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Explore • Empower • Innovate

Information and Knowledge Sharing: Critical Capabilities for Building Innovation Capacity

Taipei, Taiwan
August 30, 2016

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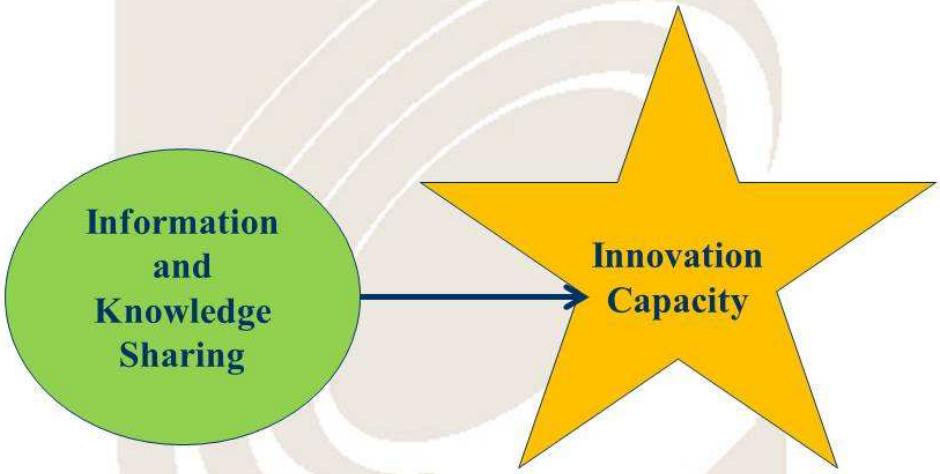
Governing Assumption



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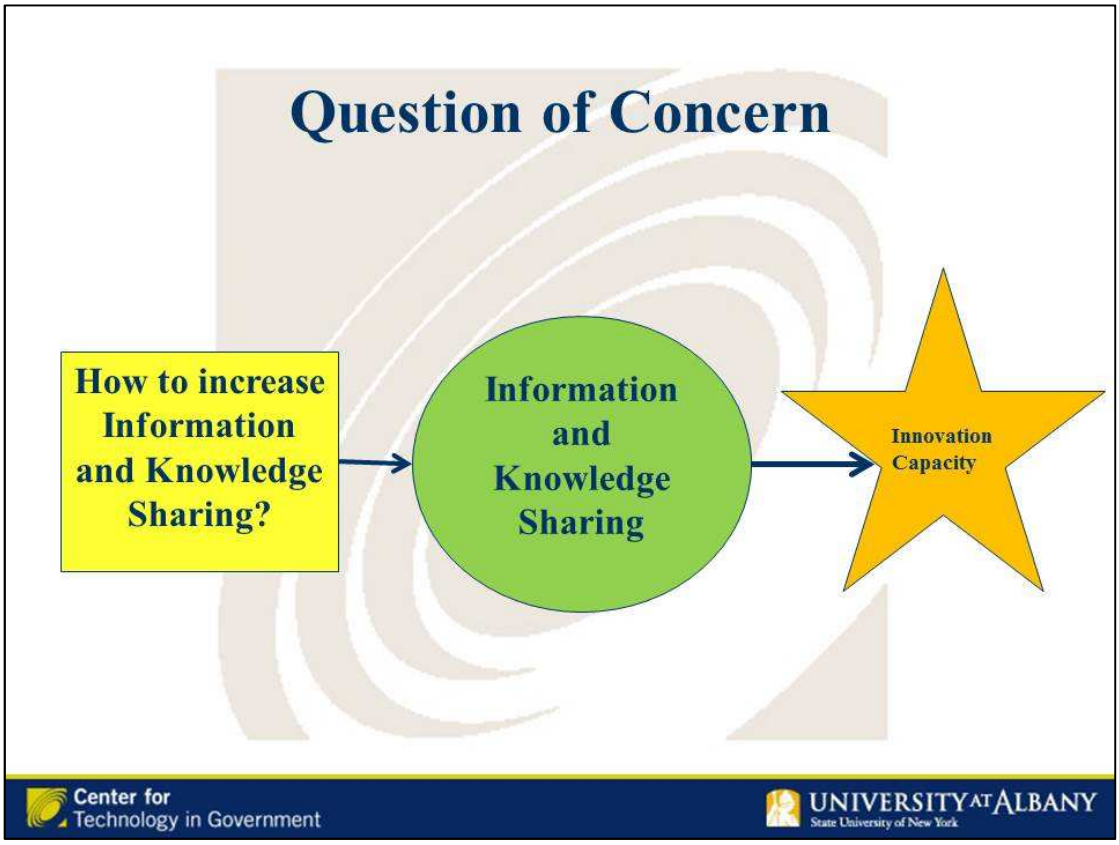

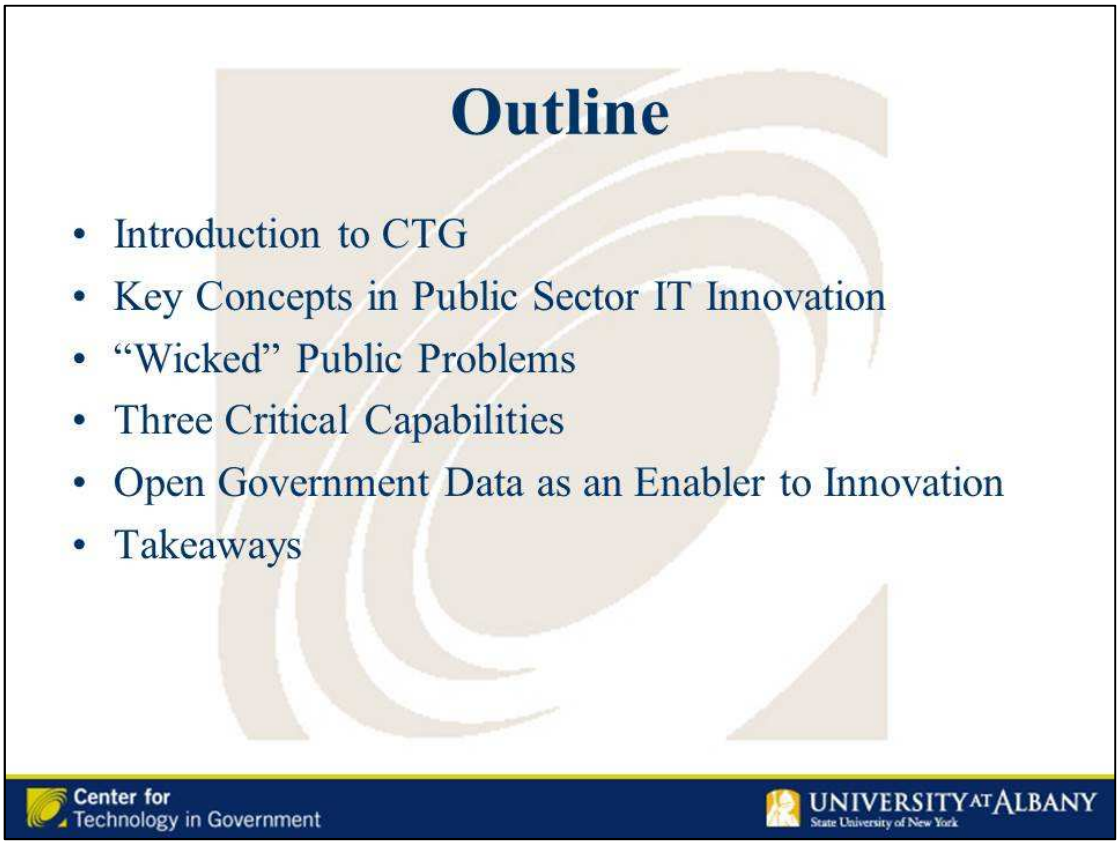

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January 31, 1993 Milestones & Honors

Governor Mario Cuomo Initiates a Center for Technology in Government

"We will set up a **Center for Technology in Government** to pursue new ways of applying technologies directly to the practical problems of information management and service delivery in the public sector — focusing on increasing productivity, reducing costs, increasing coordination, and enhancing the quality of government operations and public services."

—New York State Governor Mario Cuomo, 1993 State of the State Address

Celebrating 20 Yrs.

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Key Initiatives

- Opening Government
- Governing the City
- Data as a 21st Century Currency
- NYS as an Innovation Lab
- Leading an International Research Community

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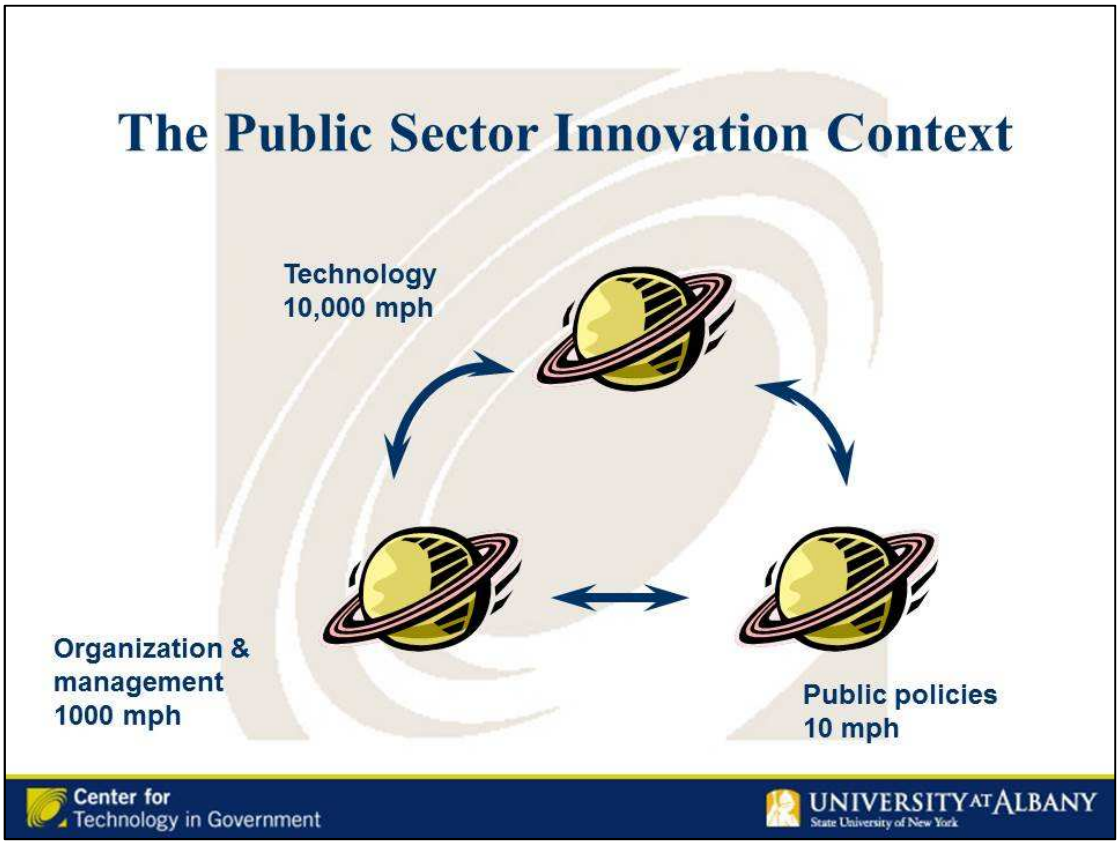

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Key Concepts for Today

- Innovation
- Public Value
- Context and Complexity
- Cross Boundary Information Sharing
- Capability

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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)

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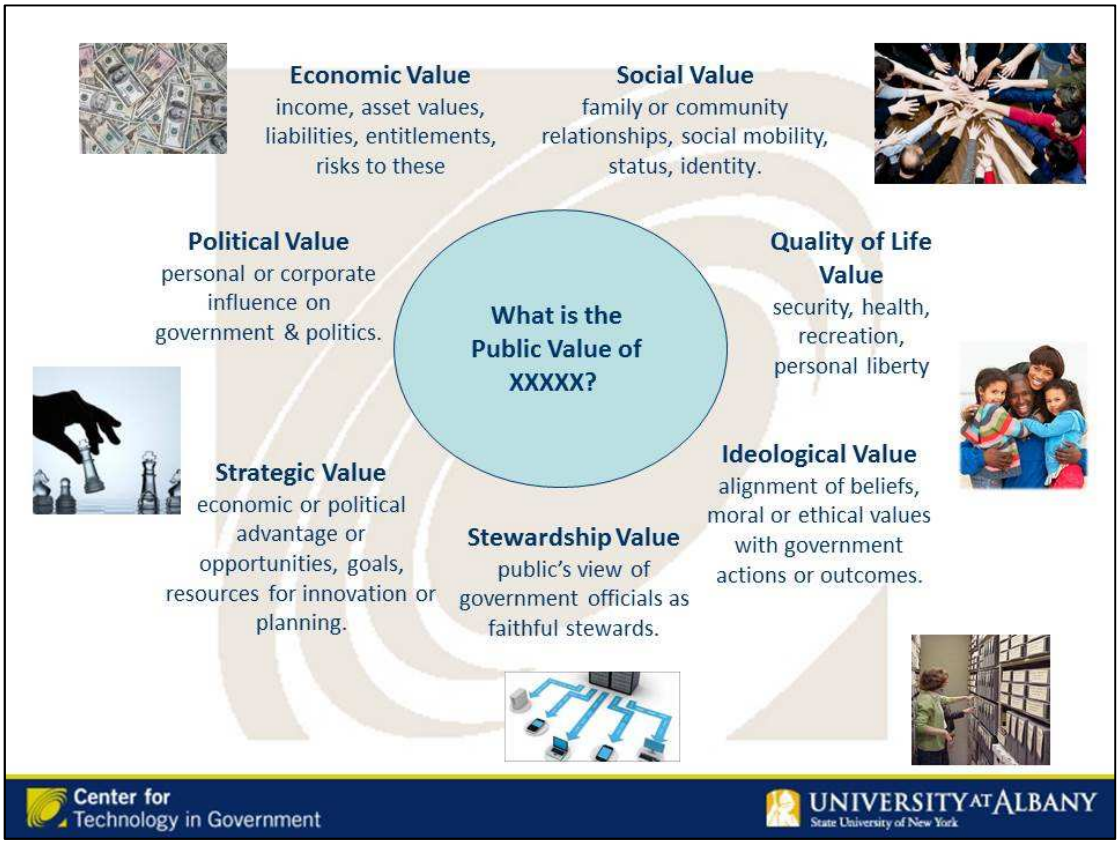

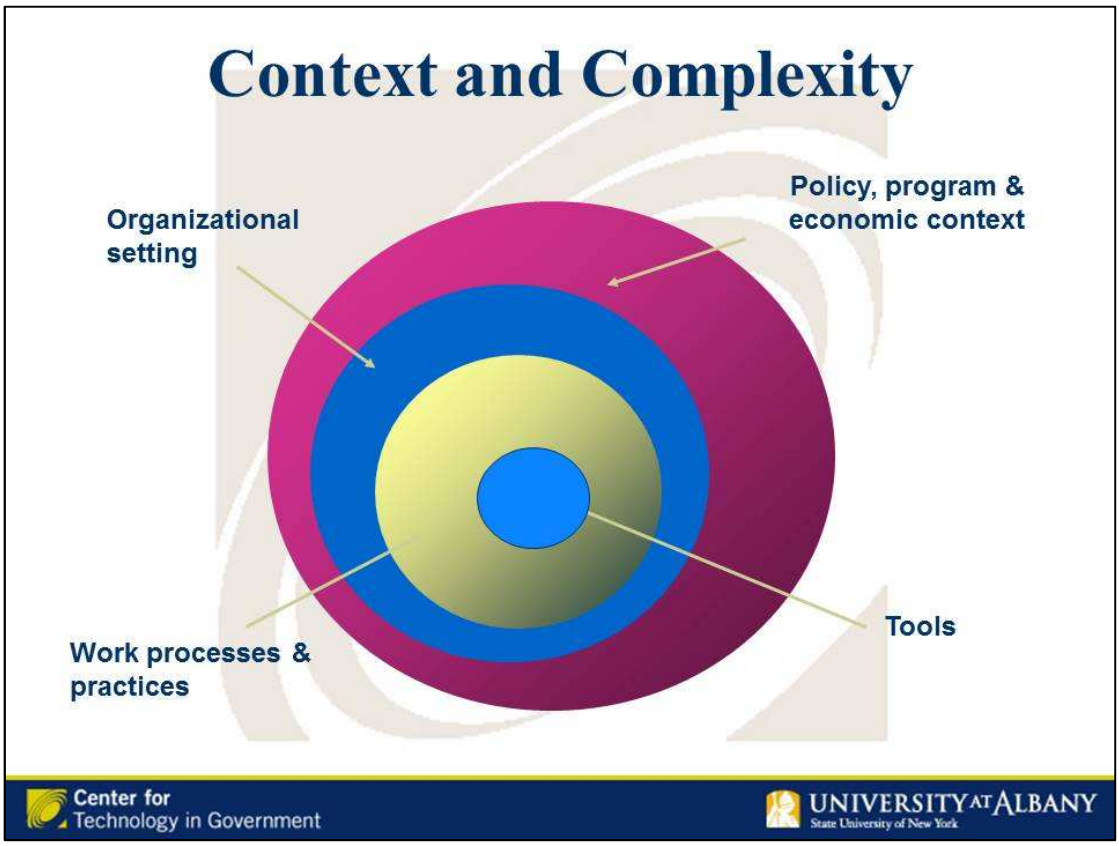

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Information and Knowledge Sharing

The voluntary act of making information available to others.

Davenport and Prusak, 1997

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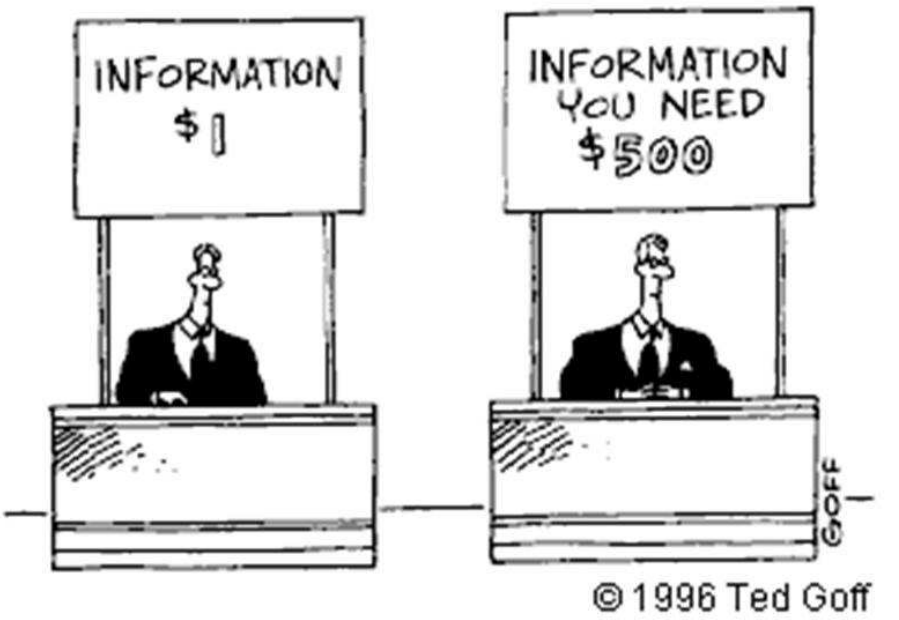

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Flu Pandemic

- "The cost of not being prepared to share information, to coordinate our responses, and to work together is well understood. If we are unprepared, the next pandemic will cause incalculable human misery."
  - 2007 WHO Meeting.

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Stability of Financial Markets

- Non-systematic and ad-hoc information sharing practices among financial market regulatory agencies are regarded as key contributors to the 2008 financial crisis
  - BIS, 2010; Bradley, 2011; Brummer, 2010; FSB, 2011; IMF, 2007; Pardo, Sayogo, & Canestraro, 2011; Tarullo, 2010.

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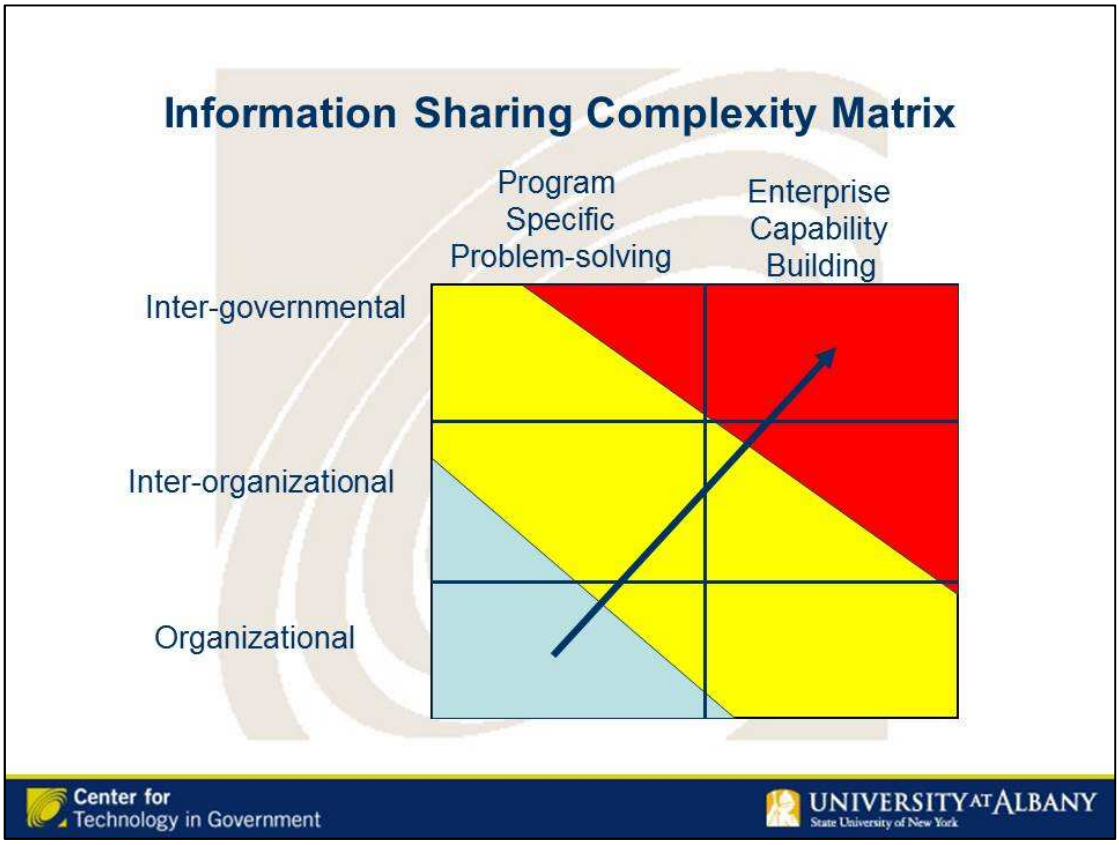

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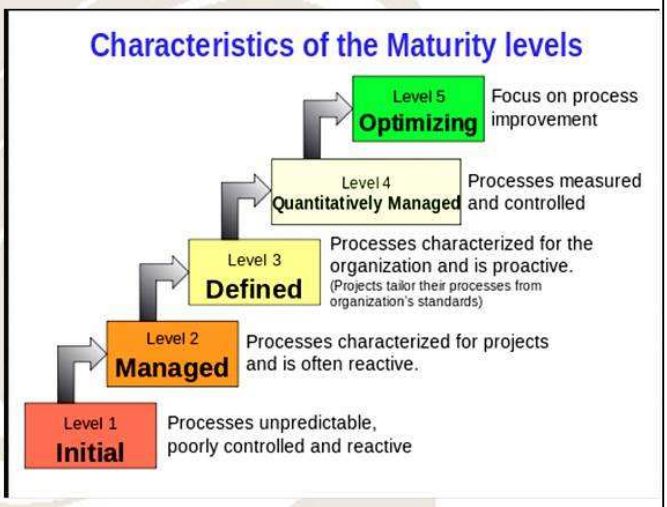
Capability Models:
Maturity Based Models

- Linear, cumulative, and static.
- Useful for stable contexts and more routine process management.



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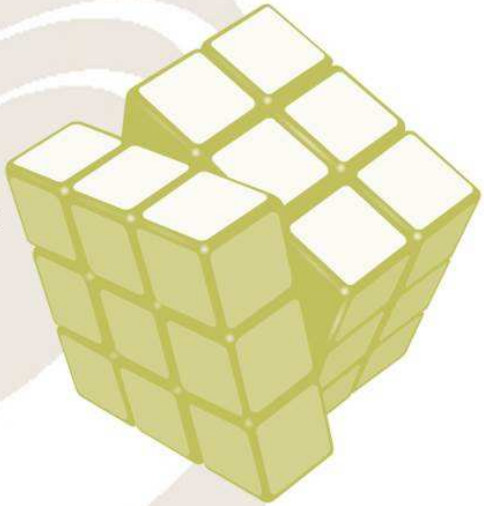
Capability Models:
Complementary Multidimensional Models

- Non-linear, dynamic, context specific.
- Useful for more turbulent contexts and non-routine or innovative processes.



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Dimensions of Information Sharing 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

Source: www.ctg.albany.edu/publications/guides/infosharing_toolkit/infosharing_toolkit.pdf

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Balancing Capabilities

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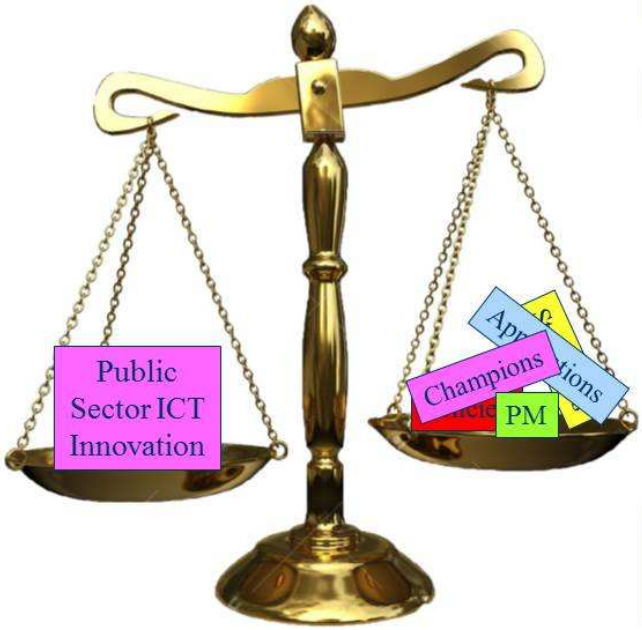
Balancing Capabilities



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Capability

- **Multidimensional**
  - Made up of several types that contribute to overall capability.
- **Complementary**
  - High or low levels can result from different combinations of factors and high levels in some can often compensate for lower levels in others.
- **Dynamic**
  - Can increase or diminish due to changes within an initiative or in its external environment.
- **Specific to its setting and domain of practice**
  - Some elements of capability apply to all settings, but for any particular project capability depends on specific objectives, project demands, and environment.

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"Wicked" Public Problems . . .

- Complex and embedded in cultural context(s)
- Organic, not divisible into manageable parts
- Information-intensive, process-intensive
- Cut across domains of knowledge and action
- Demand innovation, experimentation, learning and adjustment
- Require multi-faceted understanding as a prerequisite to action

Rittel and Webber

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A New Data Paradigm Required

- In order to bring government data to data scientists and public policy professionals every type of public entity must think differently about how they generate, manage, use, and share data.

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Challenges to Information and Knowledge Sharing

- Clarity of roles and responsibilities
- Trust; turf; resistance to change
- Lack of leaders and champions
- Lack of understanding the purpose of the sharing
- Lack of:
  - Quality data
  - Standards and metadata
  - Policies
  - Experience
- Fear of:
  - Loss of power
  - Future data use by others
  - Exposure

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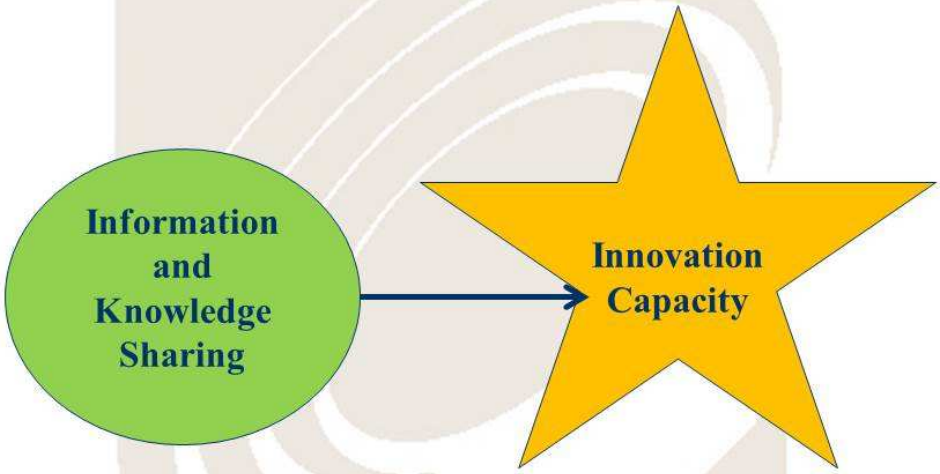
Governing Assumption



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Balancing Capabilities

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Three Critical Capabilities

- Capability to create and sustain a pervasive and coherent data culture.
- Capability to ask relevant, well-designed and useful questions
  - Such questions are the why questions. Not just will or did something work; but why or why not?
- Capability to use the results of data analytics to inform decision making.

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Capability to create and sustain a pervasive and coherent data culture

- Data aware executives and decision makers.
- Comprehensive data governance.
- Sophisticated data management policies and practices.
- Understanding of the value of data sharing.
- A robust collaboration and data sharing infrastructure – policy, management, technology.

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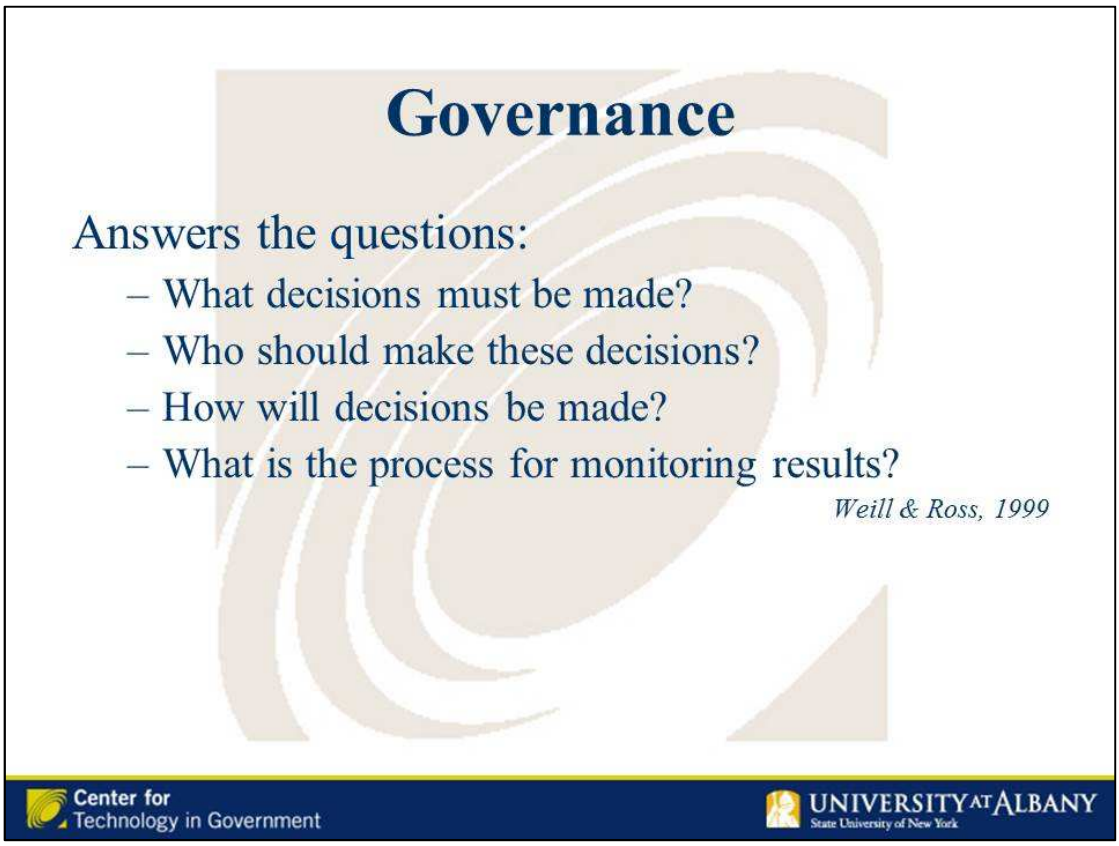

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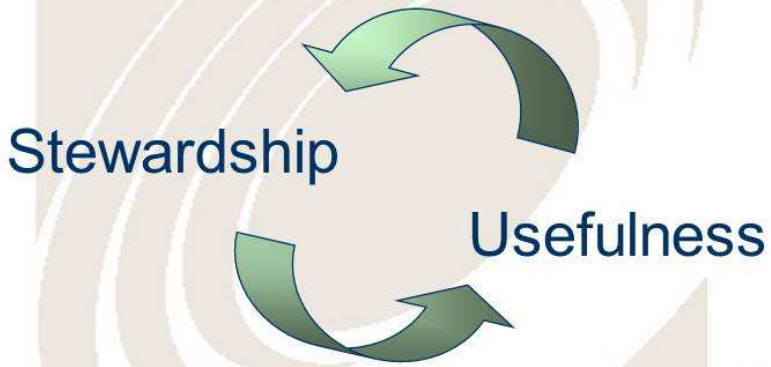
Principles of information use within government



Dawes, 2010

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Capability to ask relevant, well-designed, and useful questions

- Build understanding of policy informatics.
- Prepare public leaders and managers to demand new lines of inquiry that leverage the vast data assets and the new and emerging technologies.
- Prepare public managers to engage in cutting-edge policy analytics programs.

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Policy Informatics

The transdisciplinary study of how computation and communication technology leverages information to better understand and address complex public policy and administration problems and realize innovations in governance processes and institutions

Center for Policy Informatics at Arizona State University

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Designing Questions that Provide Relevant and Actionable Results

Complex societal challenges

Public policy problems

Public management responsibilities

Data and information expansion

Technology developments

Analytical advances

What do public leaders and managers need to know?

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Policy Analytics

Will Gorr, 2014, CMU

- ***Information systems*** for collecting, processing, and making data available for analysis;
- ***Probability and statistics*** for modeling behavior in social and other complex systems;
- ***Machine learning and data mining methods*** for detecting and predicting behavior/patterns in social and other complex systems; and
- ***Decision frameworks, models, and methods including policy analysis, management science, and financial analysis.***

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Capability to use the results of data analytics to inform decision making

- Examine policy making as a process and look for the places to integrate analytics.
- Prepare policy makers and the public to require multi-faceted understanding as a prerequisite to action.
- Prepare public leaders and decision makers to integrate analytics into the policy making process.

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http://www.policy-community.eu/

Policy Informatics Network

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www.ctg.albany.edu/projects/egovpolinet

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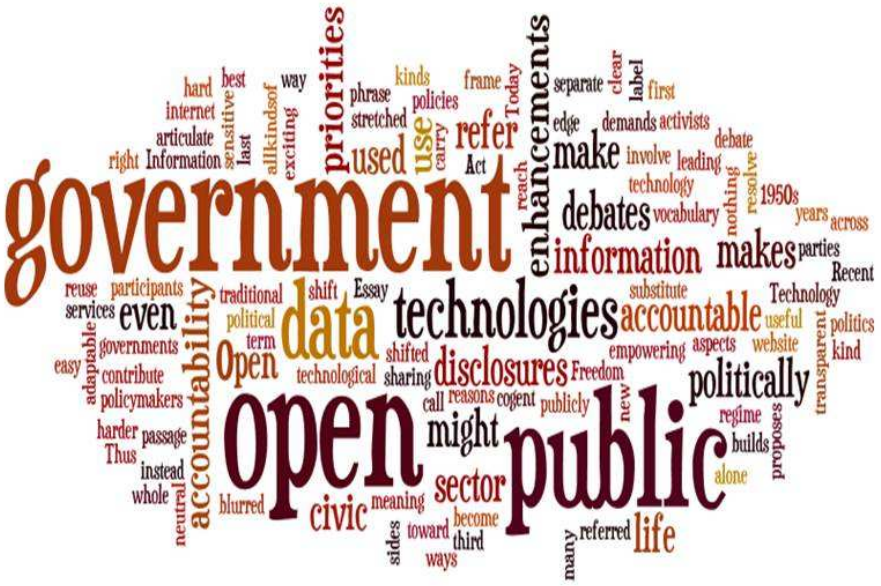

Open Government

Enabling Public Sector Innovation

- Open Data and Transparency may be the most powerful levers of 21st century public policy.
- Open Data enables accountability; it improves outcomes and productivity in key services through informed comparison; it transforms social relationships – empowering individuals and communities; and it drives dynamic economic growth.

– Prime Minister David Cameron (2010)

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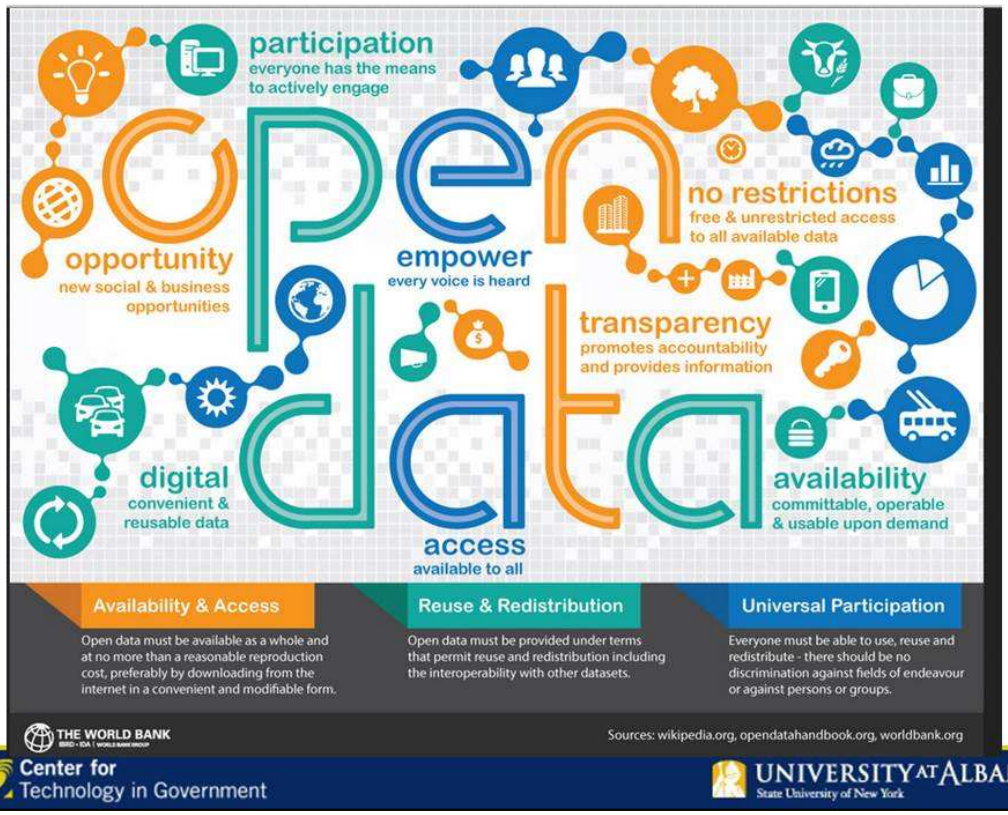

Open Government Data

Enabling Innovation

Create public value through the use of open government data in newly designed data-informed policy making processes.

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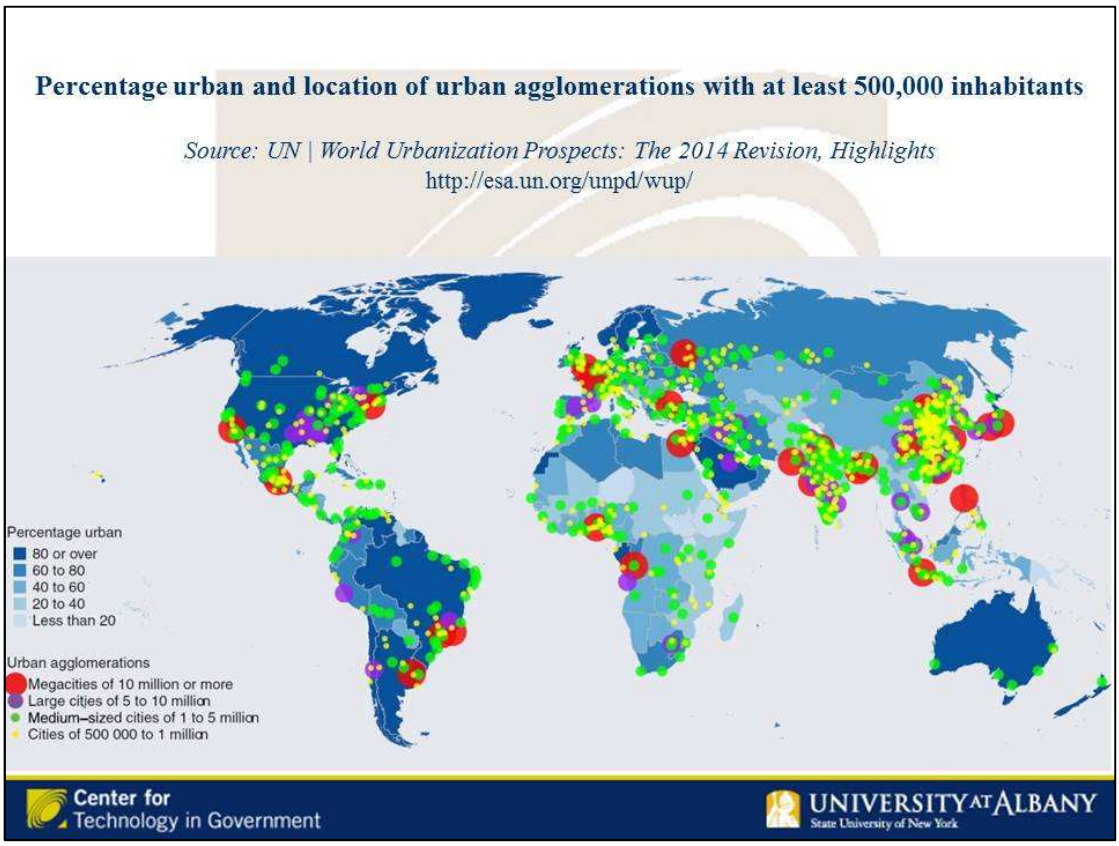

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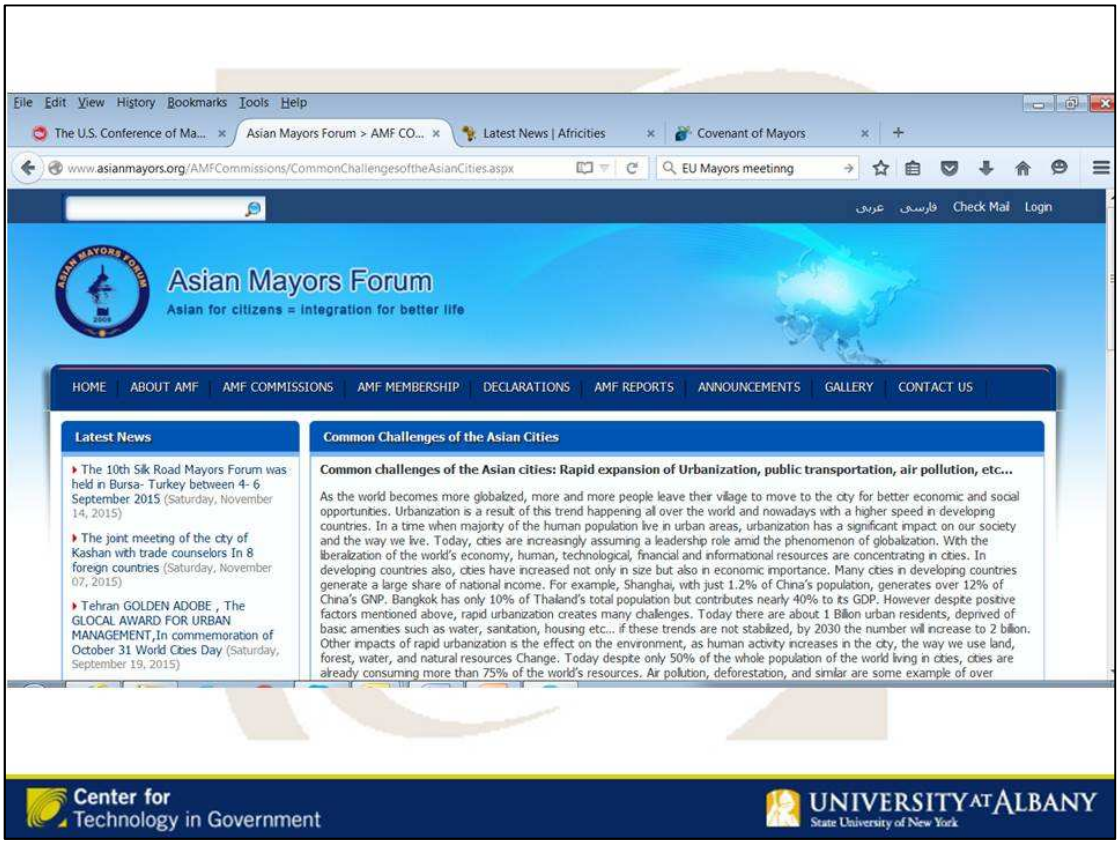

Asian Mayors' Agenda

- Actions
  - Improve the urban infrastructure
  - Strengthen local governments
  - Implement new approaches to alleviating poverty and supporting communities
  - Develop more environmentally friendly cities
  - Improve citizen's quality of life
- Enablers
  - More effective urban governance
  - **More collaboration between major cities with the purpose of experience and information exchange**

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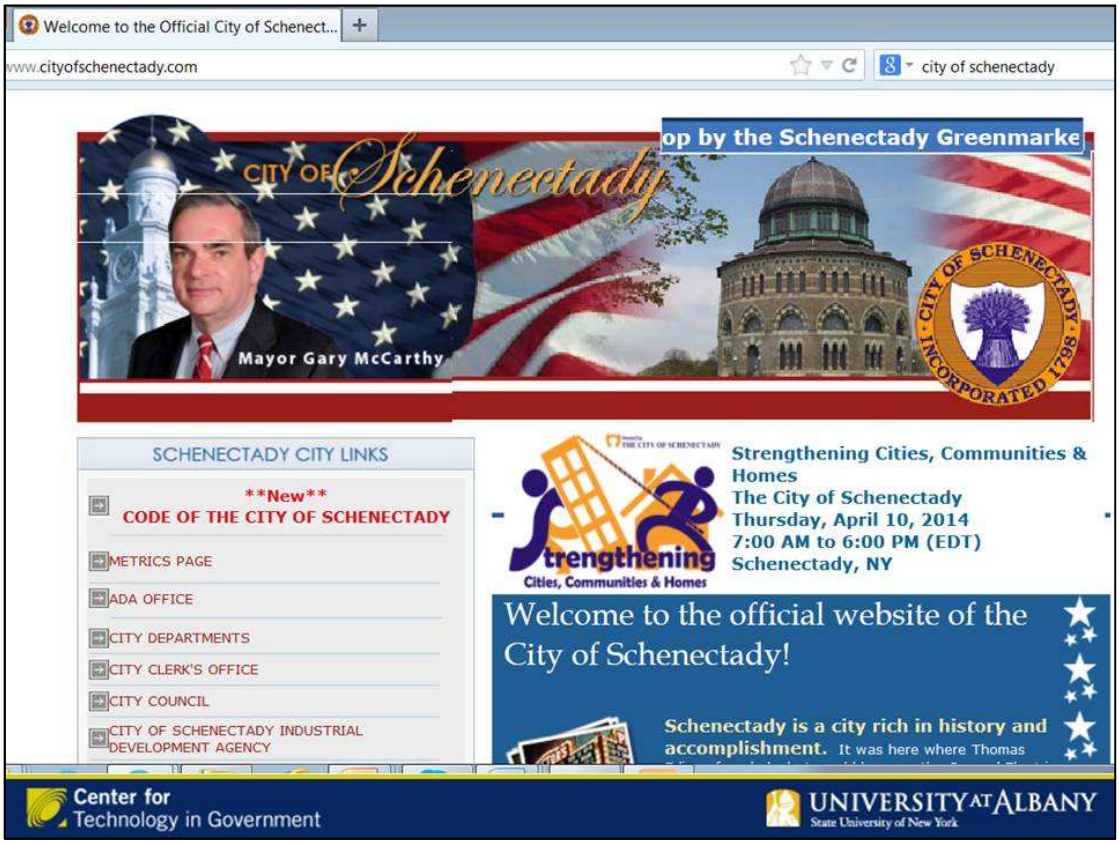

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Capability Gaps

- Intervening in the process is almost impossible due to a lack of information about the status of any single property and the ability to connect one property to another and ideally, to the property owner.

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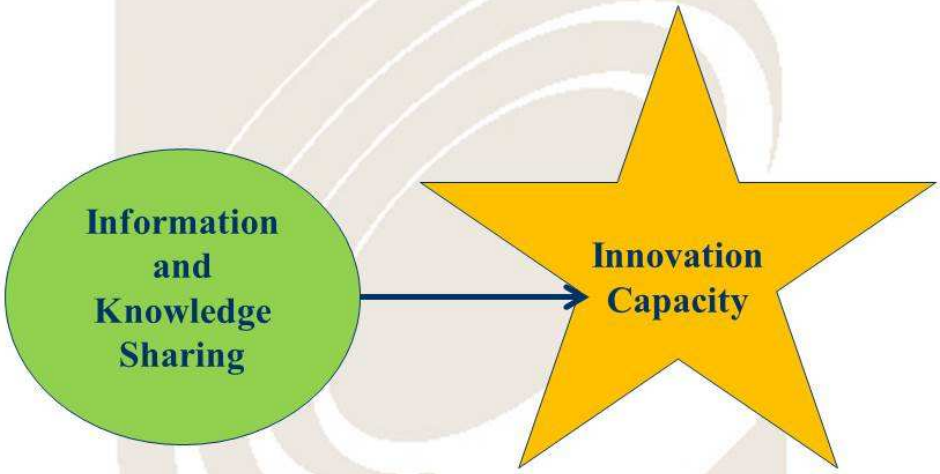
Governing Assumption



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Three Critical Capabilities

- Capability to create and sustain a pervasive and coherent data culture.
- Capability to ask relevant, well-designed and useful questions
  - Such questions are the why questions. Not just will or did something work; but why or why not?
- Capability to use the results of data analytics to inform decision making.

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