Cloud vs. conventional datacenters

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BENEFITS OF THE CLOUD FOR GOVERNMENT LEADERS

Cloud enables government leaders to better deliver on their **key priorities**:

- **Fiscal responsibility**
  - In times of tight budgets, cloud can help governments achieve necessary spending cuts without cutting into essential services
- **Better serve citizens**
  - Cloud can help make governments more responsive to the needs of its citizens and increase collaboration and coordination between departments
- **Lower emissions**
  - New cloud facilities are less power-hungry than existing IT infrastructure and require fewer servers to generate the same output by running them more efficiently

- Cloud provides much better answers than “conventional datacenters”

CLOUD - 3 SOURCES OF ECONOMIES OF SCALE

- **1. Supply side**
  - Consolidation of overhead costs, purchasing power, and power efficiency makes large DCs up to **50%** more cost effective than smaller DCs
- **2. Demand side**
  - Pooling computing improves the utilization of IT resources and reduces costs by another **50%**
- **3. Multi-tenancy**
  - Multiple customers sharing the same application, allowing to divide the costs of operating the application and reducing costs by an additional **20%**

- Combined impact of these economies of scale can result in long-term savings of up to **80%** when comparing large and small DCs

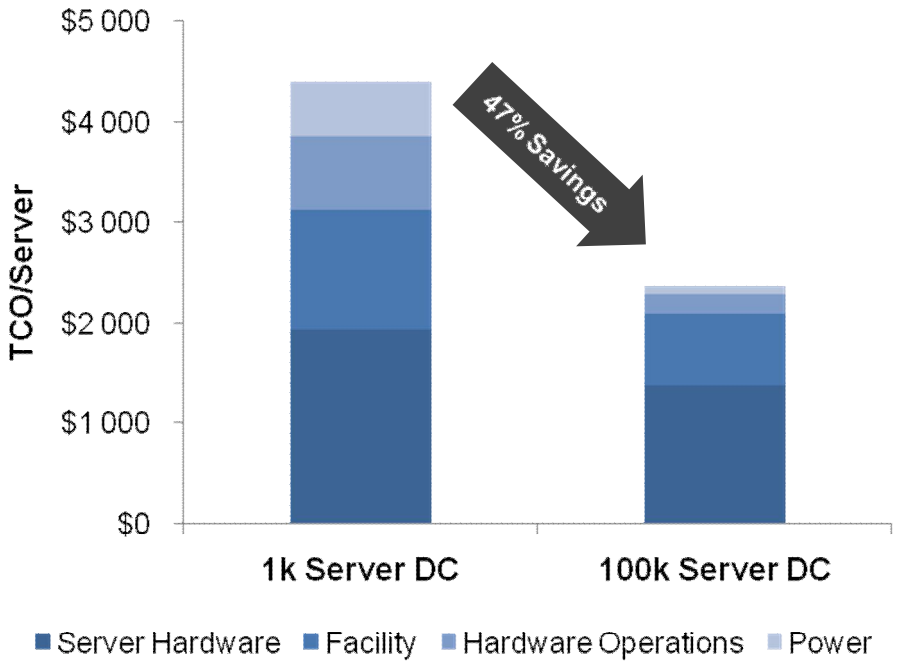
1. SUPPLY-SIDE ECONOMIES OF SCALE

Larger datacenters have almost 50% lower TCO per server

MAIN DATA CENTER COST BUCKETS

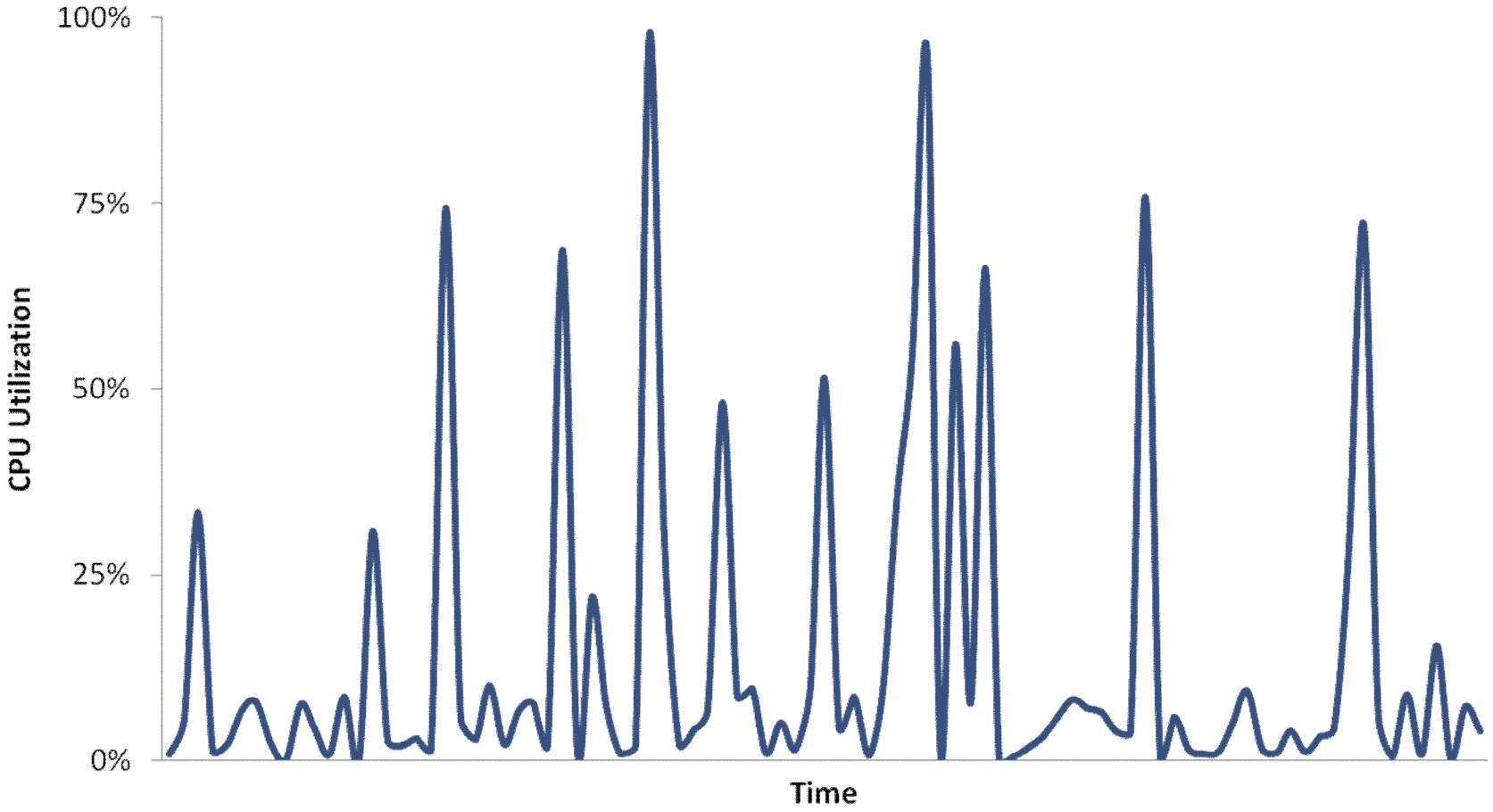
- **Server hardware costs** (~45%)
- **Facility & operations** (~25%)
- **Hardware labor costs** (~15%)
- **Power costs** (~15%)

ANNUAL TCO/SERVER DECLINES W/SCALE

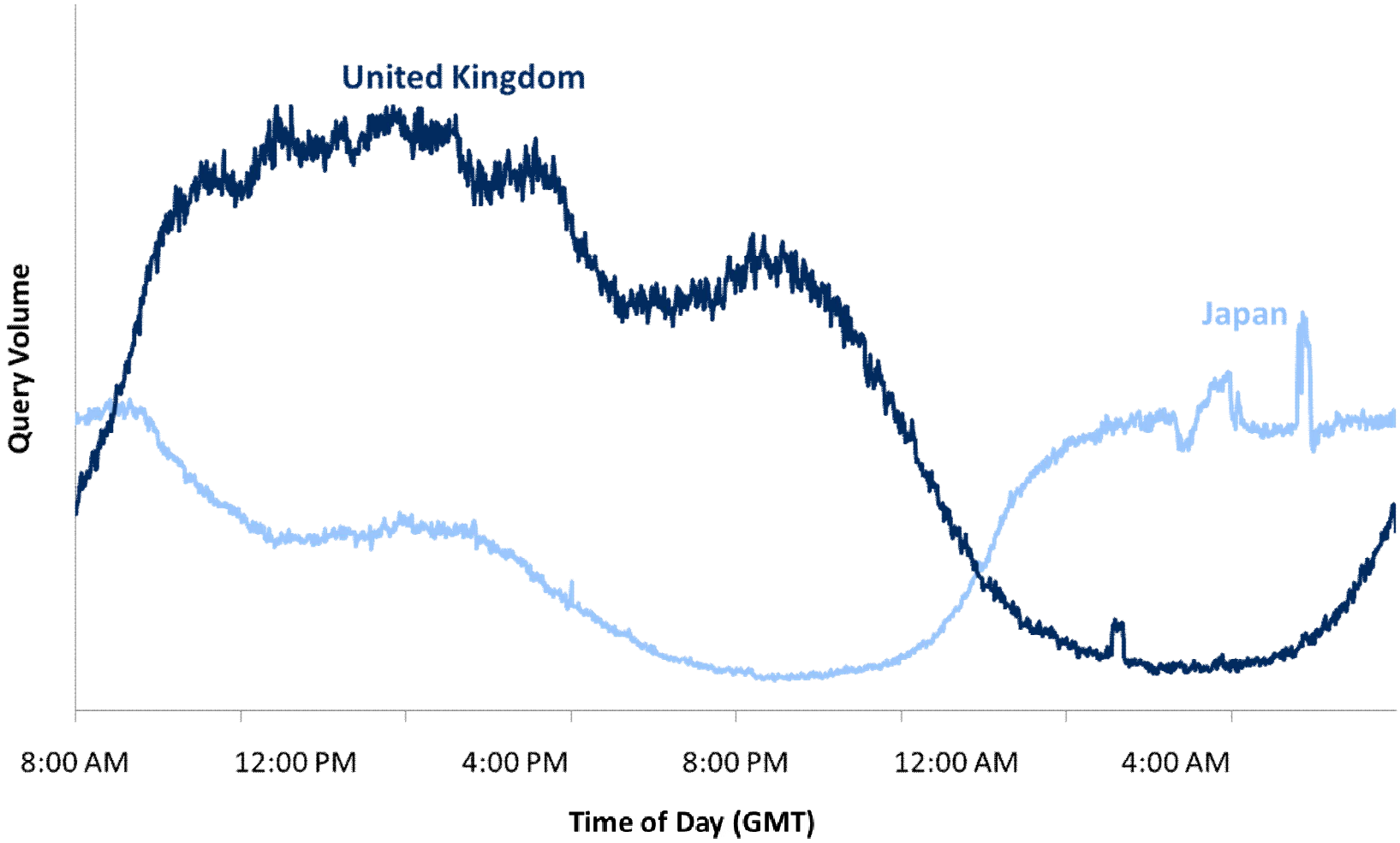


2. DEMAND SIDE ECONOMIES OF SCALE

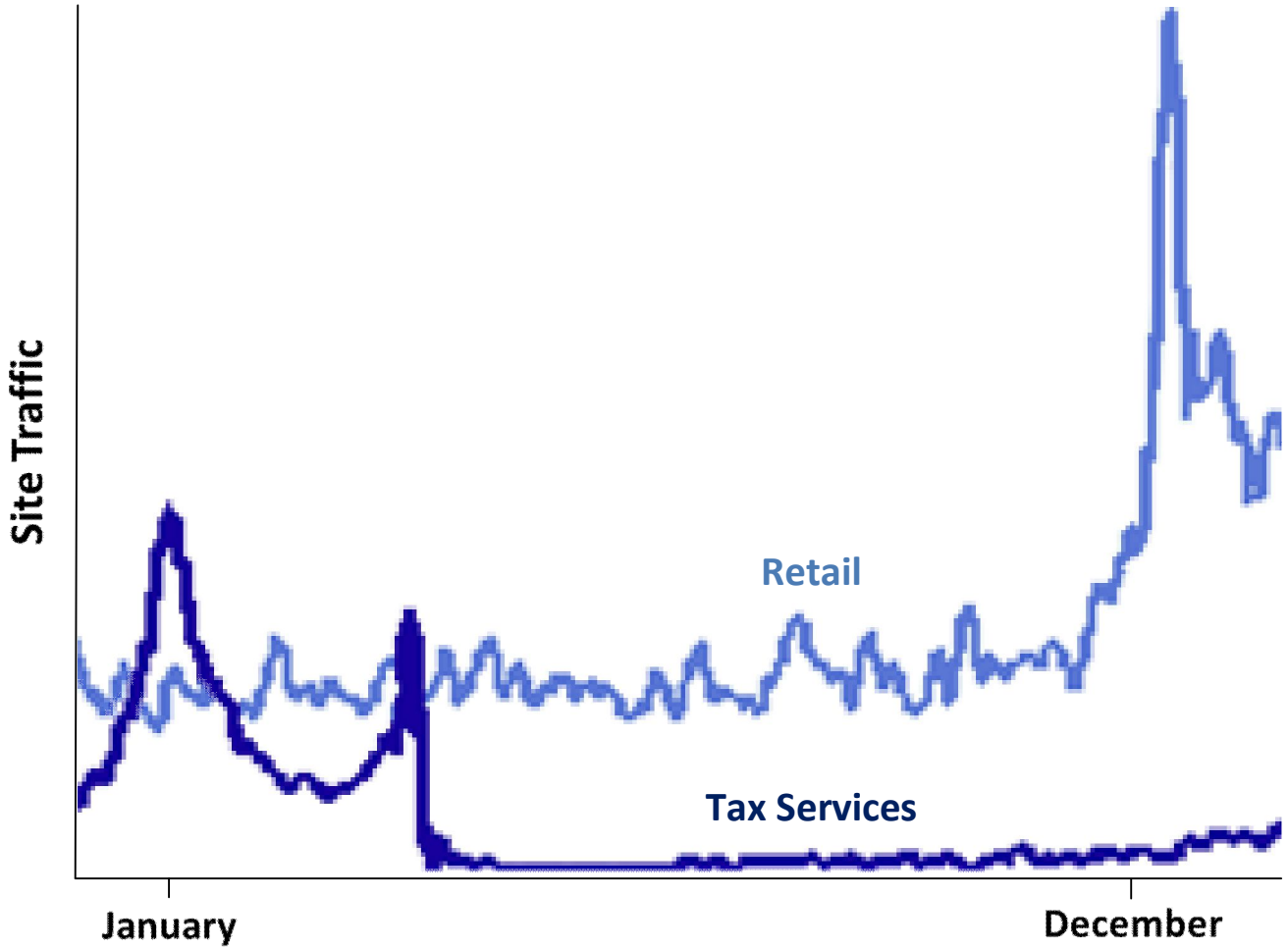
Average server utilization rates are 5-10%



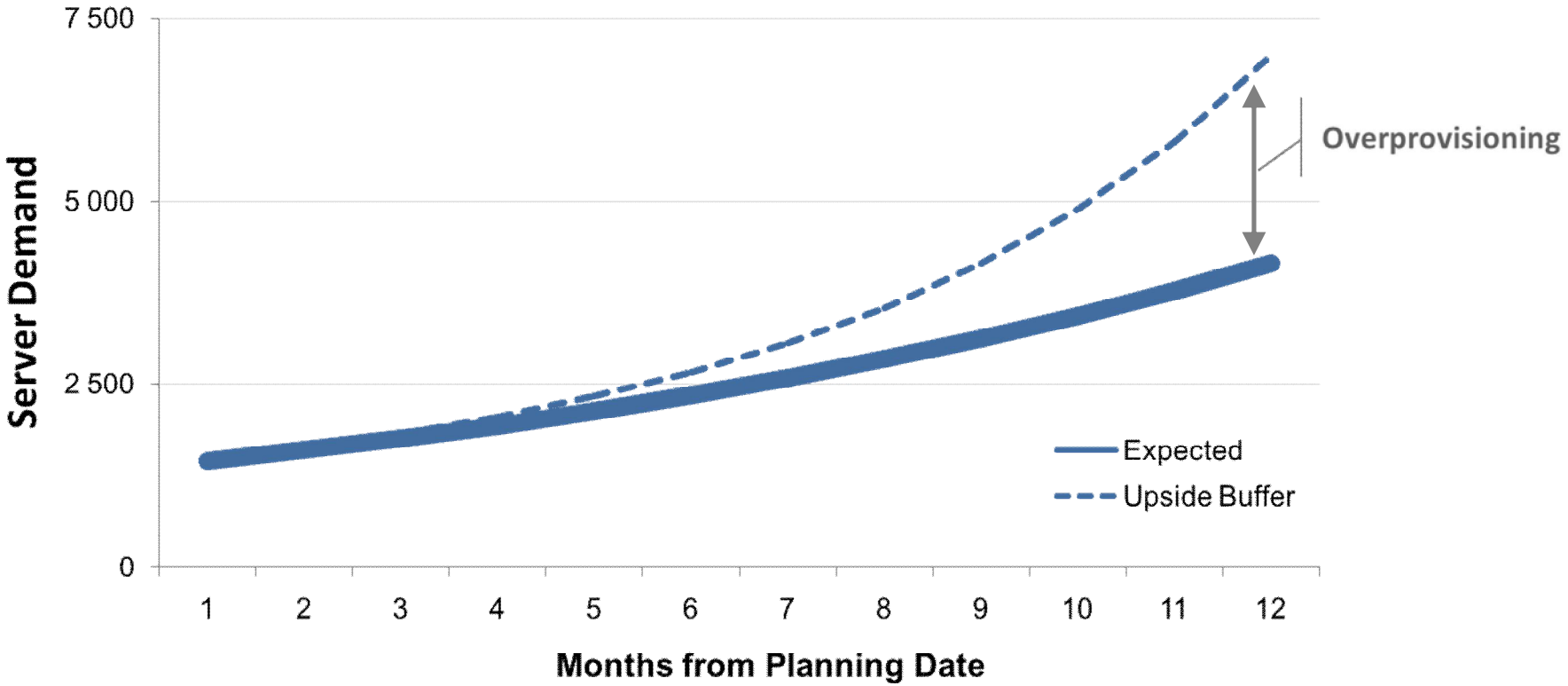
TIME OF DAY VARIABILITY



INDUSTRY VARIABILITY

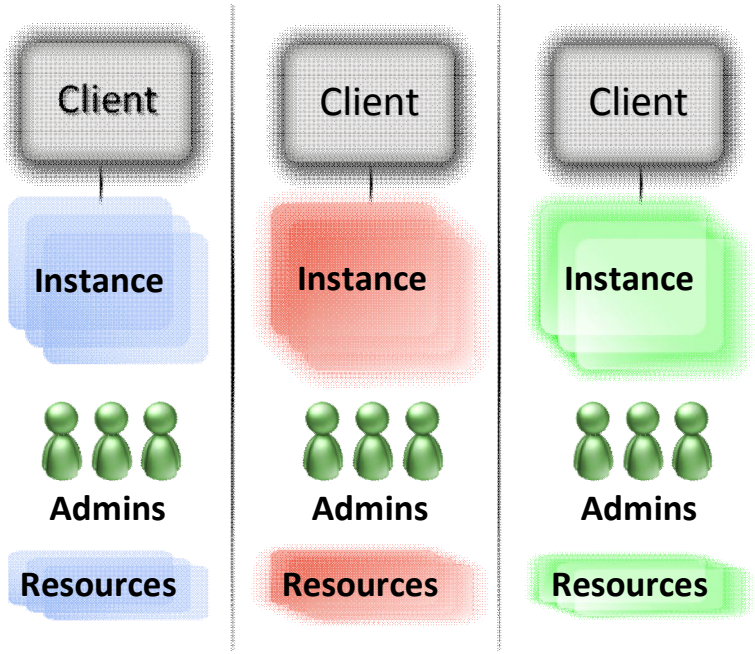


UNCERTAIN GROWTH



3. BENEFITS OF MULTI-TENANCY

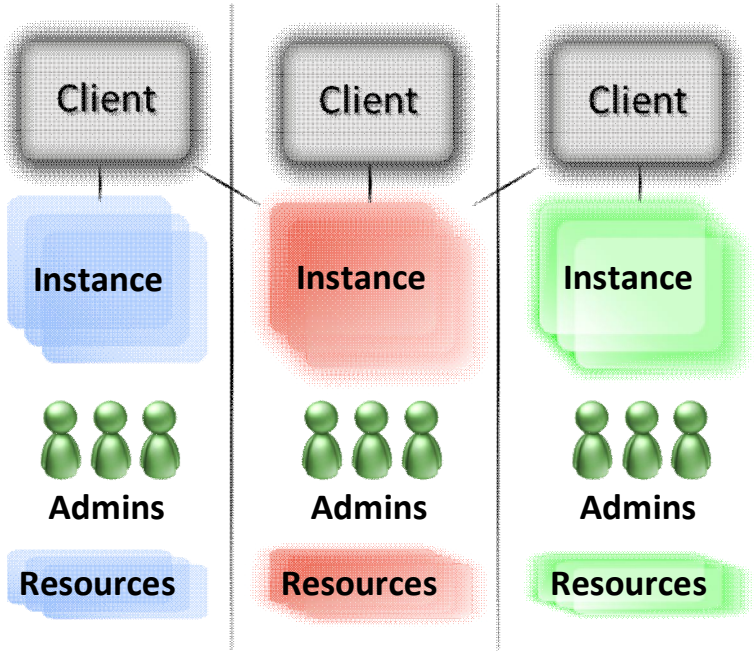
SINGLE-TENANT APPLICATION



- Each client has a dedicated instance
- Instances separately administrated
- Dedicated resources
- Costs grow with scale

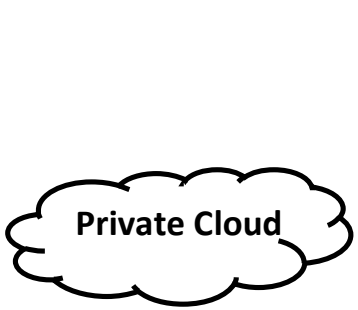
3. BENEFITS OF MULTI-TENANCY

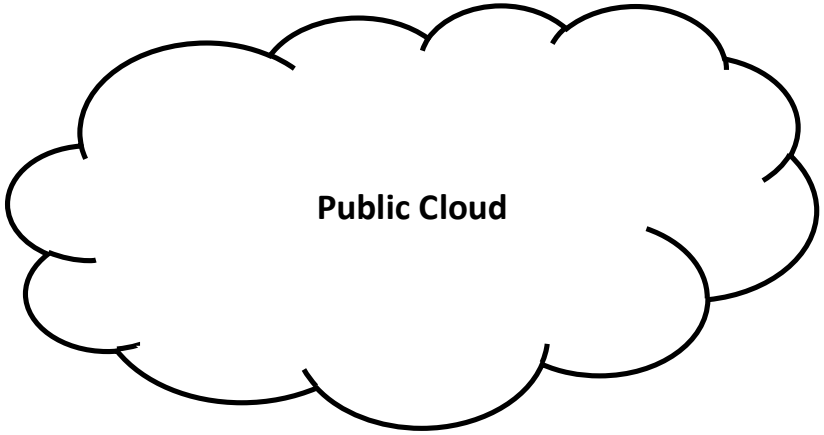
MULTI-TENANT APPLICATION



- One instance for all clients
- One group of administrators
- Fixed resources are shared
- Costs go towards zero with scale

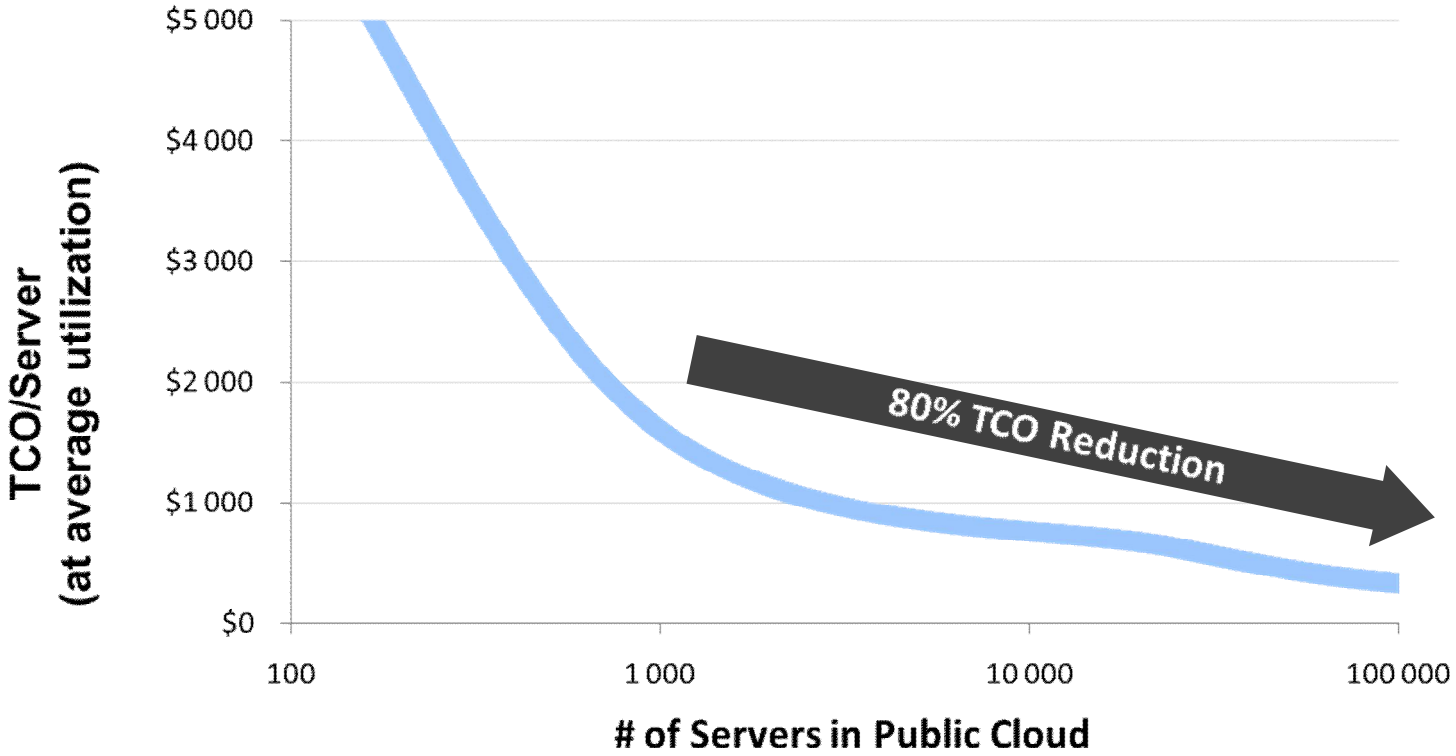
PUBLIC vs. PRIVATE CLOUDS



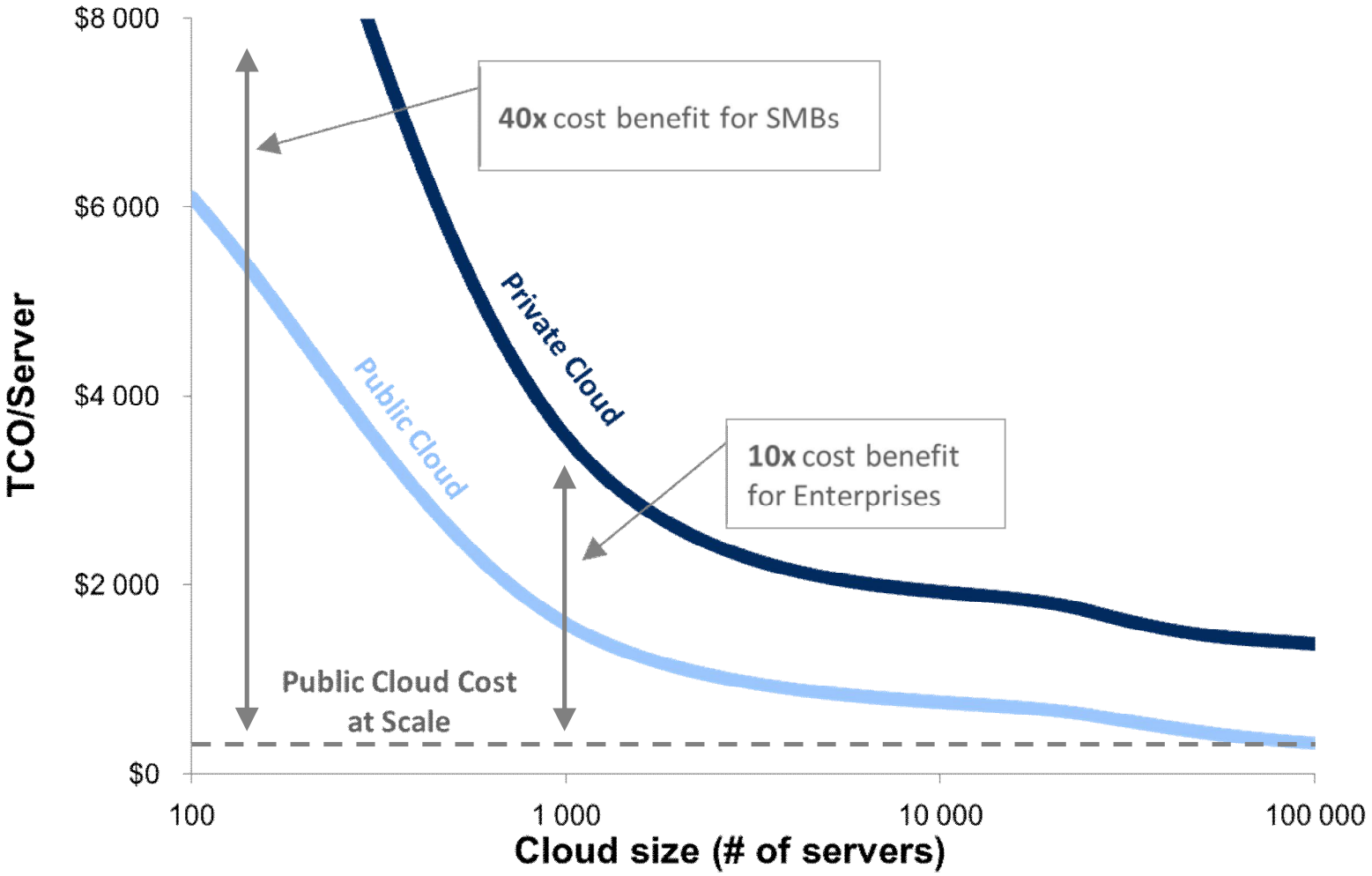


1) Supply-side	✗	✓
2) Demand-side	✓	✓
3) Multi-tenancy	✗	✓

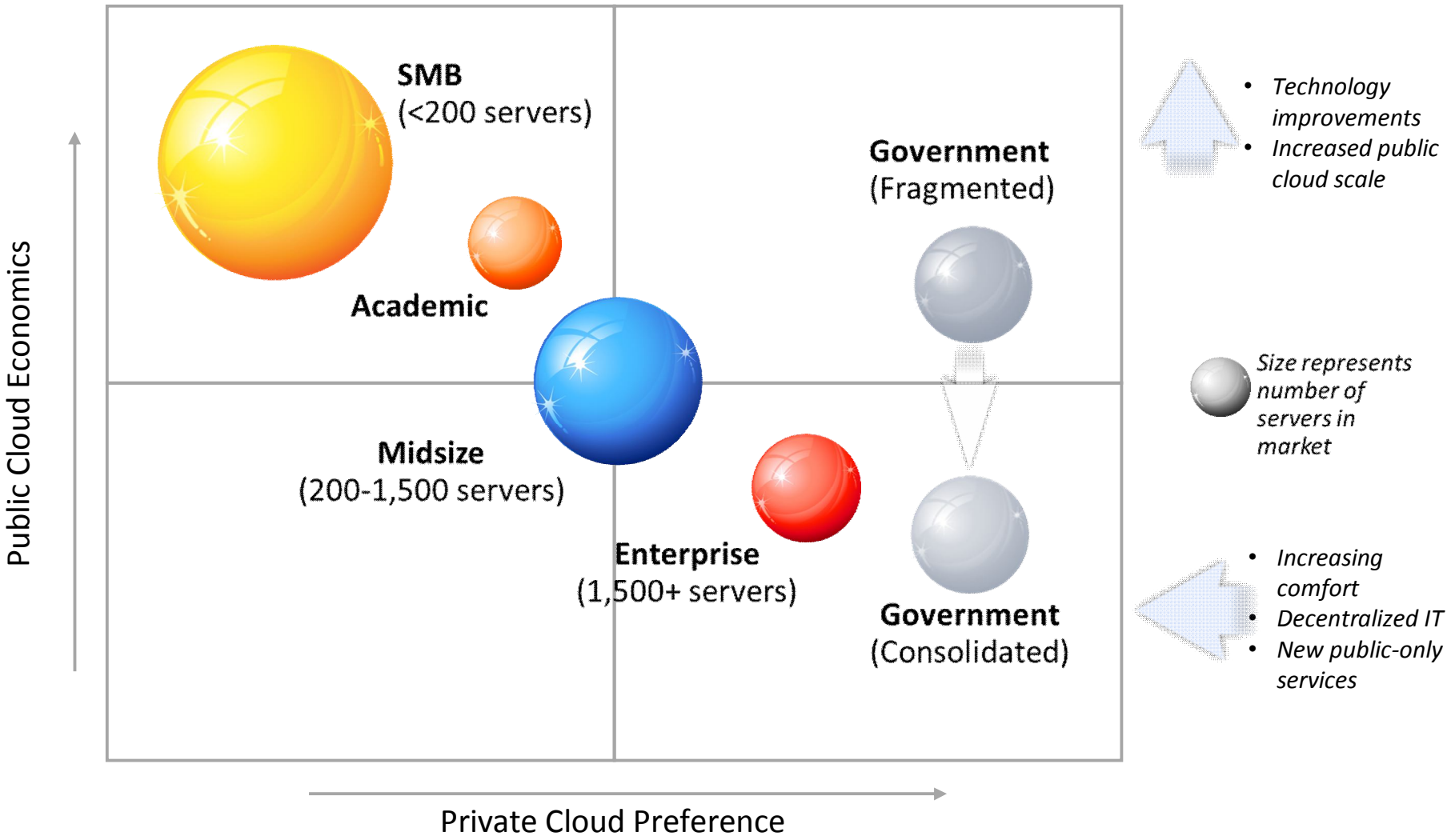
PUBLIC CLOUD ECONOMIES OF SCALE



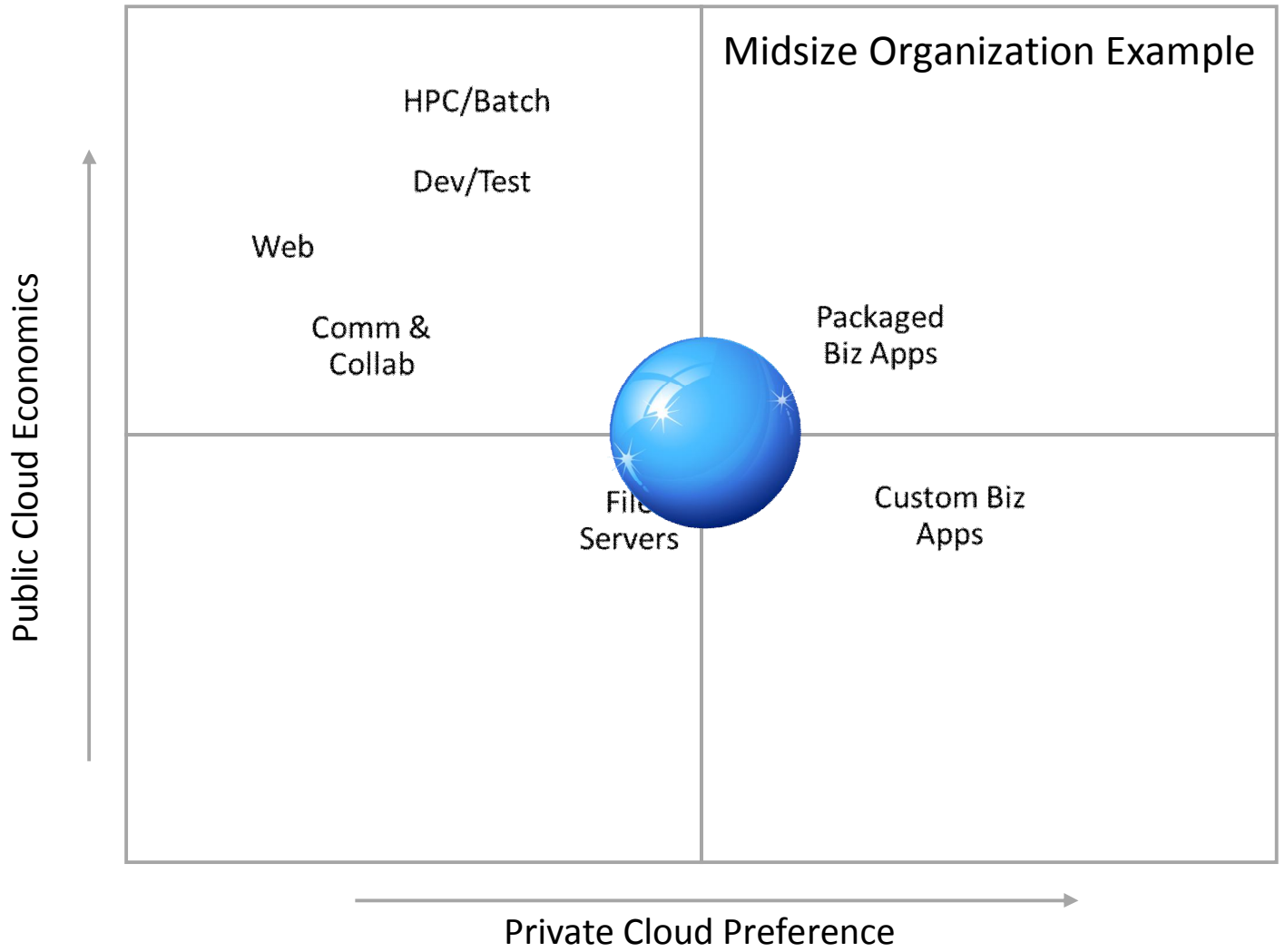
PUBLIC vs. PRIVATE CLOUDS



PUBLIC vs. PRIVATE BY SEGMENT



PUBLIC vs. PRIVATE – PORTFOLIO APPROACH



MICROSOFT CLOUD OFFERINGS

Microsoft Office 365	**MICROSOFT OFFICE 365®** http://www.office365.com
Microsoft Dynamics CRM 2011	**MICROSOFT DYNAMICS® CRM ONLINE** http://crm.dynamics.com
Windows Intune	**WINDOWS INTUNE®** http://www.microsoft.com/windows/windowsintune
Windows Azure	**WINDOWS AZURE** http://www.windowsazure.com
Microsoft SQL Azure	**SQL AZURE** http://www.sqlazure.com
Windows Server Hyper-V	**WINDOWS SERVER HYPER-V** http://www.microsoft.com/hyperv
Microsoft System Center	**SYSTEM CENTER** http://www.microsoft.com/systemcenter

SUMMARY

- Cloud represents both technology and economic shift
  - Provides strong economies of scale
  - Much more efficient compared to conventional DCs
- Long term shift towards shared public clouds
- Balanced transition to cloud is necessary
  - quickly (risking operational continuity, security, and compliance)
  - slowly (risking budgetary deficits, being inefficient and ineffective)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