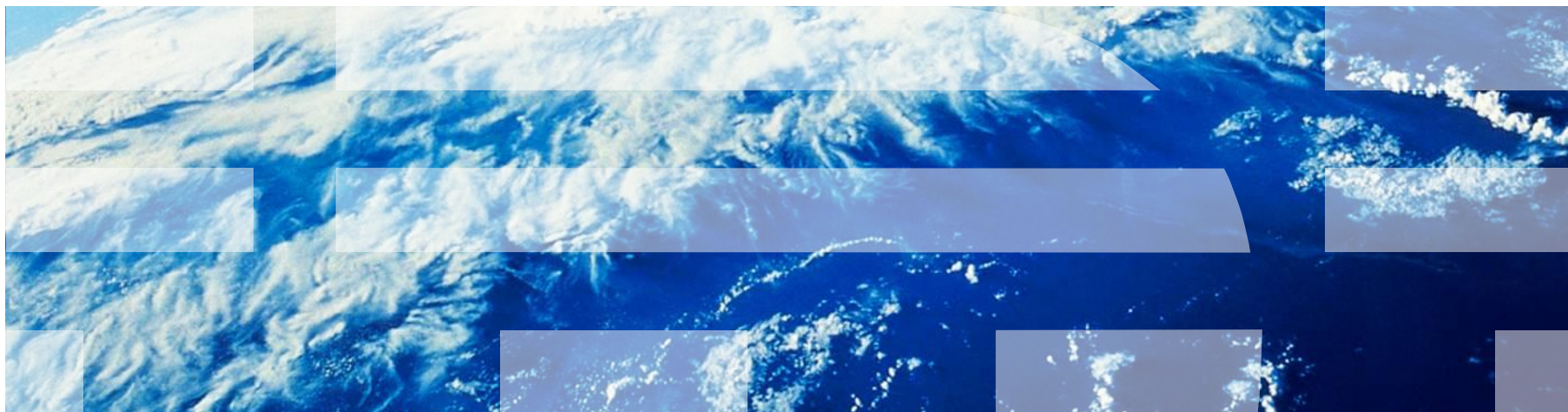


Smarter Cloud for Smarter Government

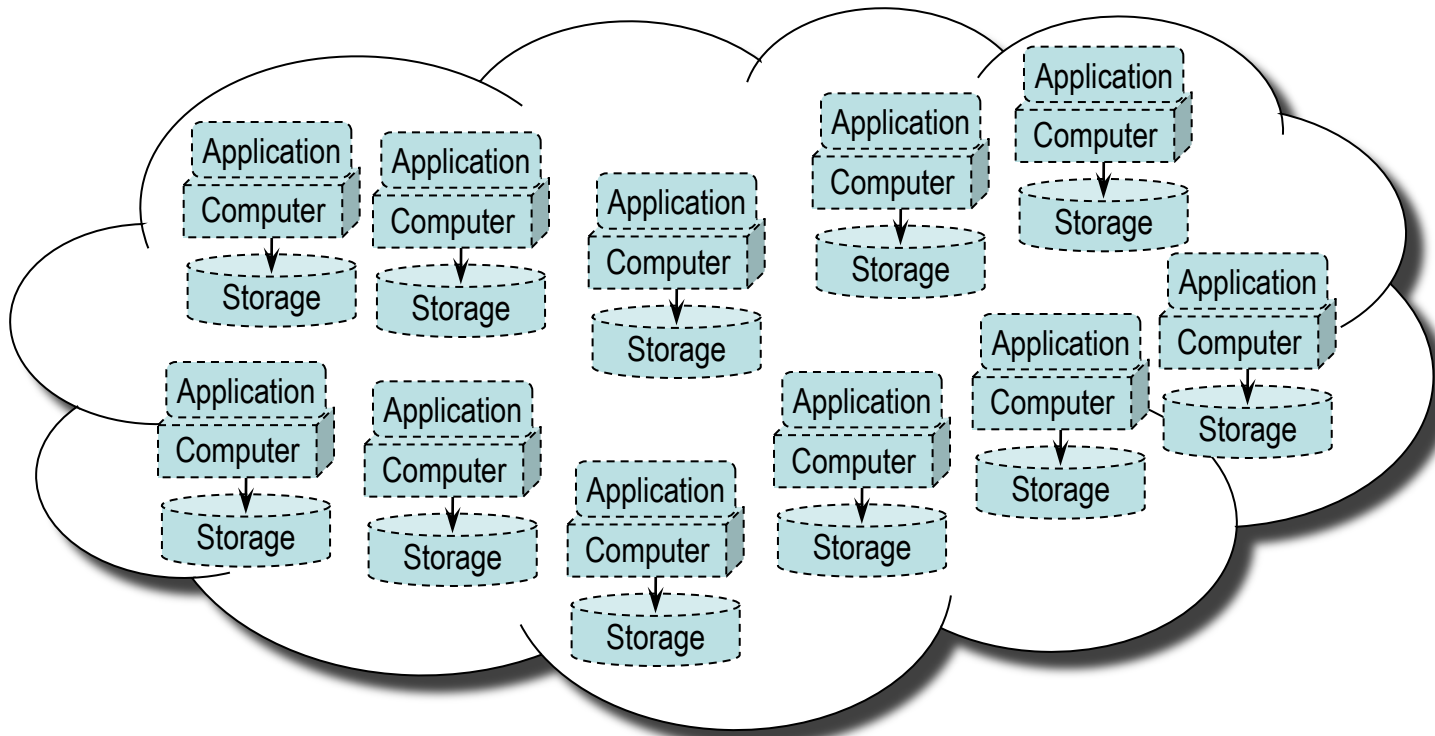
David L. Cohn
Director, Business Informatics
IBM Research



Cloud Computing

IT delivery leveraging economies of scale for efficiency & ease of use

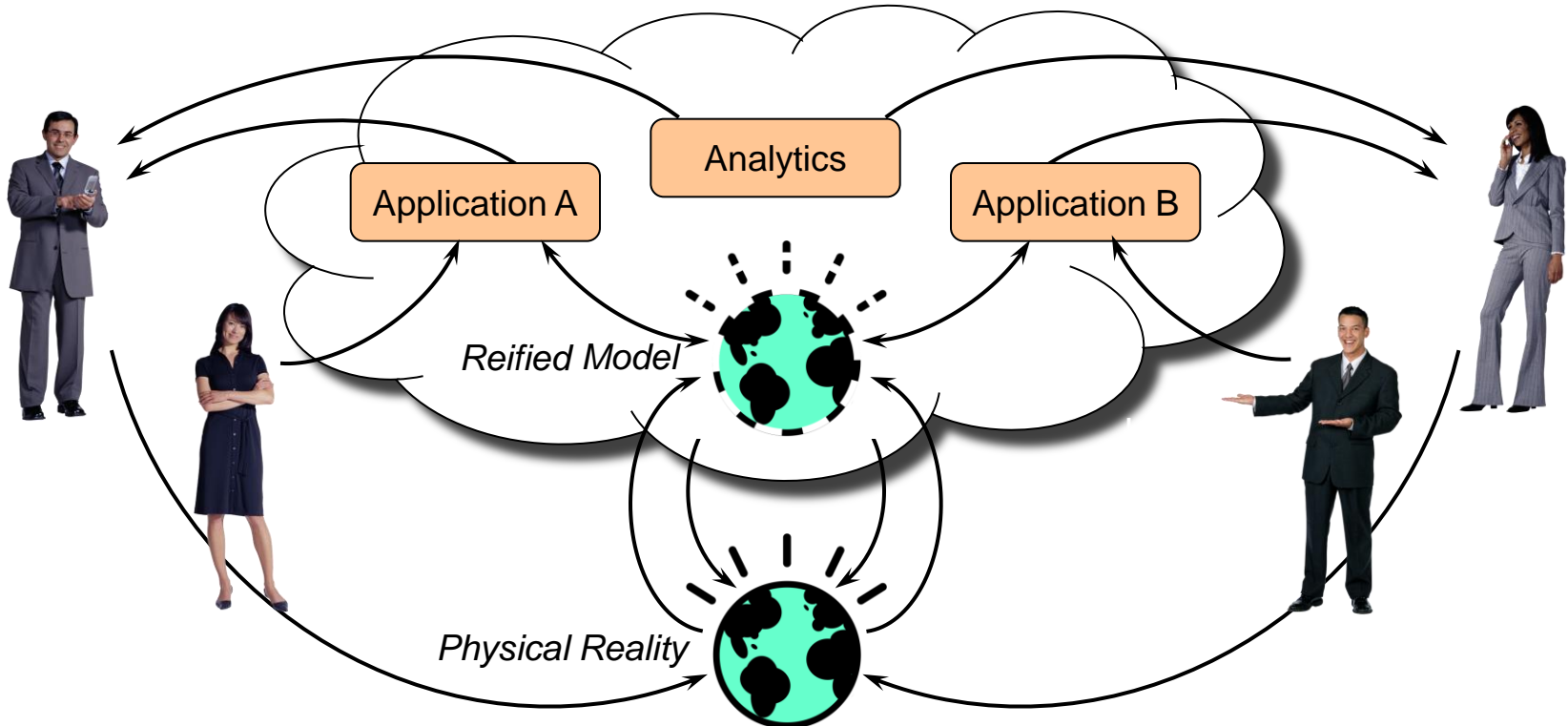
- **Classic computing** locates hardware & data on clients' sites
- **Cloud** creates off-site virtual images of both for improved efficiency
 - Many standard virtual images support many clients & provide scale



Smarter Cloud

Going beyond cloud's efficiency & Smarter Planet's effectiveness

- **Smarter Planet** – physical reality that is *Instrumented, Interconnected & Intelligent*
- **Smarter Cloud** uses information model to be *Inclusive, Insightful & Impactful*
 - Providing a *reified model* that substitutes for key aspects of the physical reality



Smarter Cities Cloud Platform

Smarter Government needs provide basis for IBM's Smarter Cloud platform

▪ Software

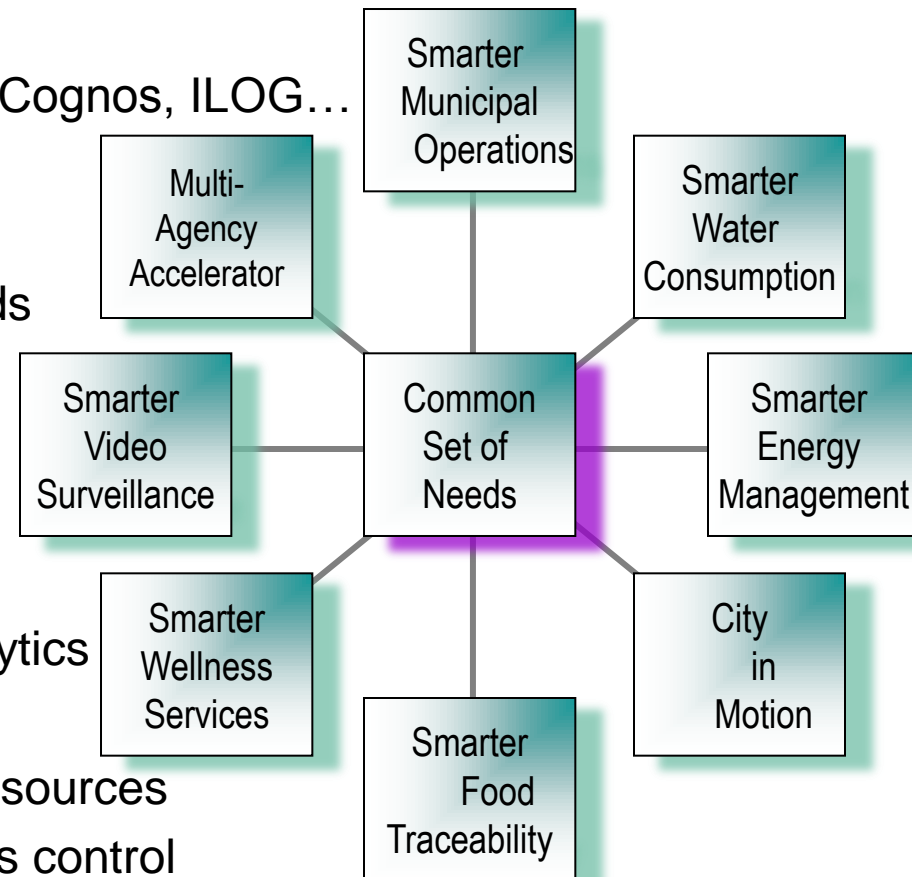
- Basic software stack: WAS, DB2, IIS, Cognos, ILOG...
- Support for 3rd party applications

▪ Services

- Provide admin & consumer dashboards
- Manage sensors & actuators
- Scale hosting platform
- Manage services & solutions

▪ Workload characteristics

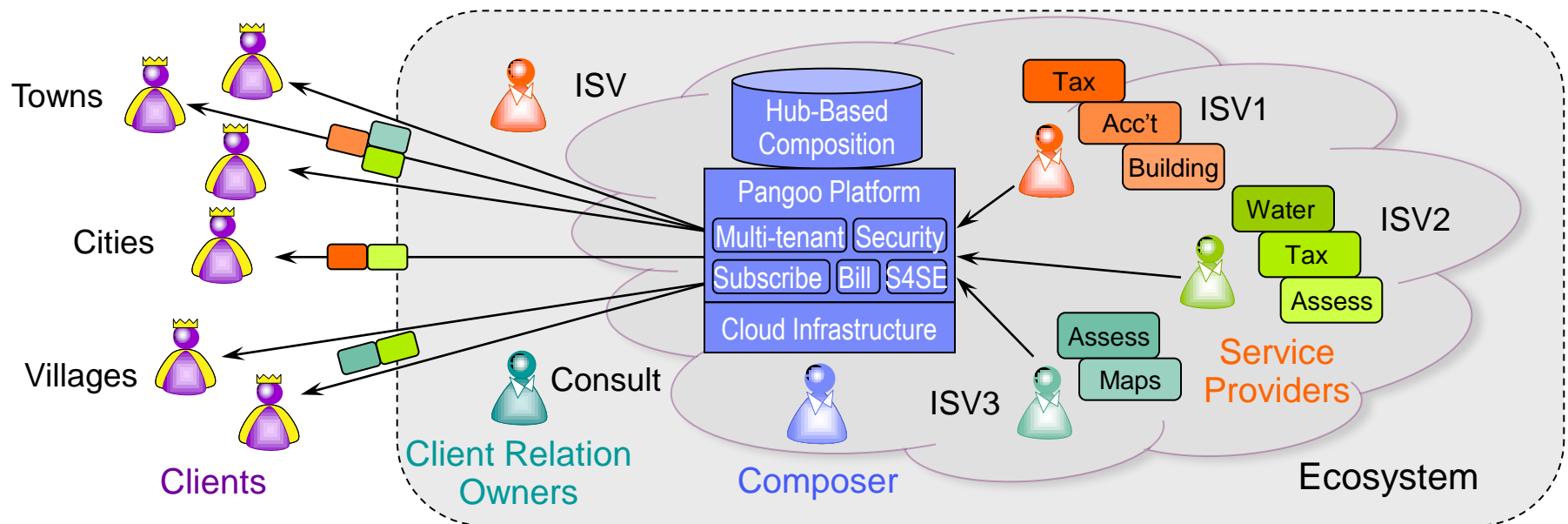
- Models & tools for optimization & analytics
- Handle bursty workloads
- Receive-from & send-to external data sources
- Security – VPN, authentication, access control



Pangoo

Demonstrating Smarter Cloud platform & ecosystem for SMB clients

- **Ecosystem** includes Composer, Clients, Providers & Client Relation Owners
 - Smarter Cloud allows integration of independent services
 - Local governments using Pangoo to encourage software development
 - Telcos, post office & governments considering CRO roles



Smarter Sustainable Dubuque

IBM & Dubuque, Iowa motivating citizens through Smarter Cloud insight

■ Partnership

- IBM – Smarter Cloud service
- City of Dubuque – incentives to conserve
- Dubuque 2.0 – community engagement
- Volunteers – conservation

■ Initial projects

- Water
- Energy
- City-in-Motion

■ Water conservation experiment

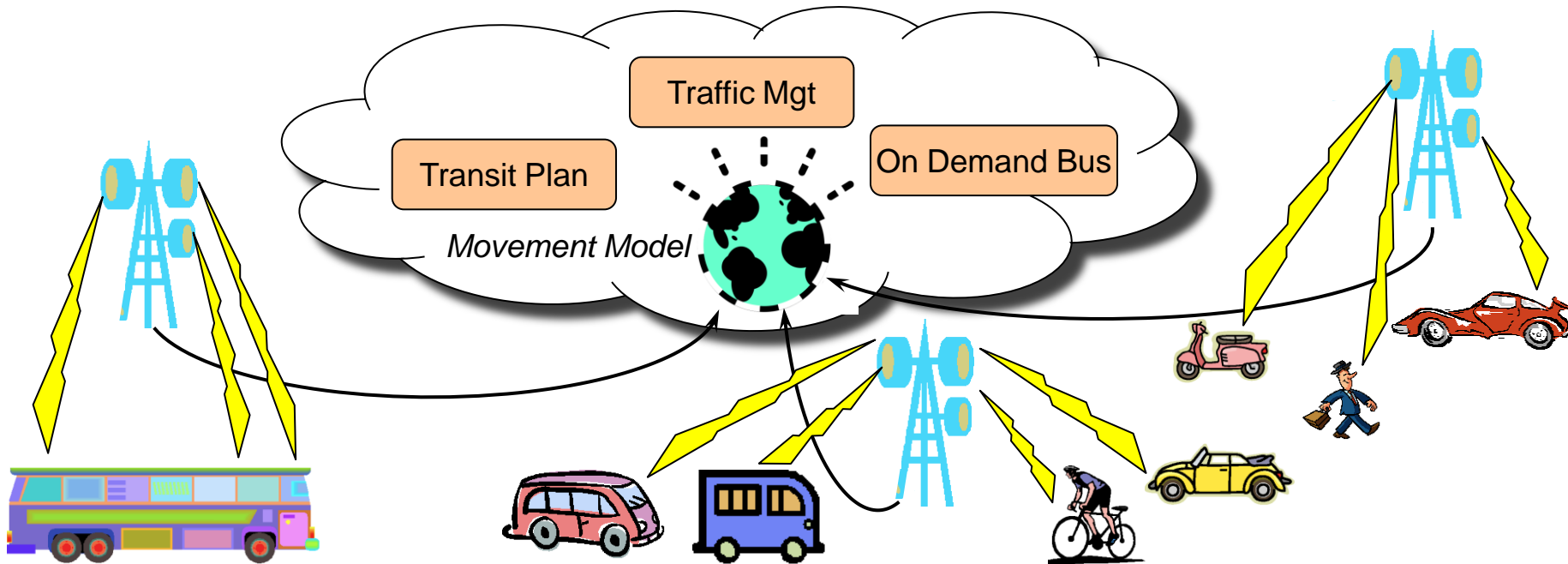
- Volunteer interaction & competitions
- City & businesses help w/ costs
- Assess use of information, insight, incentives



City-in-Motion

Real-time citywide people movement data creates reified movement model

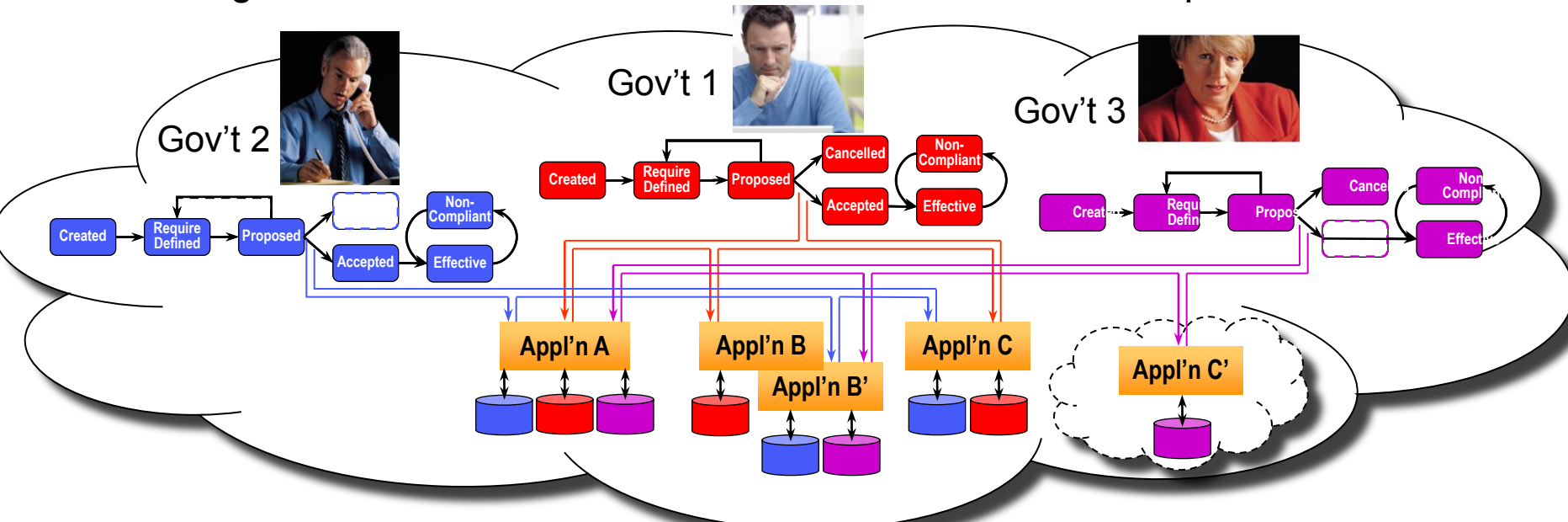
- **Transit systems** do not serve today's city needs
 - Need to improve planning, incent behavior change, respond on demand
- **Cell phone movements** reveal how & where people go
 - Basis for long-term, short-term & instantaneous planning & simulation



Solution Templates

Smarter Cloud client-specific solutions can be built from standard elements

- **Smarter Cloud solutions** will span “siloesd” organizations & applications
 - *Templates* will define common structured useful to many clients
 - Standard elements for efficiency; *variations* for client-specific needs
- **Delivery of social services** provides early example
 - Local governments each deliver services, but each has unique rules



Smarter Cloud for Smarter Government

Perhaps the next “IT revolution” will be led by Smarter Government

- **Transparency** – through insight provided by reified model
 - Management can more easily monitor what is happening
 - Workers will have clearer view of jobs – *know more than they need to know*
 - Citizens will understand – and better support – government
- **Collaboration** – service sharing between government agencies
 - Similar solutions for similar problems – at lower cost
 - Ability to identify & encourage best practices
- **Business Model** – ecosystem will create new roles
 - Support for government operations becomes a global business
 - First-mover opportunities
- **Other industries** – government can become a leader of change
 - Difficult problems encourage new approaches and success sharing
 - Underlying technology & business model will work in all industries