



Center for  
Technology in Government

# Information and Service in a Networked Era

Theresa A. Pardo

The Shifting Sands of Public Service Delivery:  
People, Partnerships, and Performance

*Halifax, Nova Scotia*

*November 14, 2007*

# Outline for today's talk

- Pioneers – yesterday and today
- The role of information in government transformation
- Information sharing
- The complexities of government transformation





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WOMEN'S · ROYAL · NAVAL · SERVICE



AND · FREE · A · MAN · FOR · THE · FLEET

APPLY TO DIRECTOR W.R.N.S. ADMIRALTY S.W.I.  
OR THE NEAREST EMPLOYMENT EXCHANGE

## One of yesterday's public servant

**McCauley, Matthew**

Mayor, 1892 – 1894

Alderman, 1896

- Born in Ontario.
- Traveled for 21 days in an oxcart to Fort Garry.
- Introduced the first hackney carriage to the west.
- Settled in Edmonton in 1881.
- Raised money for first schoolhouse.
- First butcher shop and livery stable in Edmonton.
- First mayor of Edmonton.
- Received charter to operate first street railway.
- Records Manager.
- Urban Planner.

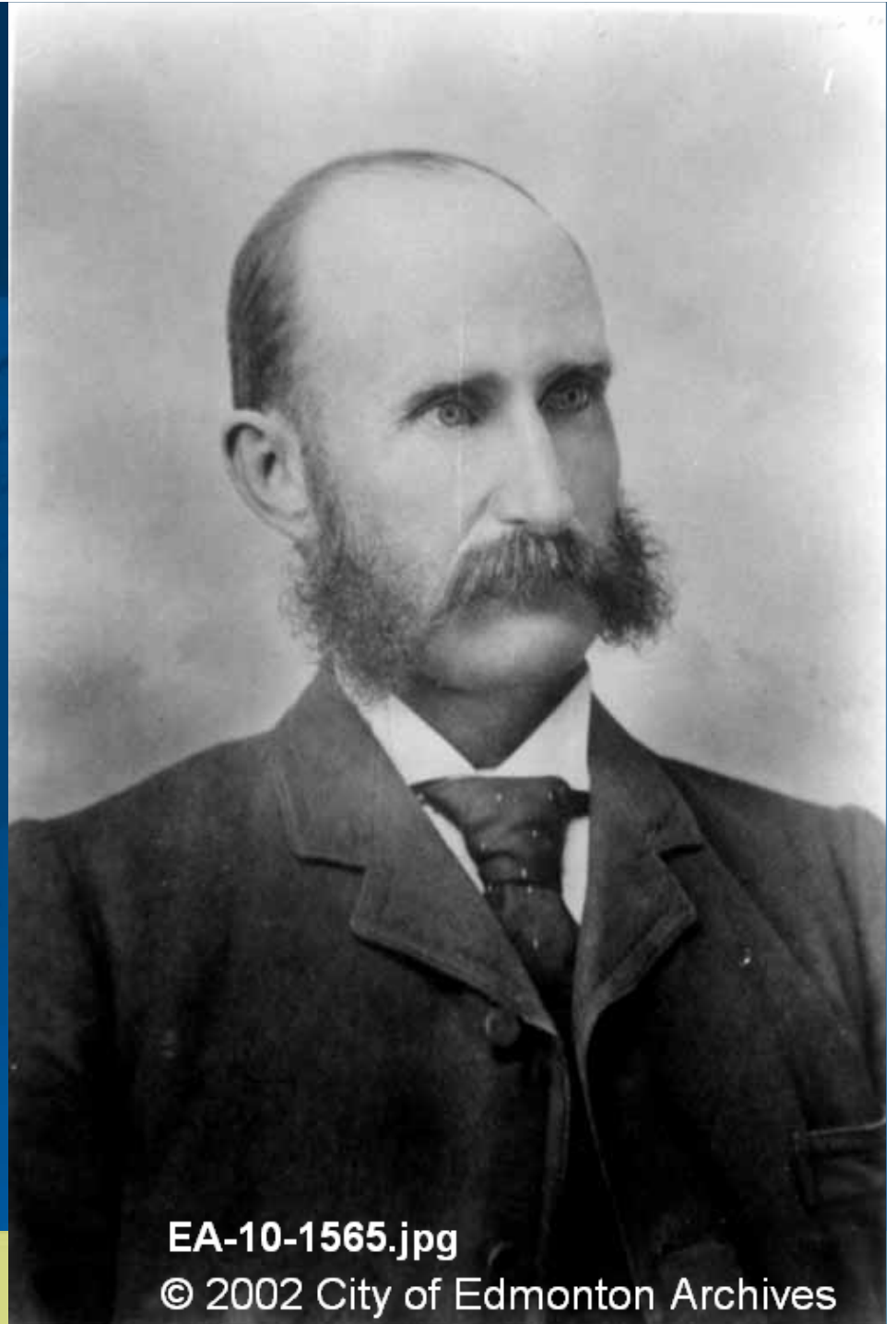
*Source: City of Edmonton Archives*

**Dirty Harry of the West!**

**A Pioneer.**



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EA-10-1565.jpg

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# What made change possible then?

- No contiguous jurisdictions requiring coordinated services
- No installed base
- No aging infrastructure
- No unions
- Information sharing systems fit for use
- Public private partnerships
- Everyone was a pioneer



# What forces are creating change today?

- Globalization
- Focus on service – new public service
- Network forms of government
- Technology advancements
- New appreciation for the role of information
- Value-oriented expectations



# The Public Value Argument

- The value to the public that results from improving *an organization as a public asset*
- The value that results from delivering specific *benefits directly to persons or groups*
- The public point of view assessing public returns should reveal *value in terms of stakeholder interests*



# The Public Value Argument

- Illuminate justice
- Provide an historic record
- Reconciliation in region
- Establish the rule of law
- Supporting an end to impunity





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What challenges do  
today's pioneers face in  
creating public value?

# Creating the EMDC

**Volunteers from NYC's GIS community join the EMDC staff to relieve (exhausted) City and consultant staff**



*AKRF, American Museum of Natural History, Baker Engineering, Columbia University, Community Cartography, Davis Associates, Hunter College,*

*Malcolm Pirnie, NYPIRG, Parsons, Rockland County, SpaceTrack, Urban Logic, US Census Bureau, Verizon, Westchester County . . . . And many individuals*



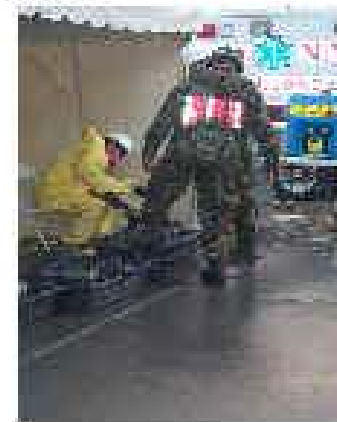
# EPA Response Issues



Lower manhattan blanketed by layer of dust and debris.



EPA staff begin to establish a monitoring network



Washing and cleaning of streets and buildings; workers and equipment in and around ground zero.



# Voices from the field

- “When we received reports in paper form – it didn’t matter to those of us who were curators how the information had been created, because the medium was the printed page. Our concern was cataloging it, preserving it, and making it accessible.
- In the digital age – information is coming at us in many formats and the process of creation now very much influences the process of preservation. We need to think differently about how the processes of creation, management, and use influence the process of preservation.”
- *Jan Regan, North Carolina State Library*



# Voices from the field

- Criminals are protected by chaos.
- Collaboration is something I do when I'm backed into a corner.



# Interconnectedness

Systems thinking is . . . seeing wholes . . . seeing interrelationships rather than things, seeing patterns of change rather than static “snapshots.” . . .  
. . . systems thinking is a sensibility — for the subtle interconnectedness that gives living systems their unique character.

- Peter Senge

Earth at Night  
More information available at:  
<http://artswp.gsfc.nasa.gov/apod/ap001121.html>

Astronomy Picture of the Day  
2000 November 27  
<http://artswp.gsfc.nasa.gov/apod/ap001121.html>



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# Information as a transformative agent

- Information is one of the most valuable resources in government.
  - Public services
  - Crisis and disaster response
  - Monitoring
  - Performance measurement
  - Citizen participation



# New understanding about where information resides

- 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...

- Governments around the world 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.



# Complexity revealed

- The more these strategies are pursued, the more the complexity of cross boundary information sharing as a strategy is revealed.





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# Transforming government response capability

*The West Nile Virus Outbreak*

# West Nile Virus

- Commonly found in humans and birds and other vertebrates in Africa, Eastern Europe, West Asia, and the Middle East.
  - Had not previously been documented in the Western Hemisphere.
- Transmitted to humans through the bite of a mosquito and can cause encephalitis - an inflammation of the brain.
- 20% of those infected will have some illness, 1 in 150 infected will be seriously ill.
- Experts believe WNV is established in NA as a seasonal epidemic flaring up in the summer through the fall.



# 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.

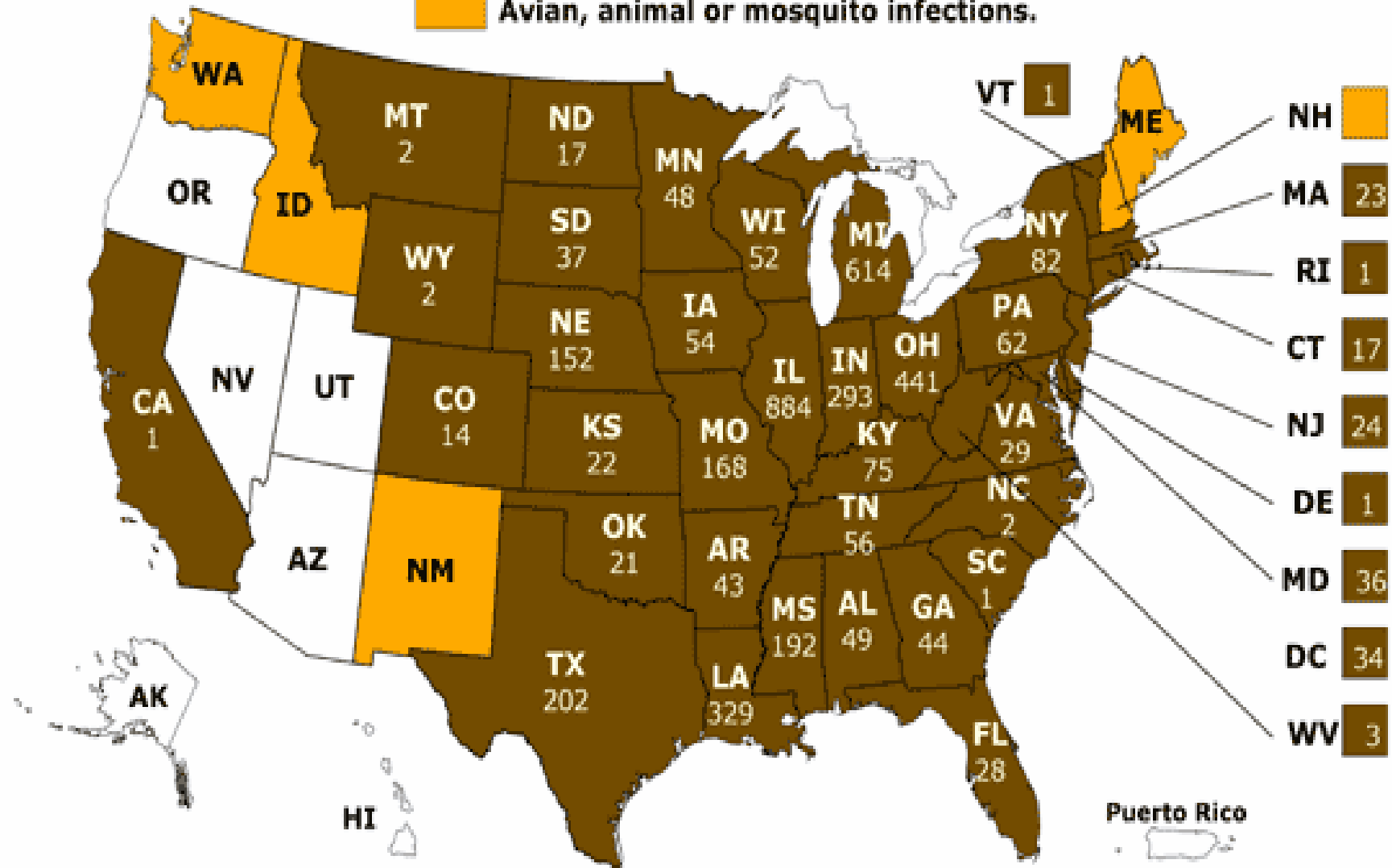




2002



■ Indicates human disease case(s).  
■ Avian, animal or mosquito infections.



# 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.
- 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 a Web-based integrated information network
- Existing infrastructure leveraged 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

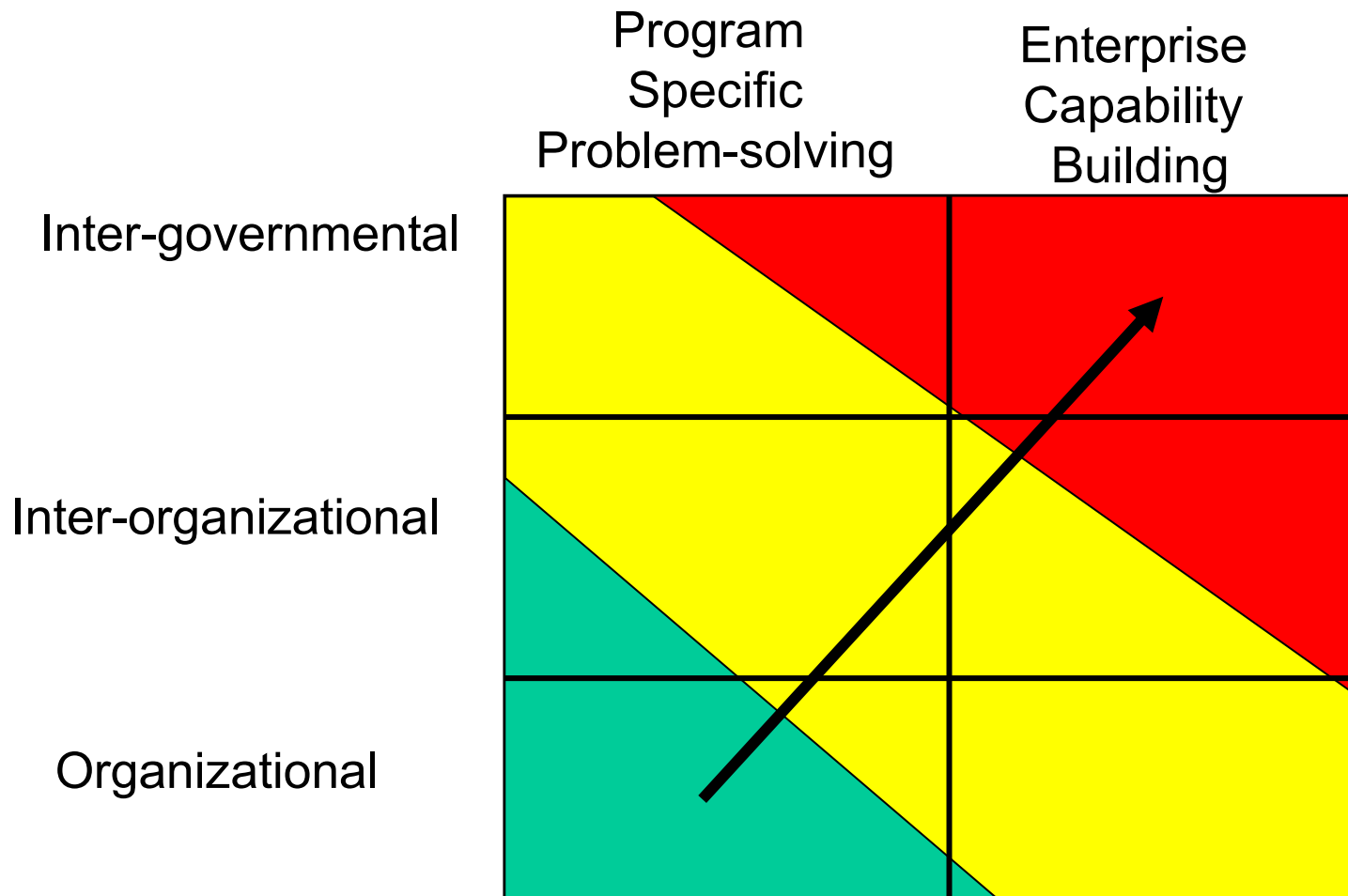


# West Nile Virus in the State of Colorado

- 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



# Information Sharing Complexity Matrix



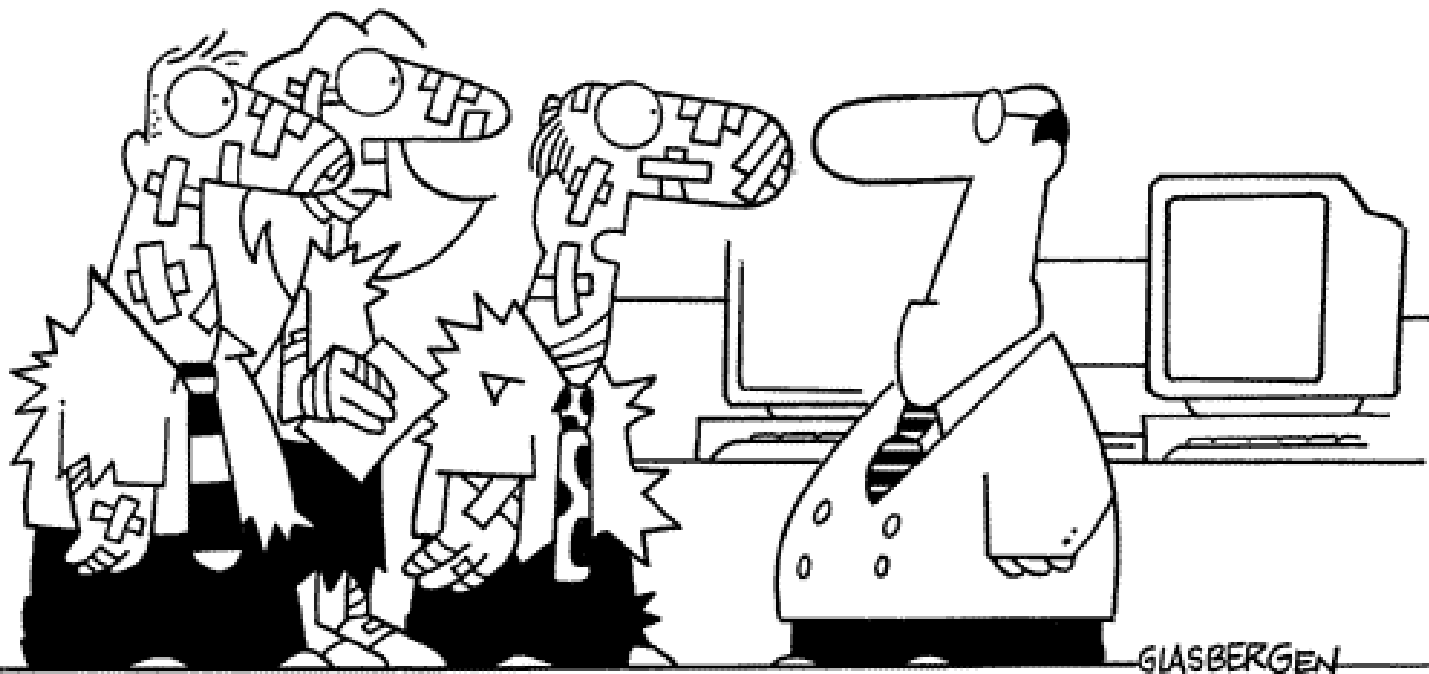
# Four challenges to transformation

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



# Challenge #1: Complexity

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**“Frankly sir, we’re tired of being  
on the cutting edge of technology.”**

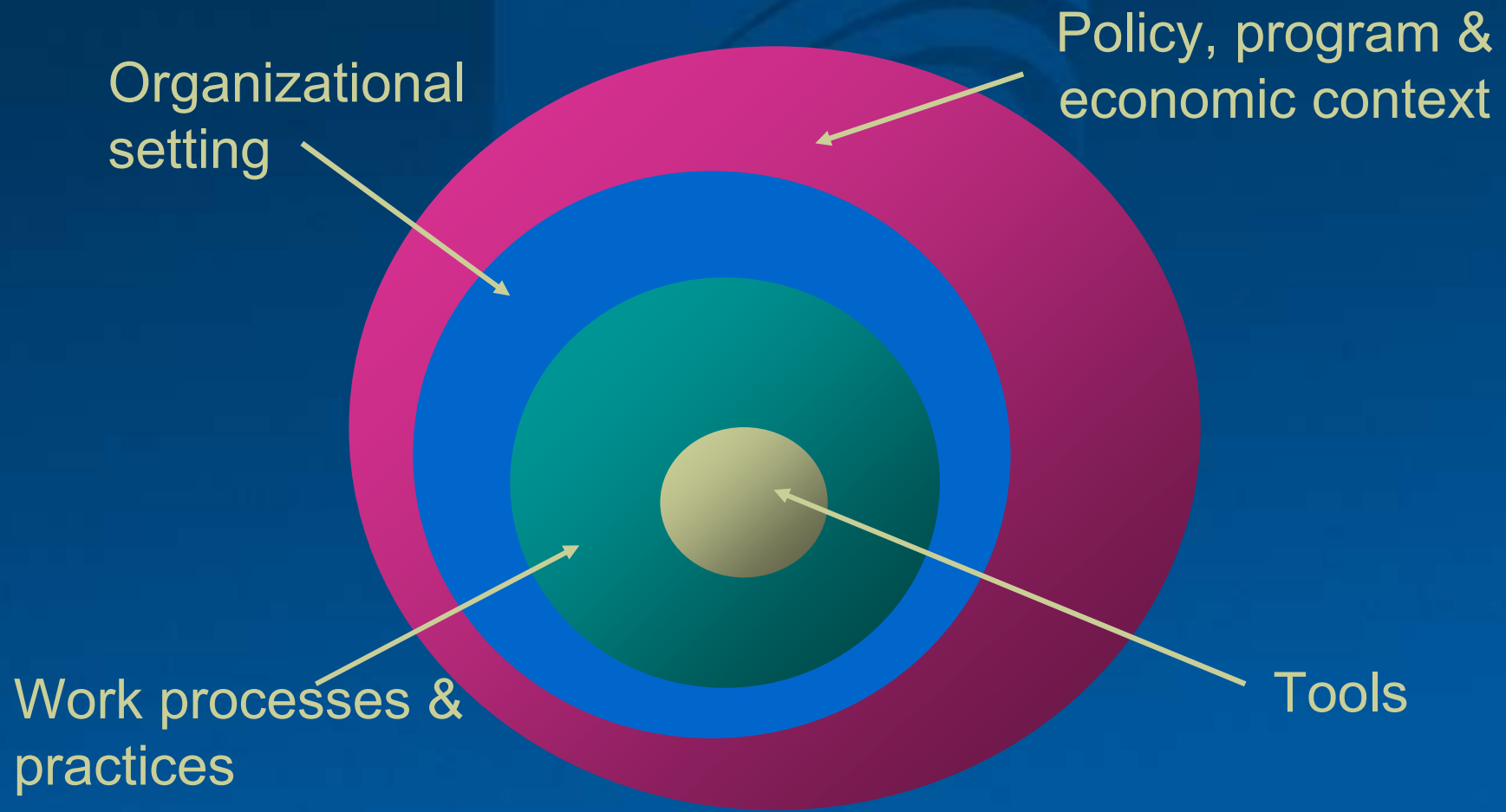


# Complexity challenges

- 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

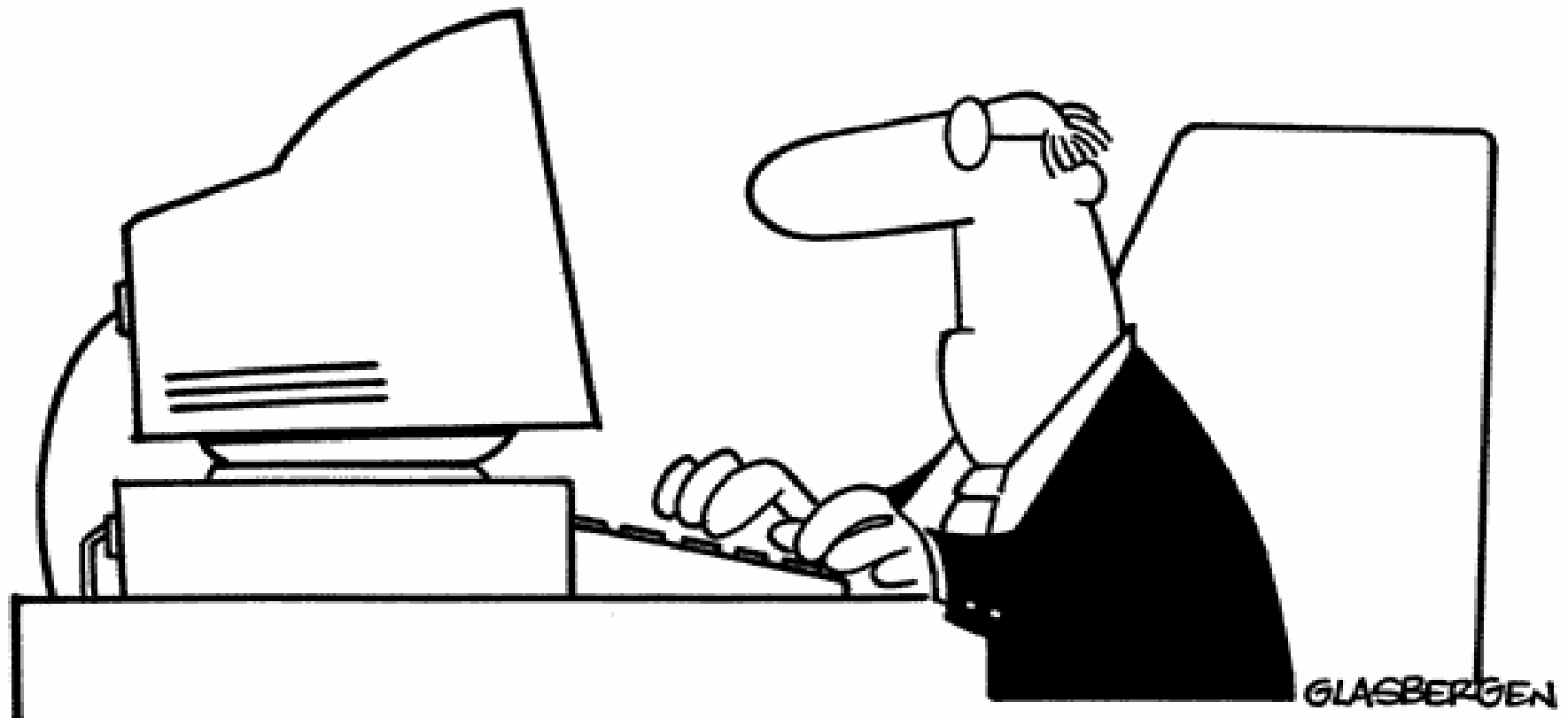


## Principles

- Trust
- Accountability
- Transparency
- Risk management

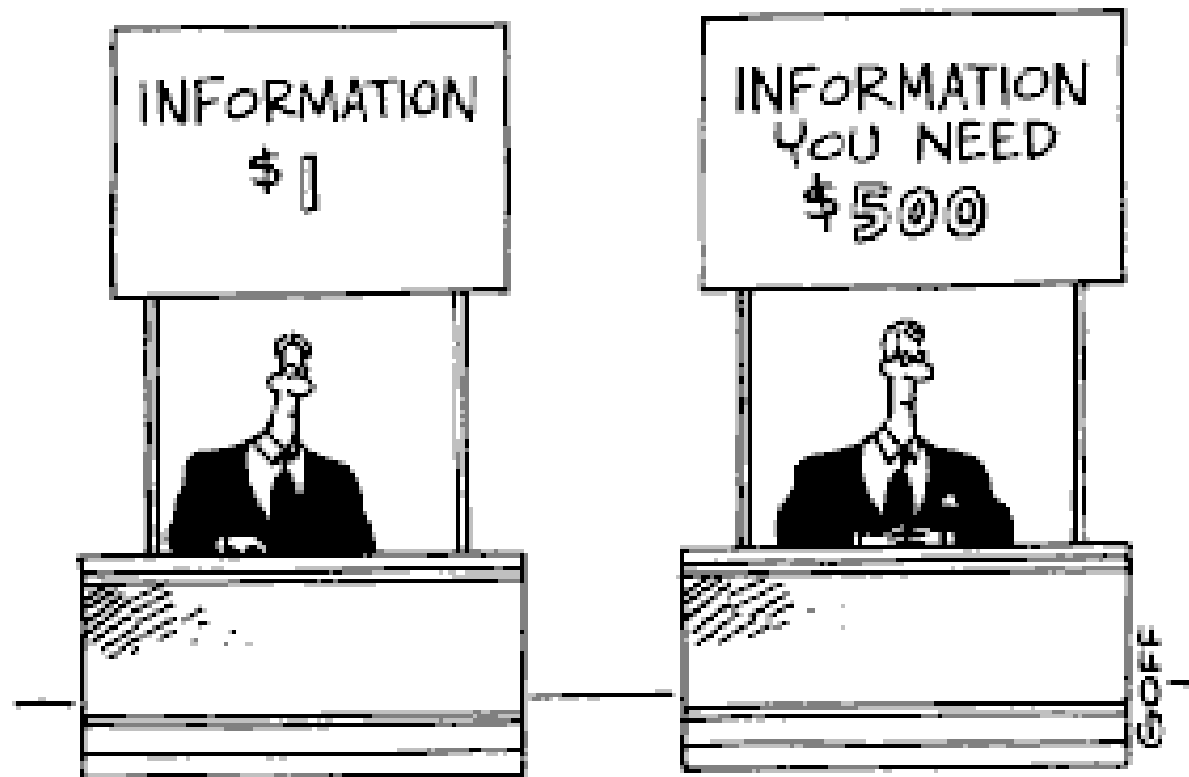


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**“MEMO: It has come to my attention that every time we solve one problem, we create two more. From now on, all problem solving is forbidden.”**

# Challenge #2: Information



© 1996 Ted Goff

# Data challenges

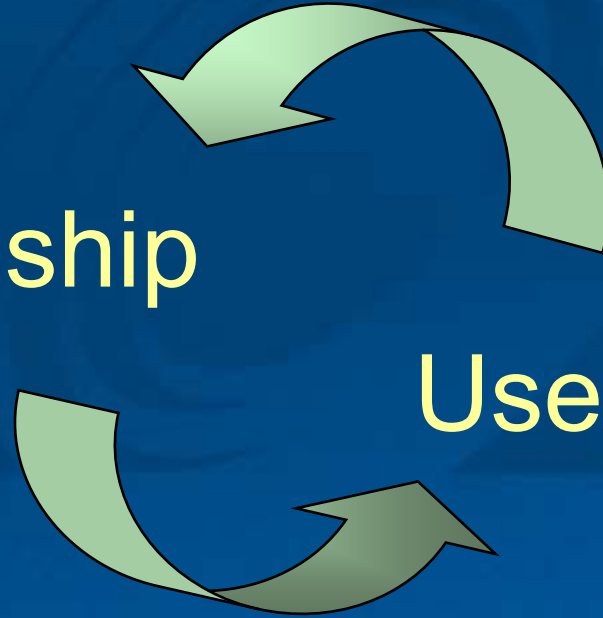
- Information policies and philosophies
- Fitness for use



# Countervailing information policy principles

Stewardship

Usefulness



# Quality = fitness for use

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



# Challenge #3: End-to-end performance



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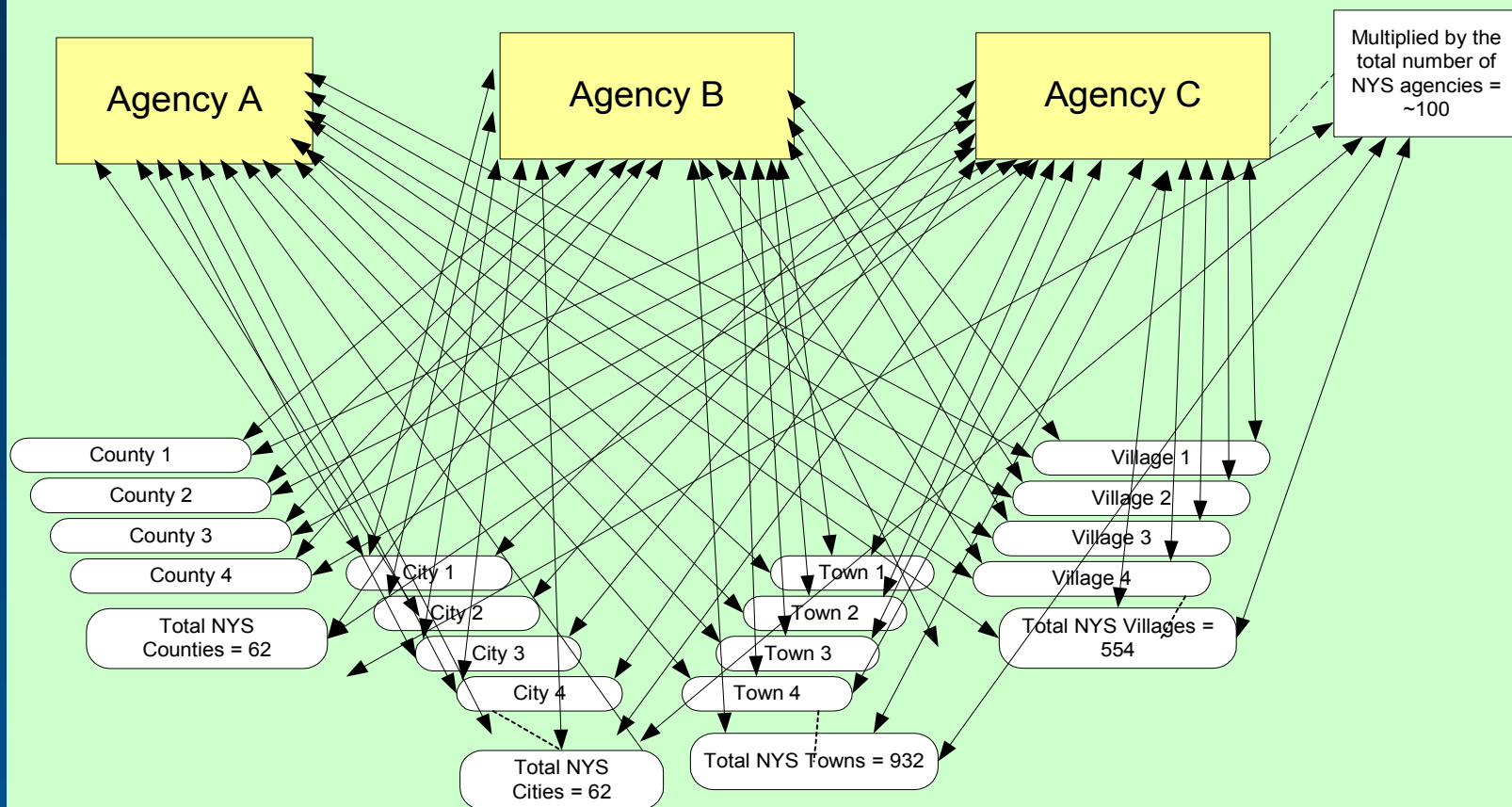
# End-to-end challenges

- 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



# Challenge #4: Integration

Simplified depiction of existing intergovernmental information systems in New York State



# 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

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- Perspectives
- Value propositions
- Money and other resources
- Cultures
- Missions
- Practices
- Professions

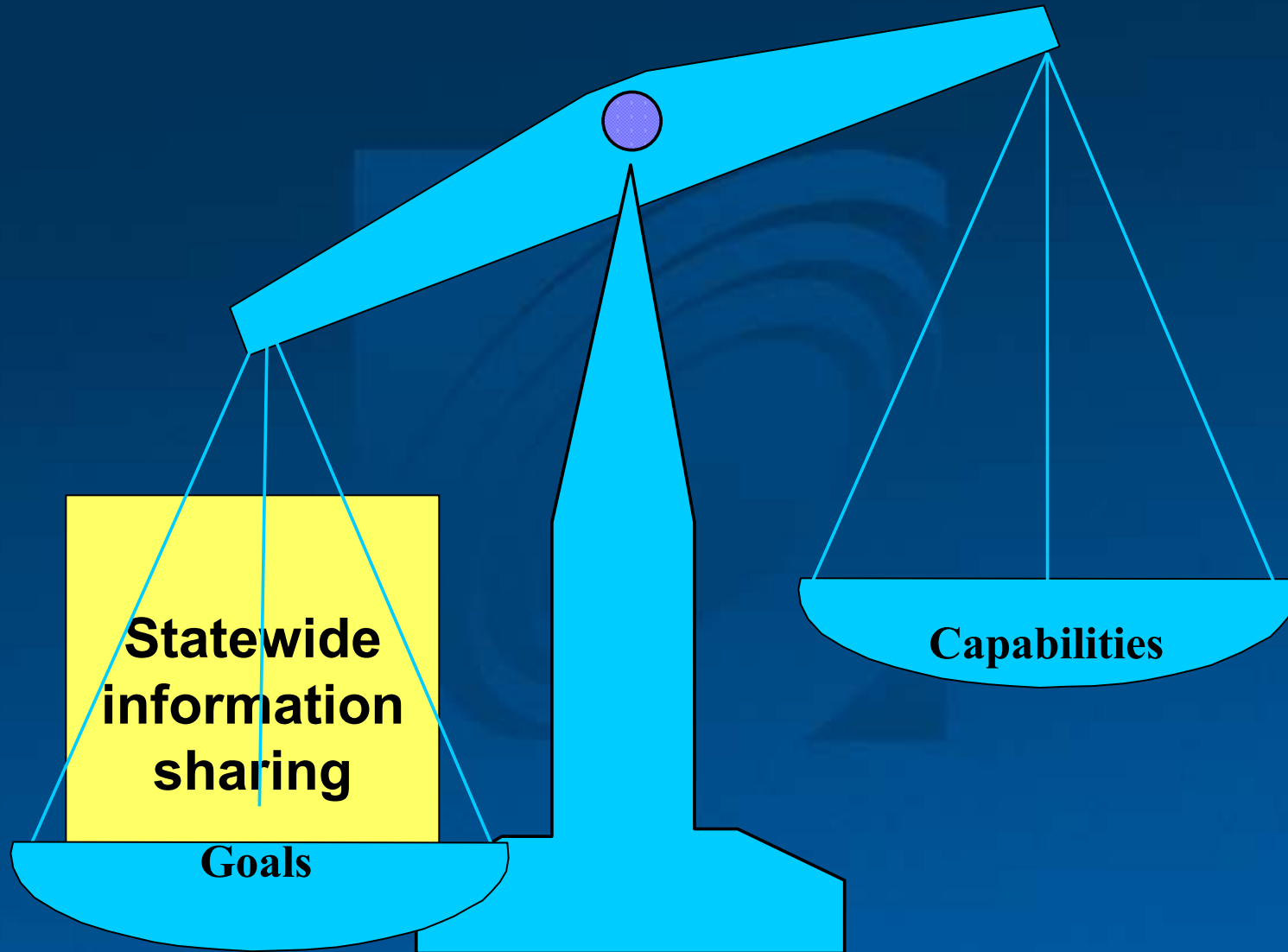


# Integration Capability Dimensions

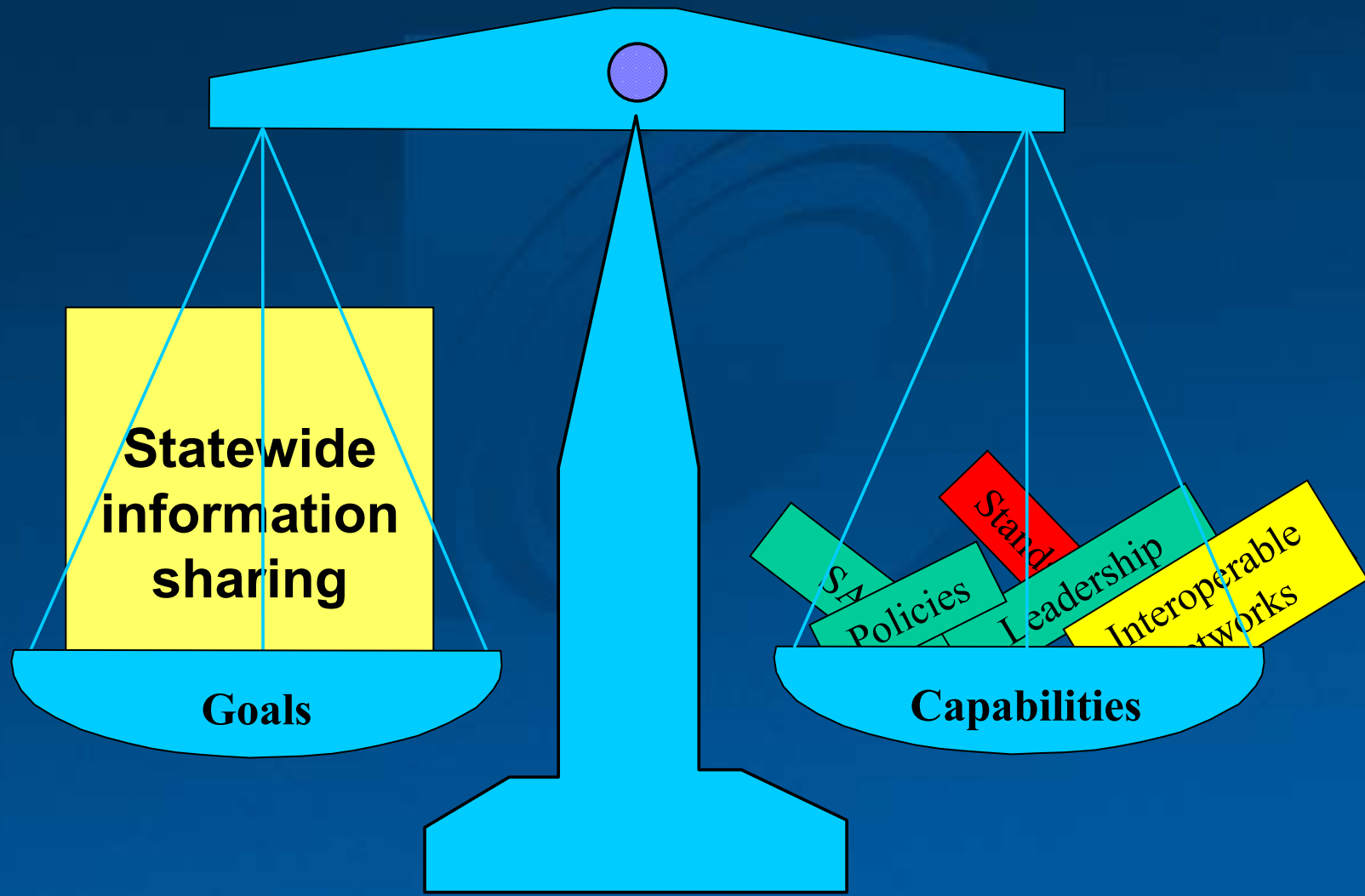
- Business model and architecture
- Collaboration readiness
- Data assets and requirements
- Governance
- Information policies
- Leaders and champions
- Organizational compatibility
- Performance evaluation
- Project management
- Resources
- Secure environment
- Stakeholder interests
- Strategic planning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



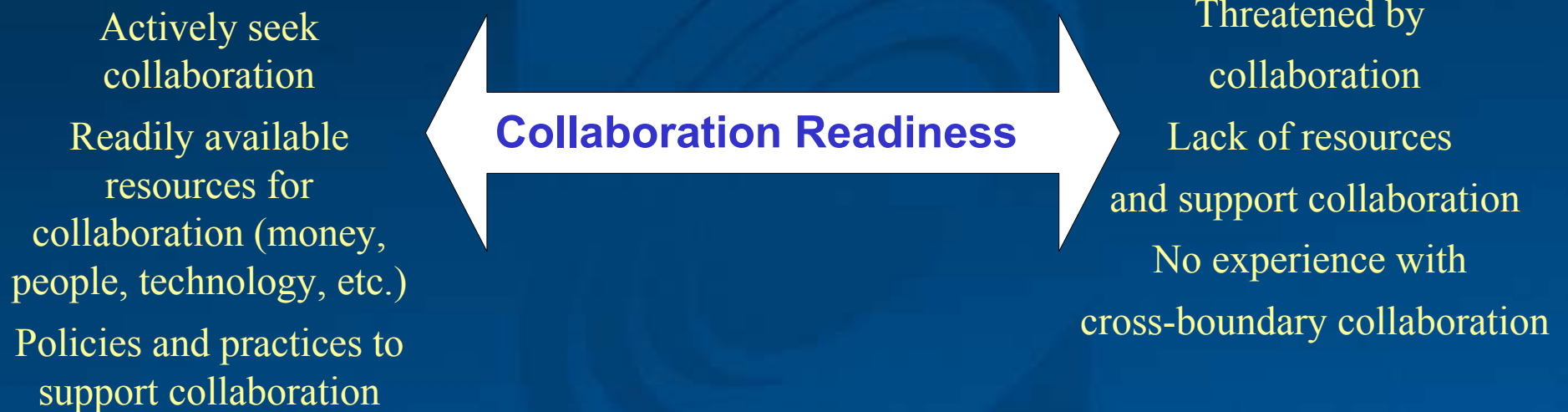
# Justice Information Sharing



# Justice Information Sharing



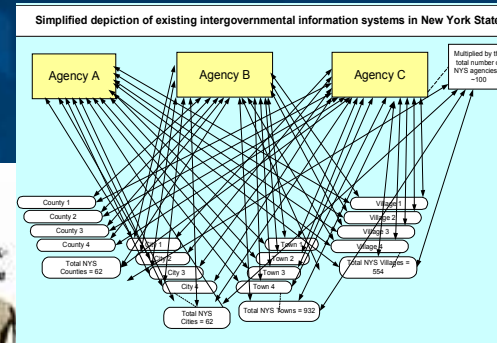
# Dimension Example



# Dimension Example



# Meeting the challenges



Integration

End-to-end



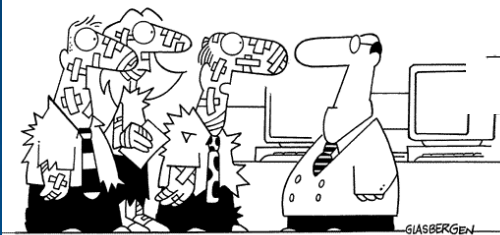
Information

Complexity

# Meeting the challenges

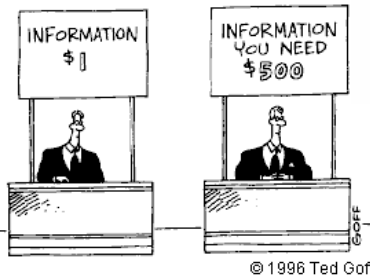
Governance and External Focus

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“Frankly sir, we’re tired of being on the cutting edge of technology.”

Complexity

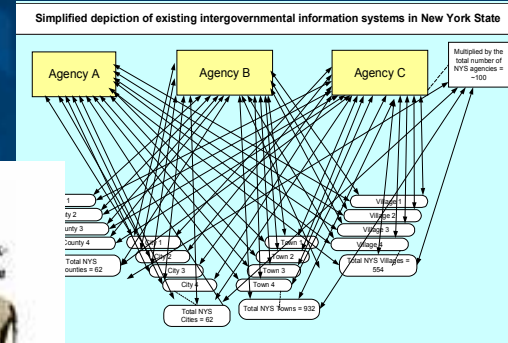


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Information



End-to-end

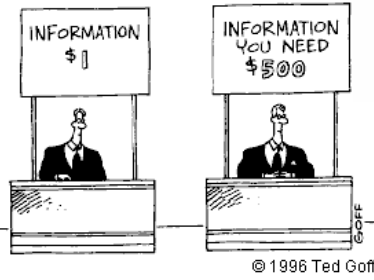
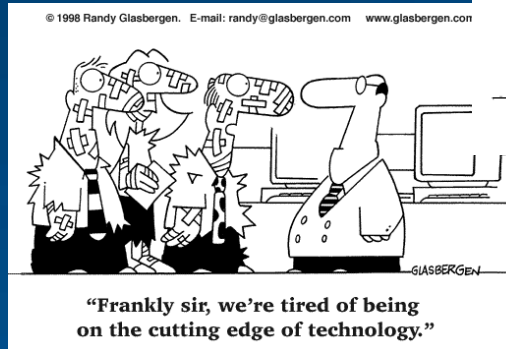


Integration

# Meeting the challenges

Emphasis on  
Use and  
Context

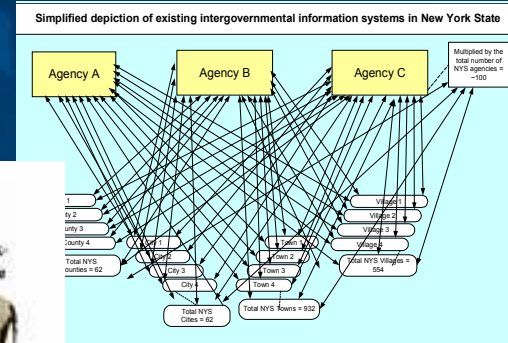
Governance and  
External Focus



Information



End-to-end



Integration

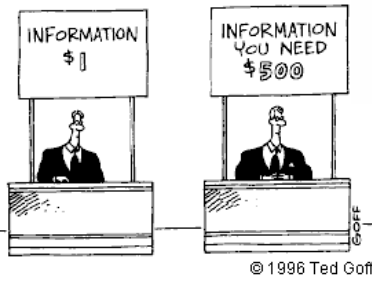
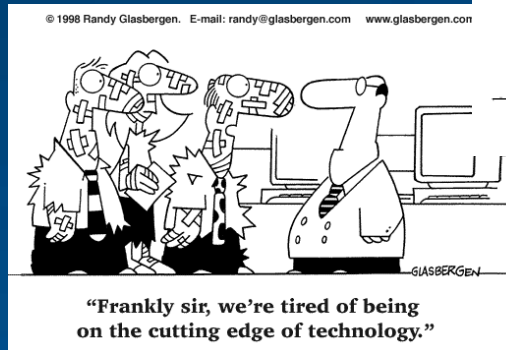
Complexity

# Meeting the challenges

Process Thinking and Action

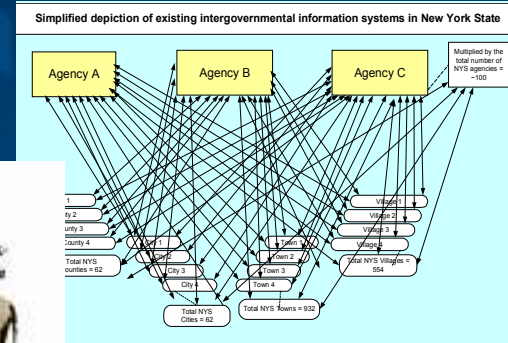
Emphasize Use and Context

Governance and External Focus



End-to-end

Information



Integration

Complexity

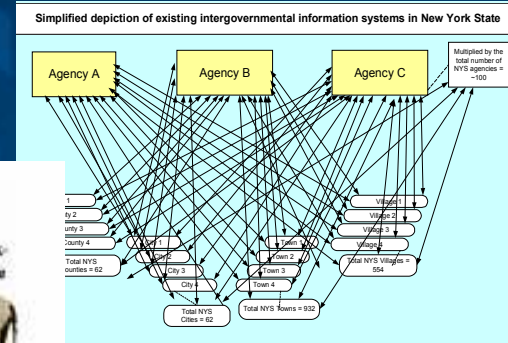
# Meeting the challenges

## 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 . . .



# Interconnectedness

Systems thinking is . . . seeing wholes . . . seeing interrelationships rather than things, seeing patterns of change rather than static “snapshots.” . . .  
. . . systems thinking is a sensibility — for the subtle interconnectedness that gives living systems their unique character.

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**Thank you!**

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