

# Pooling our Resources: *A Practical Approach to Shared Services*



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# Agenda

## 1. What is Shared Services?

- Usual Drivers, Levels of Integration, Organizational Dimensions and Implications

## 2. The UT System Shared Services Initiative

- Drivers and Vision, Stakeholders, Governance Technologies Used, Applications, Benefits, What is on the Horizon

## 3. A Practical Lessons-Learned-Based Roadmap for Implementation

## 4. The Future of Shared Services

- Shared Services to Private Cloud: *A Natural* Transition?



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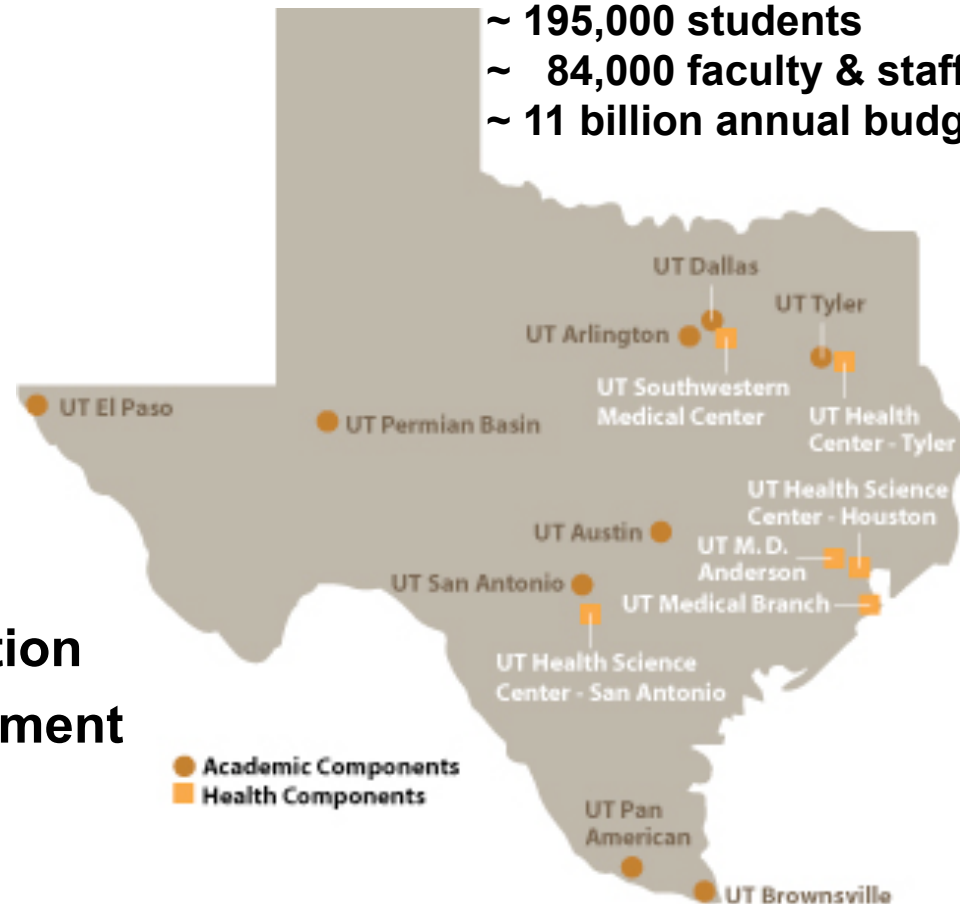
# The University of Texas System

## MISSIONS

- Research
- Instruction
- Patient Care
- Public Service

- 9 Academic Institutions
- 6 Medical Institutions
- U. T. System Administration
- U. T. Investment Management Company (UTIMCO)

~ 195,000 students  
~ 84,000 faculty & staff  
~ 11 billion annual budget

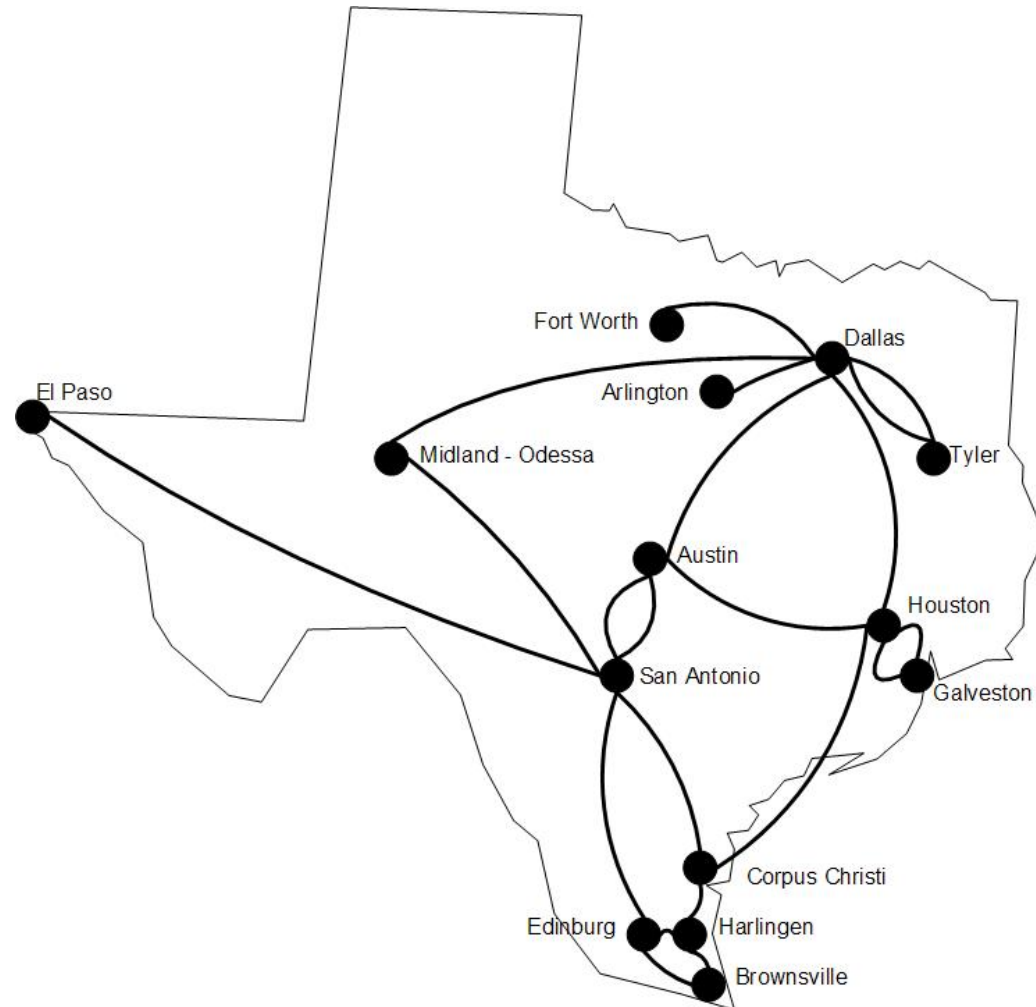




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# Shared Services: Definition

- **Wikipedia:**

*“...refers to the provision of a service by one part of an organization or group where that service had previously been found in more than one part of the organization or group.”*

- **UT System’s version:**

*An organizational model for improving internal service employed by large institutions.*

- *Use a proven organizational strategy for achieving:*
  - *Cost savings realized through economies of scale*
  - *Process improvements attained through standardization*
  - *The universal application of institutionally preferred practices and increased effectiveness*
- *Built around a distinct internal service organization, that*
- *Consolidates and delivers formerly redundant information technology (IT), business systems, and/or business process services to its existing disparate business units.*



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## Shared Services: Usual Drivers

- **Cost Savings**

- Reduced duplication of effort
- Efficient utilization of physical facilities
- Economies of scale – equipment and software licenses
- Reduced support costs

- **Regulatory and Political Environments**

- Demonstrate a plan for efficient resource utilization before one is imposed
- Disaster Recovery
- Reduced Power Consumption/Green IT?



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## Shared Services: Usual Drivers (cont.)

- **Improved Resource Utilization**
  - More efficient use of hardware
  - More efficient allocation of human resources
- **Improved Service**
  - Combination of resources allows for more scalable/reliable/available services
  - Improved manageability from sharing the base level needed to provide services



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## Shared Services: Levels of Integration

There are several levels of sharing or integration between components of a shared service.

In increasing order of integration complexity, the basic categories are:

- **Shared facilities**
- **Shared networking**
- **Shared hardware**
- **Shared software**
- **Shared management**
- **Shared data**





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## Shared Services: Organizational Dimensions

- **Infrastructure:** Are the right technical pieces in place (hardware, network, skills, etc)?
- **Political:** Is executive-level management involved?
- **Financial:** Are there funds available to invest in the development of shared services?
- **Cultural:** Is it the “right” thing to do and **are customers willing to use a shared service?**
- **Privacy:** Is the proper policy and legal framework in place to **manage the risk** of sharing needed data?



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## Shared Services: Organizational Implications

- How does Shared Services impact IT resource demand assessment?
- How are project prioritization, approval, and funding affected?
- What are the effects on staff hiring and retention?
- How are Facilities for data centers selected?  
How is redundant footprint redeployed?



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# UT Shared Services Initiative: Vision and Drivers

## Vision:

*Use a proven organizational strategy for achieving:*

- o *Cost savings realized through economies of scale*
- o *Process improvements attained through standardization*
- o *The universal application of institutionally preferred practices and increased effectiveness*

*Built around a distinct internal service organization, that consolidates and delivers formerly redundant information technology (IT), business systems, and/or business process services to its existing disparate business units.*

## Drivers:

- Lots of duplication of services
- Regulatory pressures to consolidate
- Develop common solutions to shared problems



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## UT Shared Services Initiative: Stakeholders

- **UT System**
  - Chief Information Officer
  - Strategic Leadership Council
    - Institutional Chief Information Officers
  - Executive Vice Chancellor, Business Affairs
  - Office of General Counsel
- **UT Institutions:**
  - Business Officers
  - Institutional System and Process Owners



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## UT Shared Services Initiative: Governance

- **Shared Services Executive Committee**  
(standing sub-committee of the SLC)
  - Oversight and Strategic Planning
- **UT System Administration**
  - Initiative project management
  - Coordination of centrally-provided services
  - **Establish the legal framework for data ownership/custody**
  - Administration and billing
  - Software licensing
  - Systemwide contracts
  - Identity management



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## UT Shared Services Initiative: Governance (cont.)

- **Office of Telecommunications Services**  
(UT System Administration / UT at Austin)
  - Operation and maintenance of the network infrastructure
- **Shared Services Hosts**
  - Day-to-day operations
  - Information security
  - Maintenance and troubleshooting



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## UT Shared Services Initiative: Technologies Used

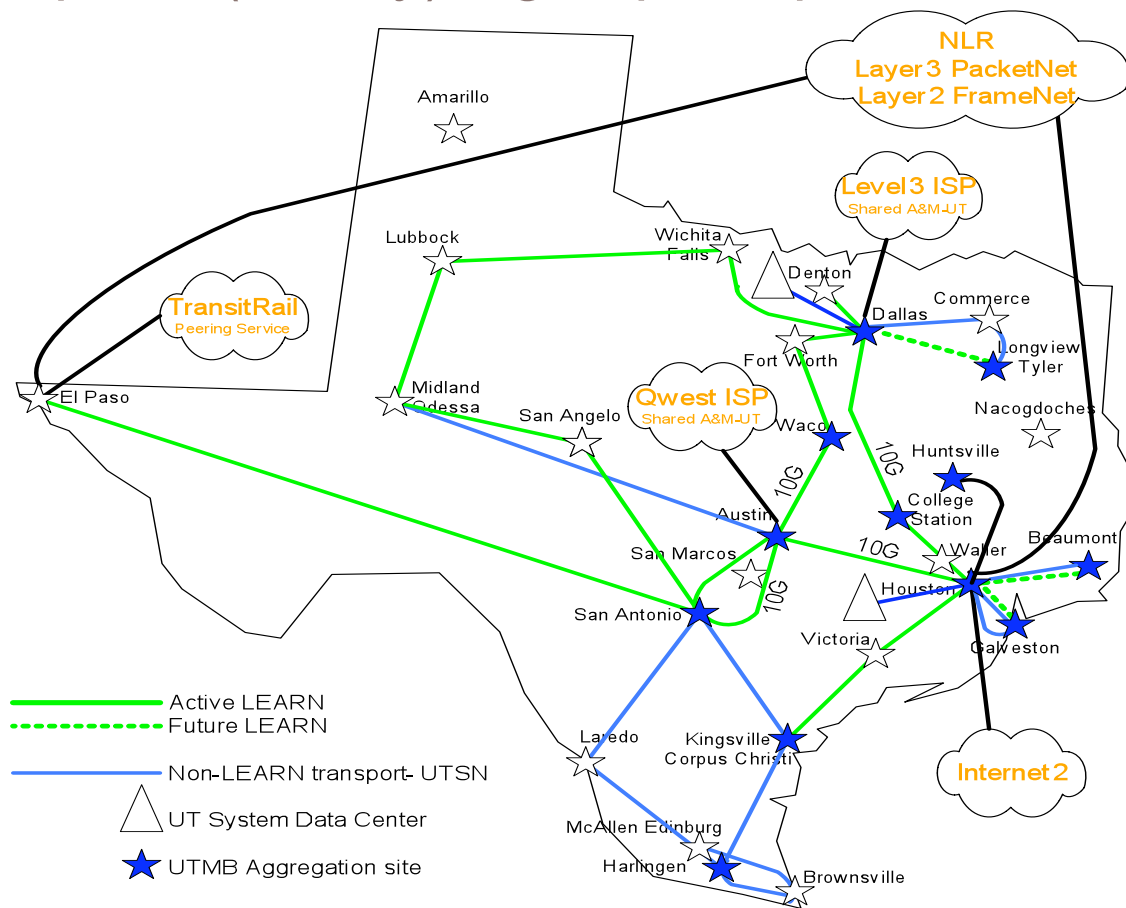
- UT System Board of Regents approved three shared data centers located around the state. Two are operational.
- Shared hardware (i.e., servers, generators, backup equipment, etc)
- Standards-based middleware (SAML)
- Shared software (ECRT)
- Shared monitoring systems (Big Brother)



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# UT Shared Services Initiative: Technologies Used (cont.)

- Shared optical (mostly) high-speed private network







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## UT Shared Services Initiative: Applications

- **External Services:**
  - Cayuse
  - Dreamspark
  - Avatar (for internal training)
- **COTS**
  - Configuration Management (Configuresoft)
  - SharePoint
  - Peoplesoft (TexSIS)
- **High-Performance Computing**



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## UT Shared Services Initiative: Applications (cont.)

- **Effort Certification System (ECRT)**
- **Disaster Recovery;**
  - Persistent Web presence
  - Dual paths for network to institutions
  - Off-site backups (e.g., UTMB backups at UT Arlington's data center)



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## UT Shared Services Initiative: Applications (cont.)

- **Custom-Developed Services:**
  - Blackboard CMS
  - Security Scanning (SelfScan)
  - Risk Assessment (ISAAC-UT)
  - 40+ internal applications



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## UT Shared Services Initiative: Benefits

- Reduced acquisition/operations costs (TexSIS, ECRT)
- Increased speed of IT Services delivery in response to business needs (ECRT)
- Leveraged / built on institutions' implementation experiences (TexSIS)
- Enhanced functionality (Selfscan)



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## UT Shared Services Initiative: Benefits (cont.)

- Eased integration of external services (DreamSpark, Cayuse, Avatar, MobileCampus)
- More efficient allocation of human resources (TexSIS)



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## UT Shared Services Initiatives: What's on the Horizon

- **Technology Upgrades/Enhancements**
  - Network, capacity, flexibility
  - Increasing use of federated identity management
- **Additional Data Center**
  - Set up third approved data center
  - Central Texas RDC?
- **New Applications**
  - Peoplesoft HR/Finance
  - CMS?
- **Cloud (or cloud-like) Computing?**



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## *A Practical Roadmap for Implementation: Lessons Learned*

- Consistent standards and practices are important
- Develop a review process for reviewing proposed solutions/architecture early on in the development process
- Carefully plan the financial model – make sure all costs are covered so that there are no surprises later
- Create **compelling** incentives for institutional use of the shared services infrastructure



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## *A Practical Roadmap for Implementation: “If I Were Just Starting...”*

### **1. Identify “Shareable” Services**

- What are you willing to share?
  - Lightly used services?
  - Services that are expensive to operate or that require specialized skills
- What shared services would your business, academic, research, and/or clinical units be willing to use?

### **3. Identify Partners Willing to Share**

- State-based collaborations (LEARN, MCNC, etc)
- Regional collaborations (GPN, etc)
- One way to start is with simple reciprocal agreements





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## *A Practical Roadmap for Implementation: “If I Were Just Starting...”*

### **3. Consider Your Environment and Assess Your Potential Challenges**

- Legal / Regulatory / **Culture**
- Physical facilities? Networking? Middleware? Skills?

### **5. Carefully Evaluate Governance Models**

- Permanent or revolving executive or steering committee?
- Sub-committees needed?
- What policies and procedures would be needed?
- What is the role of audit and who conducts them?



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## *A Practical Roadmap for Implementation: “If I Were Just Starting...”*

### **5. Carefully Evaluate Potential Financial Models**

- One time opt-in charge
- App-as-a-service (pay as you go)
- Individual pieces funded separately (network, facilities, development, operations, etc)
- How are the initial capital expenses funded?

### **7. Explore Potential Sources of Funding**

- Federal grants
- State development funds



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## *A Practical Roadmap for Implementation: “If I Were Just Starting...”*

### **7. Discuss Service Level Agreements**

- Service targets,
- Service level measurement and reporting
- Remediation

### **9. Plan for Disaster Recovery**

- What services receive priority?
- Responsible parties?
- How would disaster recovery efforts be funded?



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## Shared Services: The Future

- **Is It Just a Fad?**
  - Does it make good business sense?
  - Is it attainable?
- **Is It Feasible?**
  - For whom?
  - Under what circumstances?
- **Could shared services be a stepping stone to Private Cloud Computing?**



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## Shared Services to Private Cloud: *A Natural Transition?*

### Question

**“Can an institution leverage existing Shared Services infrastructure – achieve a significant improvement with little additional investment - to setup a low cost Private Cloud environment?”**



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## Shared Services to Private Cloud: A *Natural* Transition?

### Cloud Computing:

“A style of computing where **scalable** and **elastic** IT-enabled capabilities are delivered as **a service** to external customers using Internet technologies.”

Gartner



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# Cloud Computing Attributes

- **Service-Based:**
  - **completely automated** and designed to serve the specific needs of a set of consumers
  - what the service needs to do is more important than how the technologies are used to implement the solution.
- **Scalable and Elastic:**
  - **can scale capacity up or down as the consumer demands**
- **Shared:**
  - services share a pool of resources to build economies of scale.
- **Metered by Use:**
  - **“Pay-by-the-drink”**
- **Uses Internet Technologies:**
  - The service is delivered using Web-oriented architecture.



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## Private Cloud Computing

“A style of computing where scalable and elastic IT-enabled capabilities are delivered as a service to **internal** customers using Internet technologies.”

**Limited Membership**

***Spectrum of Ownership and Control***

Gartner





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## How *Private* is Private?

- How limited is the Membership?
  - University System? State? Consortium?
- Is Private Cloud maintained by Third Party?
- Constraints on data handling and storage?
- Data and/or assets ownership issues?



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# What Kind of Services?

- **Infrastructure**
  - Hardware
  - Middleware } **Storage**
- **Development Environment**
  - Infrastructure +
  - Software
  - Database
  - Web interface
- **Applications**
  - Development Environment +
  - Application Code



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## Implications to Institutions?

### Characteristics

- Ample resources – on demand
- Automated (to the extent possible)
- Pay only for what is used
- No commitment to a traditional Contract / Agreement
- Separation between those provisioning IT resources and those consuming them
- Capital investment as part of an institution-wide strategic plan not tied to discreet institutional apps/projects



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## Implications to Institutions?

### Core Capabilities:

- Leverage Virtualization
- Automate manual Resource Provisioning and System Administration processes
- Meter and Determine Pay only for what is used
- Capacity Planning
- Security
- Identity and Role Management
- Translate Policy into actionable Rules



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## A Case **For** Private Cloud: Rationale

- Potential to leverage existing shared services/data center infrastructure
- You (and your IT) know your business best
- Legal and Regulatory constraints on data handling and storage?
- There is no “profit margin”



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## A Case **For** Private Cloud: Rationale (cont.)

- Self-paced change. No need to go from holding everything in-house to the Amazon way of doing business.

Offers intermediary step that can help an Institution adjust.



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## A Case **For** Private Cloud: Incremental Benefits

- Scaling and Agility.
  - Shared services usually are application-centric. Resources are deployed to meet peak estimated demand and remain dedicated to the application and idle when demand is not met.
- Lower Security and Privacy Risks
- More efficient use of resources?



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## A Case **Against** Private Cloud:

- Cloud-enabling existing data centers may prove to be a daunting, costly, and disrupting task.
- Technology and Setup
  - Additional equipment?
  - Software to automate and manage network and storage provisioning
  - Professional services to set it up (probably?)





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## A Case **Against** Private Cloud: (cont)

- Establishing the governance structure necessary to enable automated requesting, approval, and provisioning of IT resources.
- Requires change in the operations culture of IT



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## Shared Services to Private Cloud: A *Natural* Transition?

### Conclusions?

Leveraging existing Shared Services infrastructure – achieve a significant improvement with little additional investment - to setup a low cost Private Cloud environment may be unfeasible.

**Create a segmented section of the Shared Services Data Center dedicated to Cloud (or Cloud-like) computing.**

# Thank You!

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