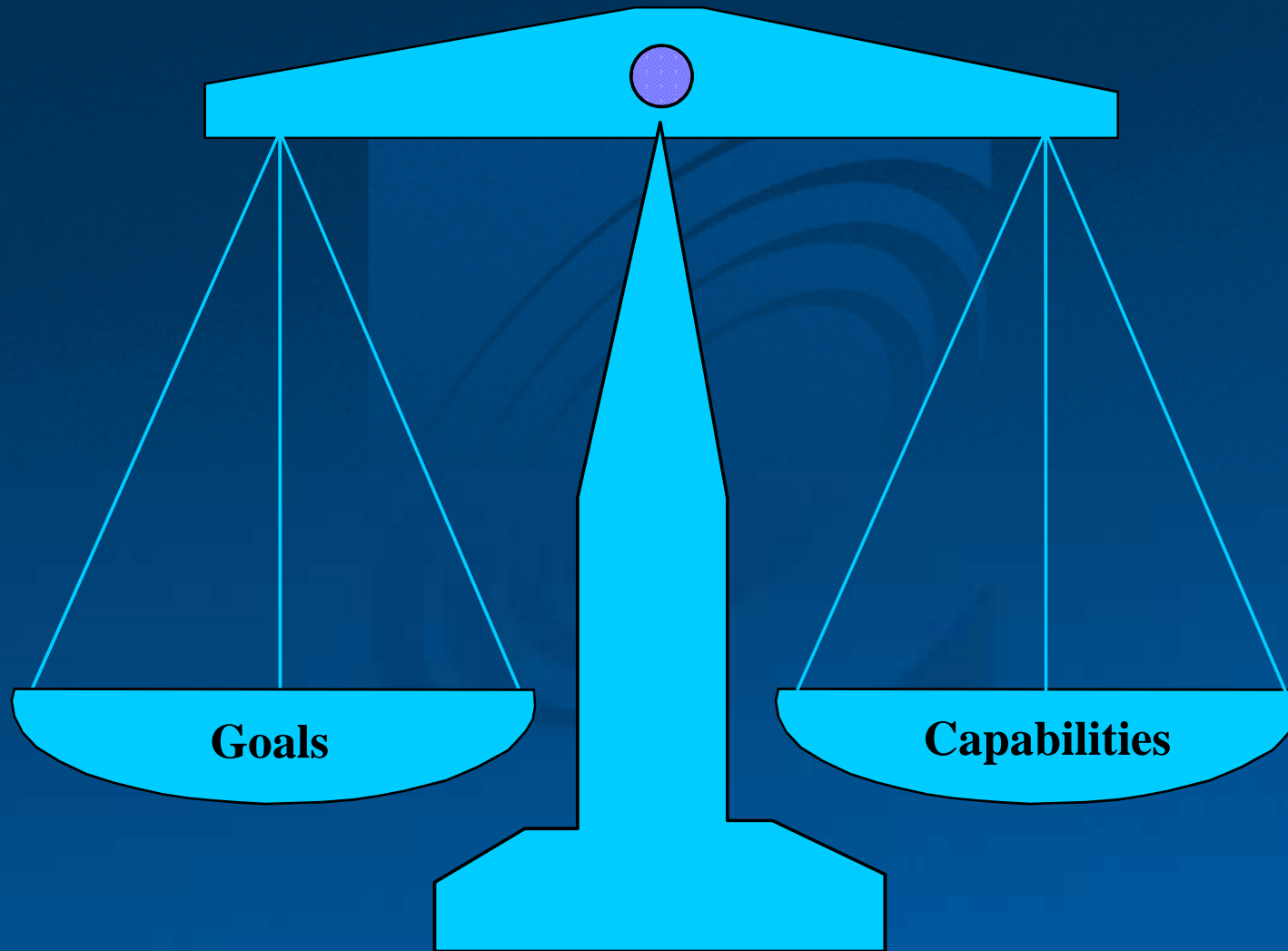


Two more ideas due to the generally cross-boundary nature

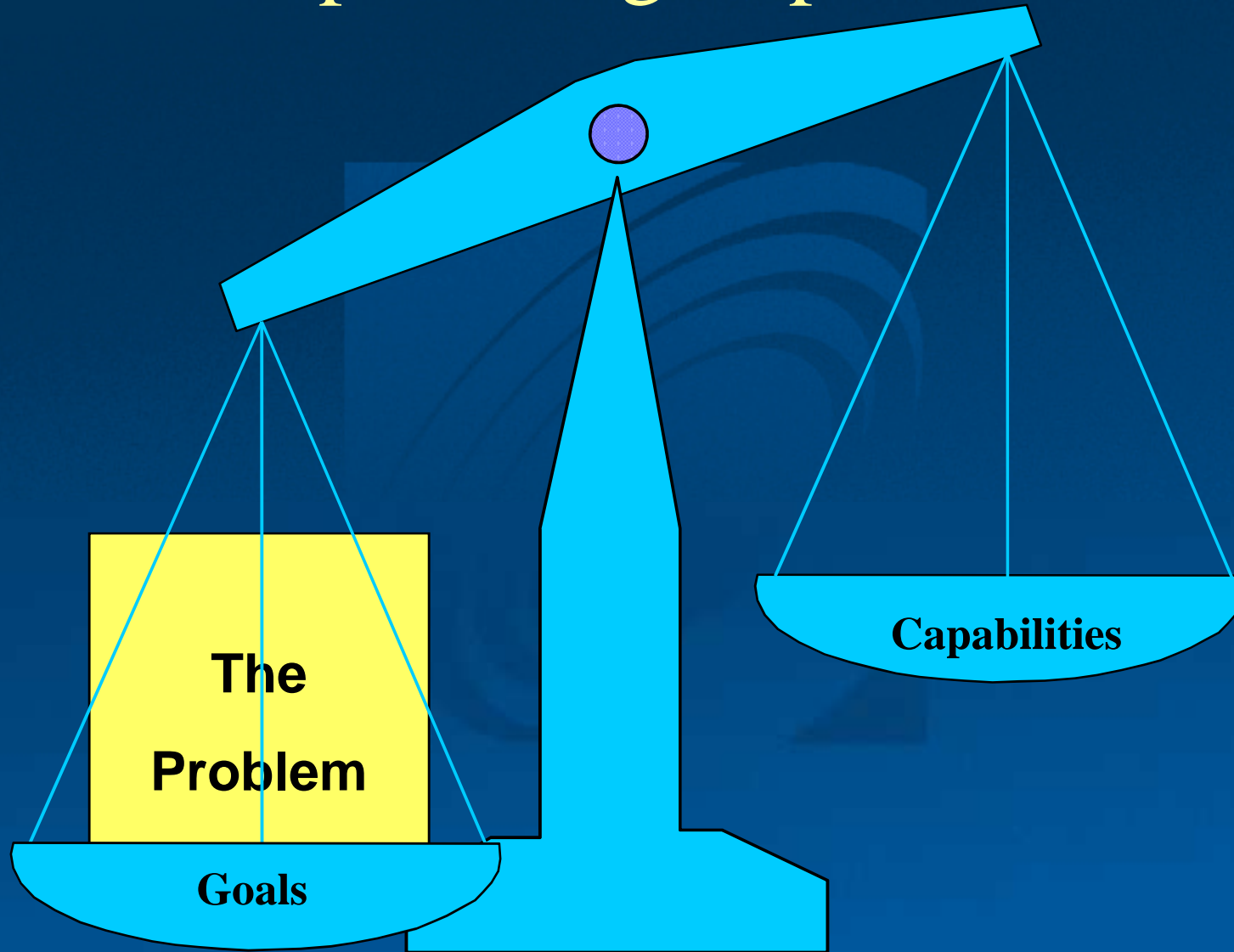
- First, *the success of information sharing depends on the combination of capabilities that exist among the sharing partners.*
 - Not all organizations need the same capability profile. Instead, the combination of capability profiles across a set of agencies sharing information determines the effectiveness of an initiative.
- Second, *the knowledge and experience required for effective assessment can be found in the people working on the effort.*
 - The necessary combinations of knowledge and experience may not exist in a single organization, but may be available as a result of joining forces across the multiple organizations involved in a cross-boundary sharing initiative.



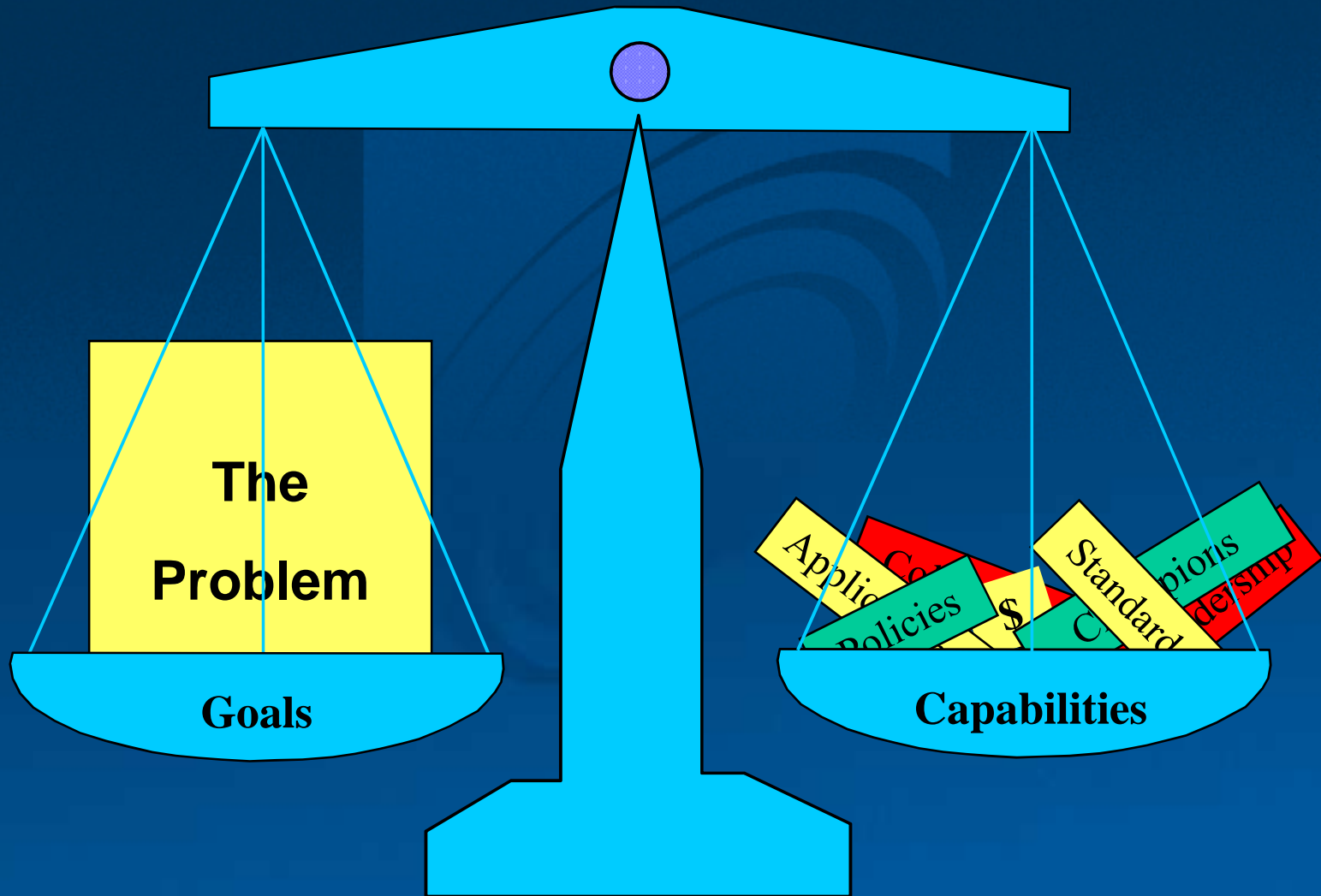
Compensating Capabilities



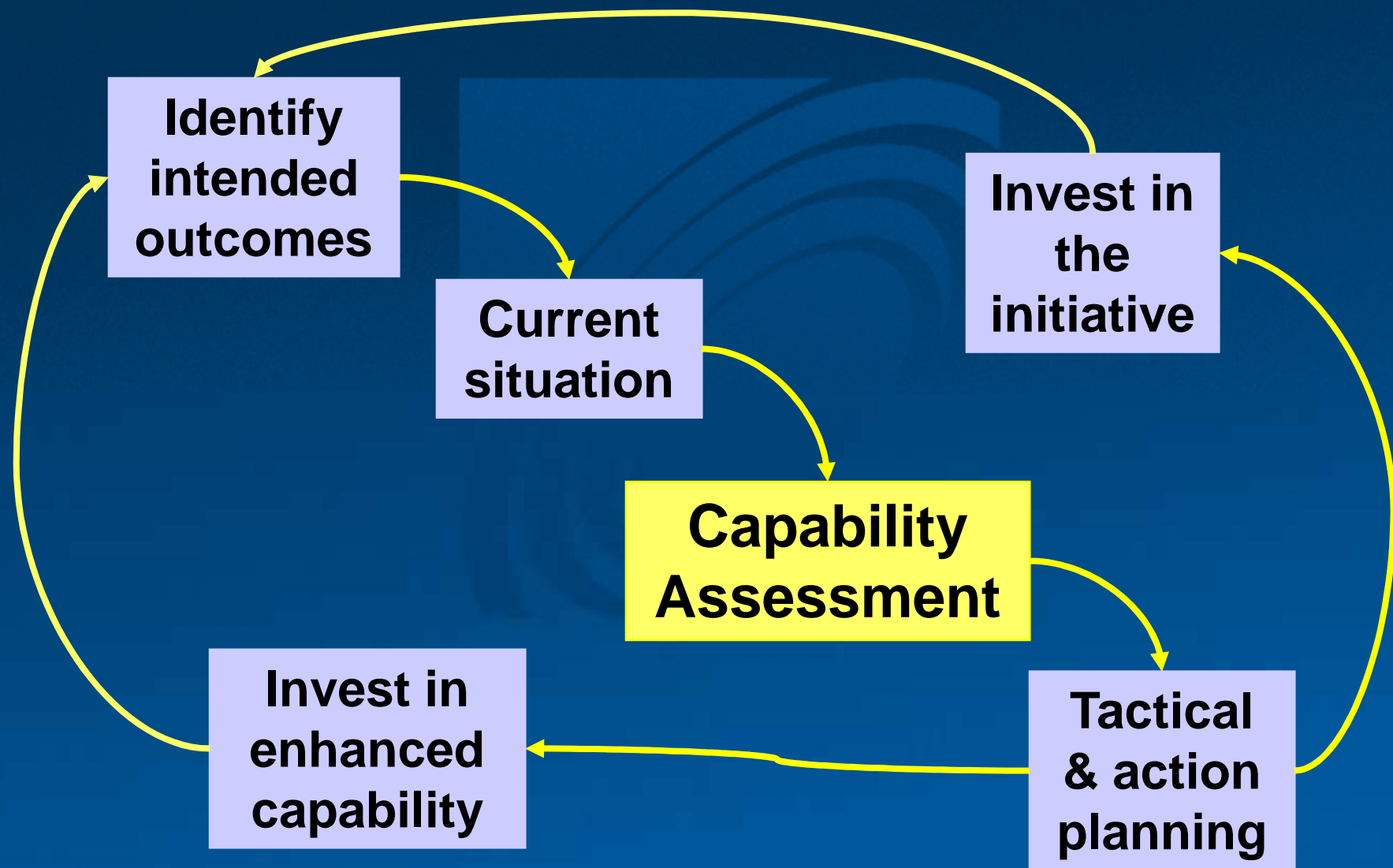
Compensating Capabilities



Compensating Capabilities



Cycle of Assessment Activities



Dimensions of Capability

- **Business model and architecture**
- **Collaboration ready**
- **Data assets and requirements**
- **Governance**
- **Information policies**
- **Leaders and champions**
- **Organizational compatibility**
- **Performance evaluation**
- **Project Management**
- **Resources**
- **Secure environment**
- **Stakeholder identification**
- **Strategic planning**
- **Technology acceptance**
- **Technology compatibility**
- **Technology knowledge**



Dimension Examples ...

Limited or no
governance
mechanism



Clearly defined,
organized,
empowered, and
active governance
mechanism

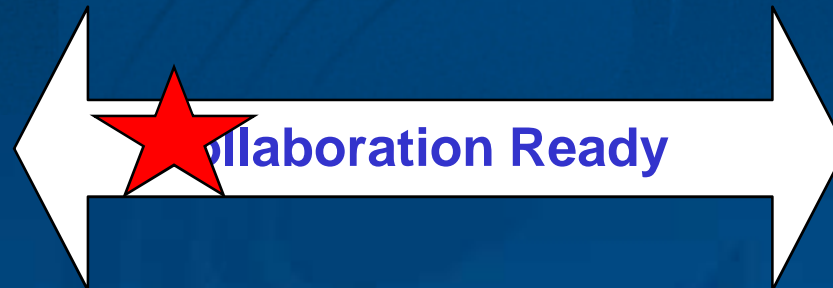
No one acting
effectively to
lead & champion
the initiative



Strong, effective
leadership &
championing

Interpreting the patterns and mark the dimensions

Threatened by collaboration; lack of resources and support; policies that discourage collaboration; no experience



Actively seek collaboration; readily available resources; supportive policies

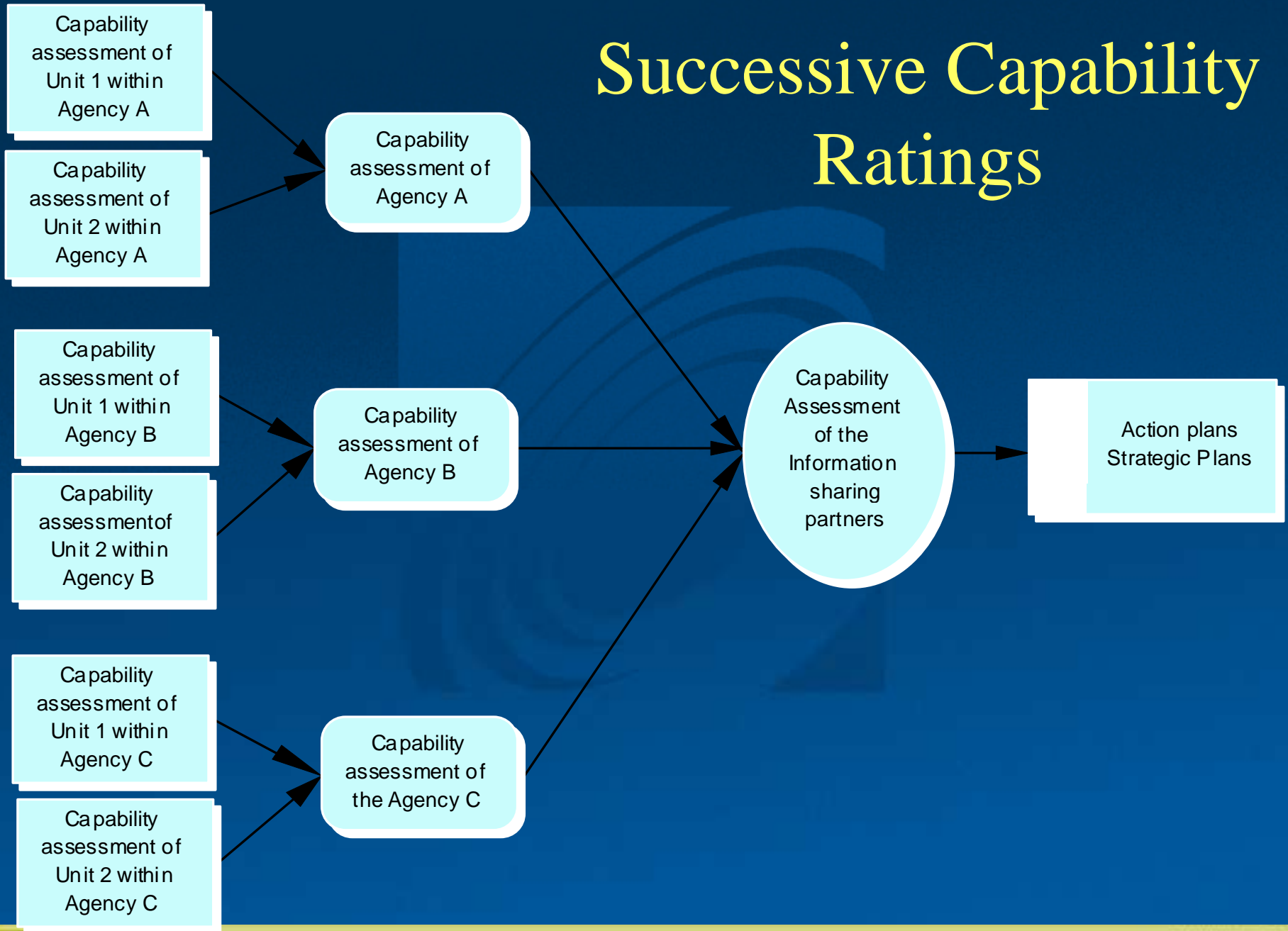


Capability Assessment

- Respond to subdimension statements
- Record evidence & notes
- Record confidence levels
- Tally the results
- Interpret the patterns
- Mark the dimensions
- Combine and summarize results
- Use the results in planning and action



Successive Capability Ratings



Products of the Assessment

- Overall ratings on each dimension
- Identified areas for improvement
- Detailed knowledge of where the ratings come from
- Strategies for improvement
- Enhanced collaboration (perhaps)



Toolkit URL's

- Toolkit paper version
www.ctg.albany.edu/publications/guides/sharing_justice_info
- Online Version:
<http://catoolkit.ojp.gov/introduction>





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Four challenges to government transformation

What is transformation?

- Innovation?
- Creativity?
- Integration?
- Radical change?
- Some definitions & strategies



Four Challenges

- Complexity
- Information quality and availability
- End-to-end performance
- Integration

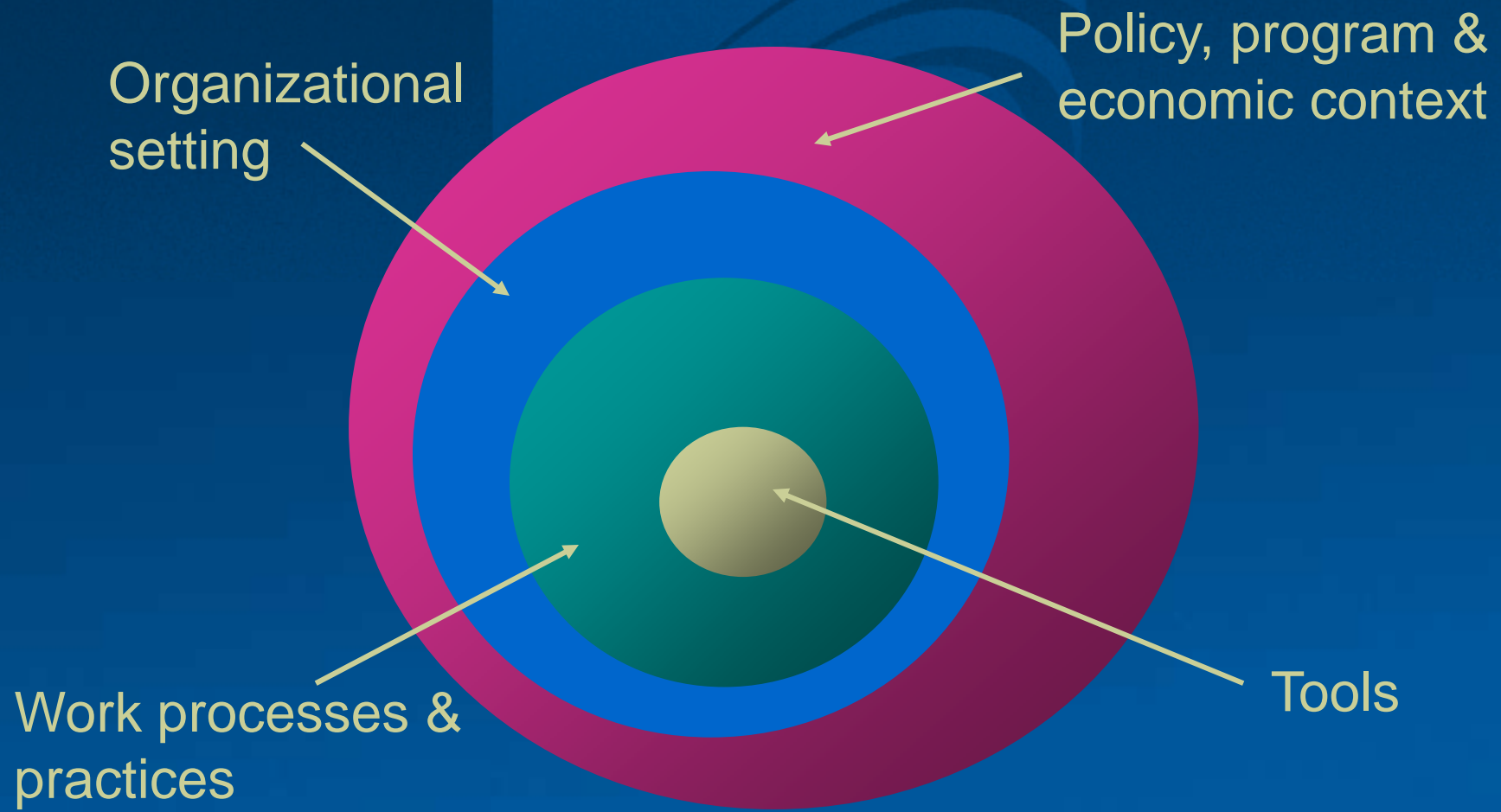


Complexity challenges

- Embeddedness
- Risk
- Differences among professions and roles
- Centralized vs. decentralized vs. distributed ways of working



Layers of complexity



Professions, roles, and relationships

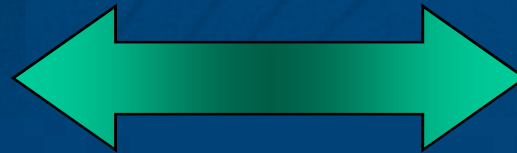
- Policy makers
- Subject matter experts
- Technology experts
- Administrative experts
- Operational experts
- Customers
- Partners and suppliers
- Overseers



Decisions and actions

Styles and Strategies

- Top-down
- Bottom-up
- Outside-in
- Center-out



Principles

- Trust
- Accountability
- Transparency
- Risk management



Data challenges

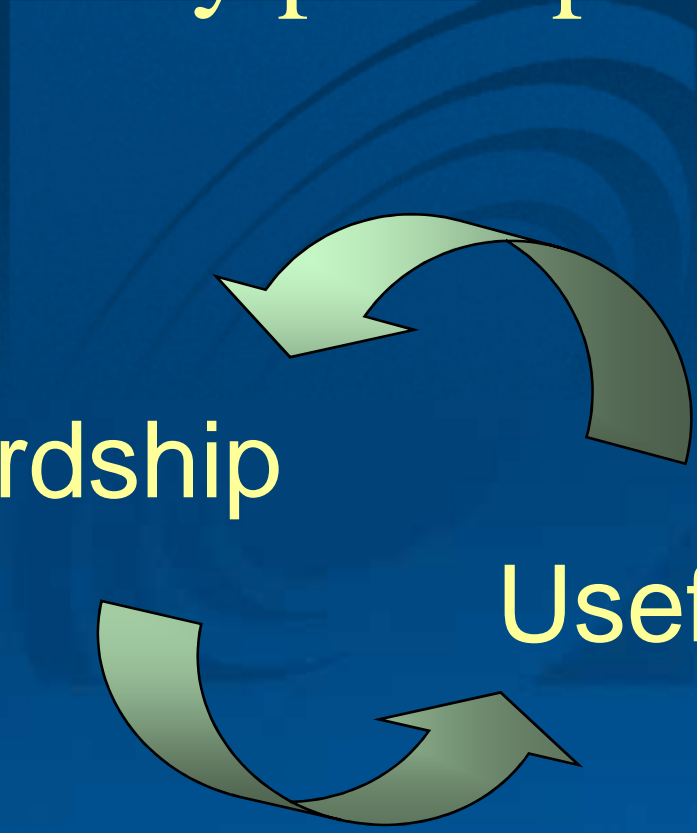
- Information policies and philosophies
- Fitness for use



Countervailing information policy principles

Stewardship

Usefulness



Quality = fitness for use

- Accuracy
- Availability
- Context
- Definition
- Granularity
- Standardization
- Timeliness
- Metadata



End-to-end challenges

- Incomplete understanding of business processes
- Incomplete knowledge and appreciation of business practices at all points in a process
- Uneven interest and investment in the front and back offices



Integration challenges

- Play out over time
 - Across organizations
 - Across levels & functions within organizations
 - Across governmental boundaries
 - Across public, private, and nonprofit sectors
 - Across many dimensions

Integration of what?

- Information
 - Work processes
 - Systems
-
- Perspectives
 - Value propositions
 - Money and other resources
 - Cultures
 - Missions
 - Practices
 - Professions



Integration Capability Dimensions

- Business model and architecture
- Collaboration readiness
- Data assets and requirements
- Governance
- Information policies
- Leaders and champions
- Organizational compatibility
- Performance evaluation
- Project management
- Resources
- Secure environment
- Stakeholder interests
- Strategic planning
- Technology acceptance
- Technology compatibility
- Technology knowledge

Meeting the challenges

Enterprise Principles and Relationships

Process Thinking and Action

Emphasize Use and Context

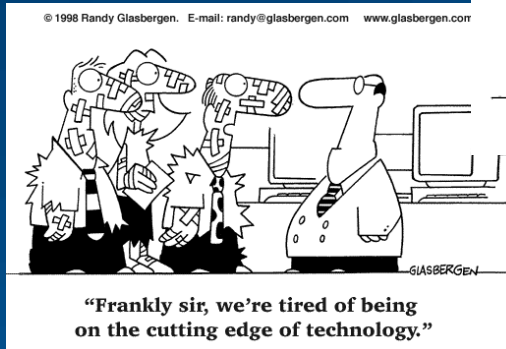
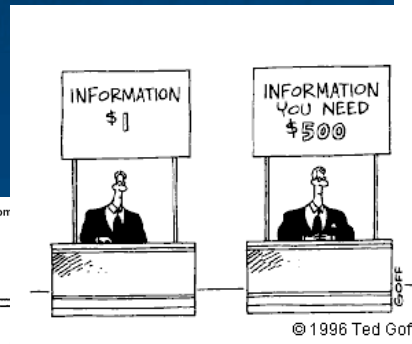
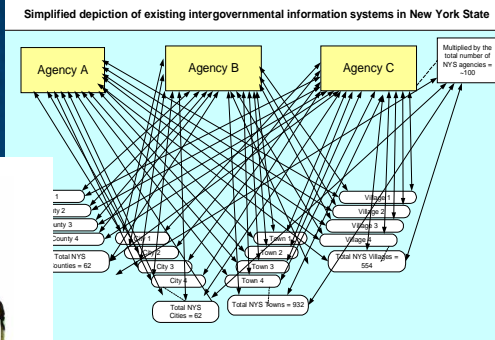
Governance and External Focus

Integration

End-to-end

Information

Complexity



The challenges . . .

- are enduring
- are shaped and re-shaped by context
- represent “requirements” not “stages”
- can be approached separately, but are interdependent
- if met, the results support -- **but do not guarantee** -- transformation . . .

Why?

- Leadership and vision are also needed
- Public institutions are networks of systems in the largest sense
- Like organisms, these systems are complex and evolving -- and their relationships are only partly understood.



The Continuing Transformation Challenge for Leaders

- Understand
 - the interactions between people, processes, and technology
- Invest
 - Use understanding to focus investments in specific and systemic capacity building
- Reduce risk and maximize value
 - Build necessary, policy, management, and technology capabilities



Center for
Technology in Government

Electronic Governance and Organizational Transformation

Tutorial and Workshop

ICEGOV 2007

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