ASQ NORTHERN VIRGINIA SECTION 0511

IT Service Quality amidst a World Gone Cloud

June 2012
V: 2.0

Agenda

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- **A World Gone Cloud *(federal perspective)***
- **Impacts to IT Infrastructures**
- **Impacts to ITIL-based Service/Quality**
- **Retooling ITIL Quality Programs**

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For Today……

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- *Discussion over Presentation*
- *Slides are a Framework for Discussion*
- *Ask Questions at any time (hecklers shot on sight)*
- *Will defer longer answer to end*
- *Material (like Cloud)… a work in progress*
- *So….Enjoy, learn, and share!!*

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A World Gone to Cloud

Embracing Cloud – Why now?

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- Current Economic Situation
  - Shrinking Budgets
  - Evolving Mission scope
  - Increased Expectation
  - Technology Drivers (mobile, wireless)
- Service Delivery must Adopt, expectation is now

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Government Adopting of Cloud Widespread

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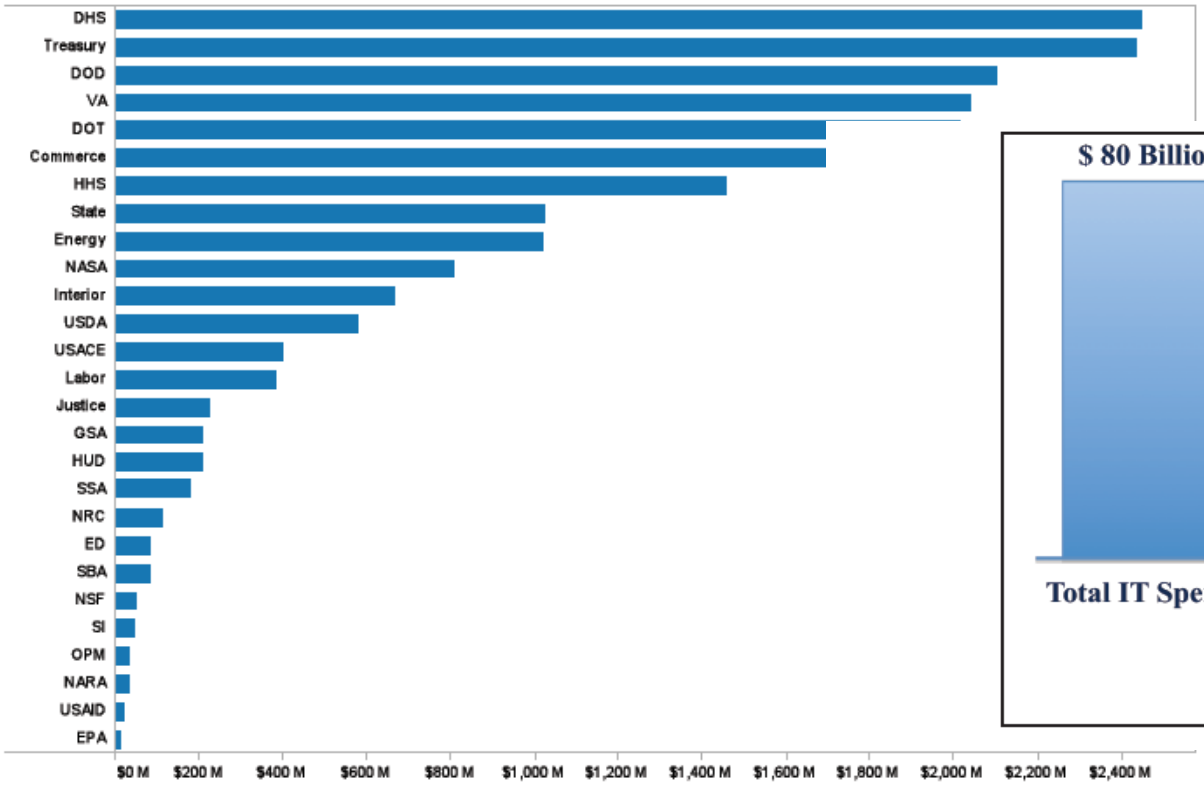
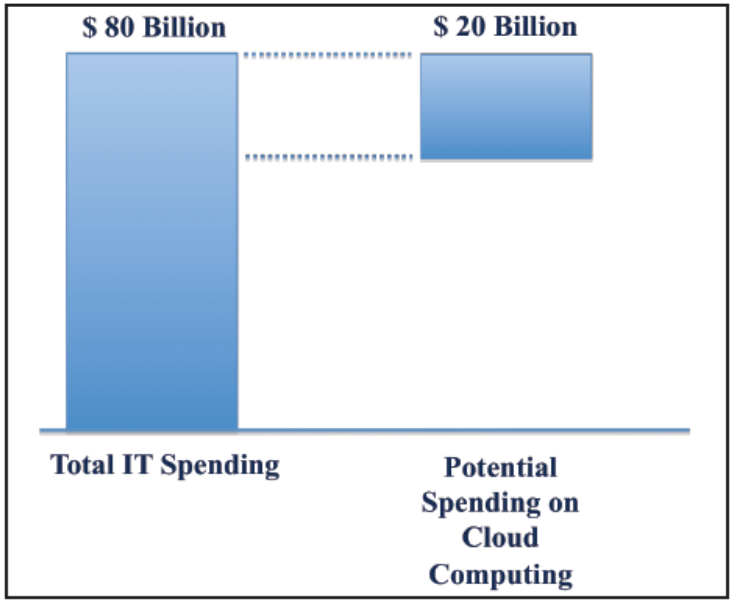
- Budget & Mission Drivers
- Use in Federal Government becoming wide-spread
- Accelerated Adoption – no time to wait!!





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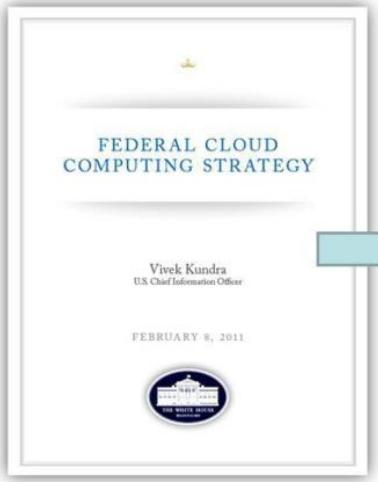
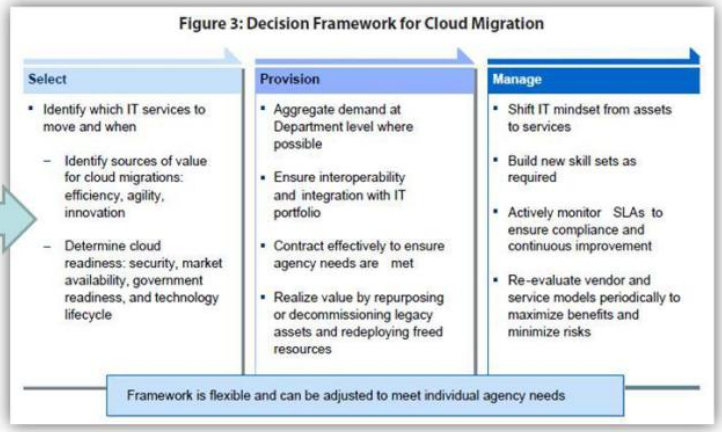
Federal CIO efforts to Accelerate Federal Adoption

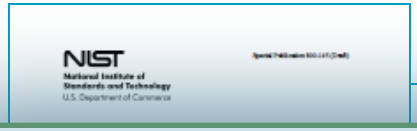
- Cloud remains Priority of 2nd Federal CIO
- Integral part of Federal IT reform 25-pt Plan
- Bold Adoption Initiatives - Cloud First, Shared First, Future First
  - *"Shared First" initiative – shift to commodity IT*
  - "Future First" jump-start adoption of new technologies and approaches
- FedRAMP – Streamlining Security





- **Decisions in Moving to the cloud**
- **Decisions in Provisioning cloud services effectively**
- **Decisions in Managing services rather than assets**

NIST – Standards to Align Industry Direction



- ***A simpler Definition***……

Use of Shared IT Resources

that are….

Cloud Services

- available when you need them ……..***On-Demand***
- set-up by you……..……...***Self-Service***
- widely available via the network…….***Broad Network Access***
- serving multiple users……..***Resource-Pooling***
- quickly scalable, based on need……***Rapid-Elasticity***
- metered to easily monitor usage……...***Measured-Service***

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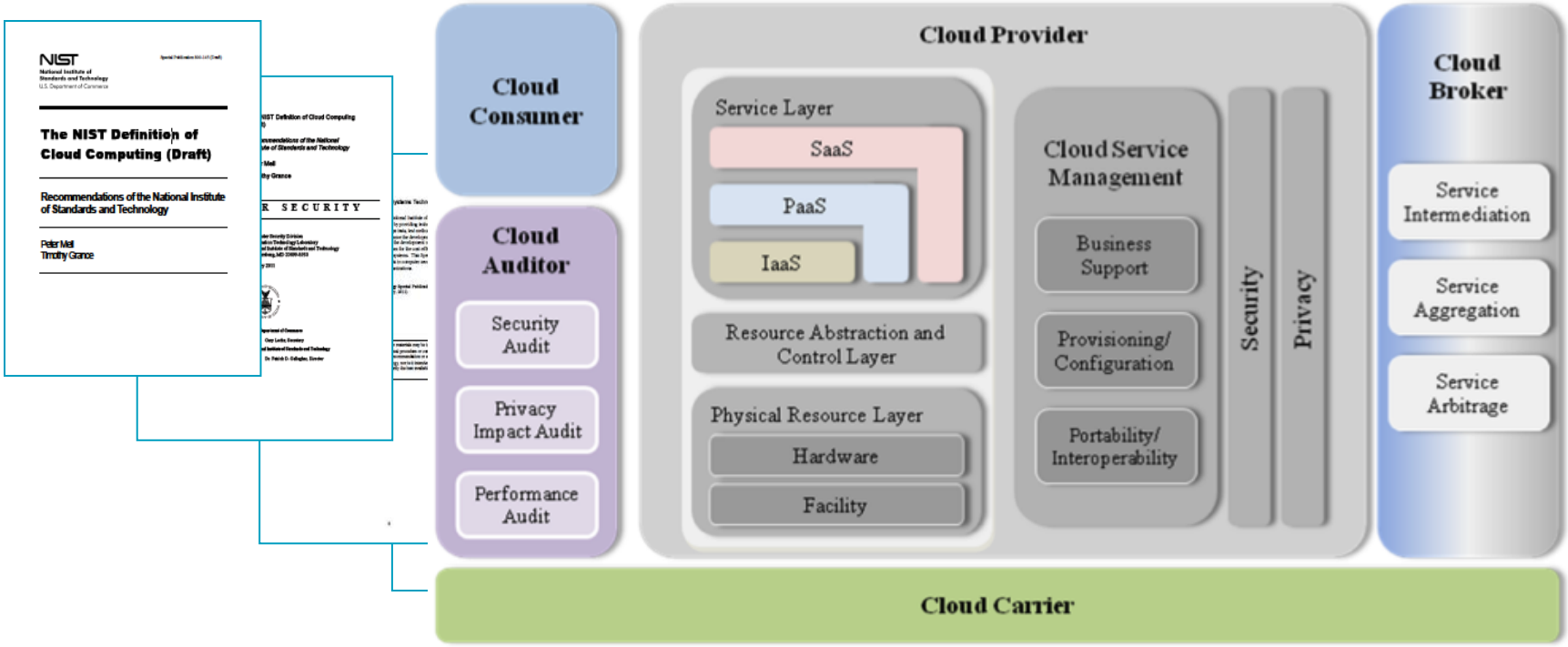
NIST – Standards For Implementation

- Standards for Service, Security, Use, Interoperability, etc
- Accelerated Standards Process
- Agency Adoption Guidelines



What makes up a Cloud

End User

Cloud Mgmt Services

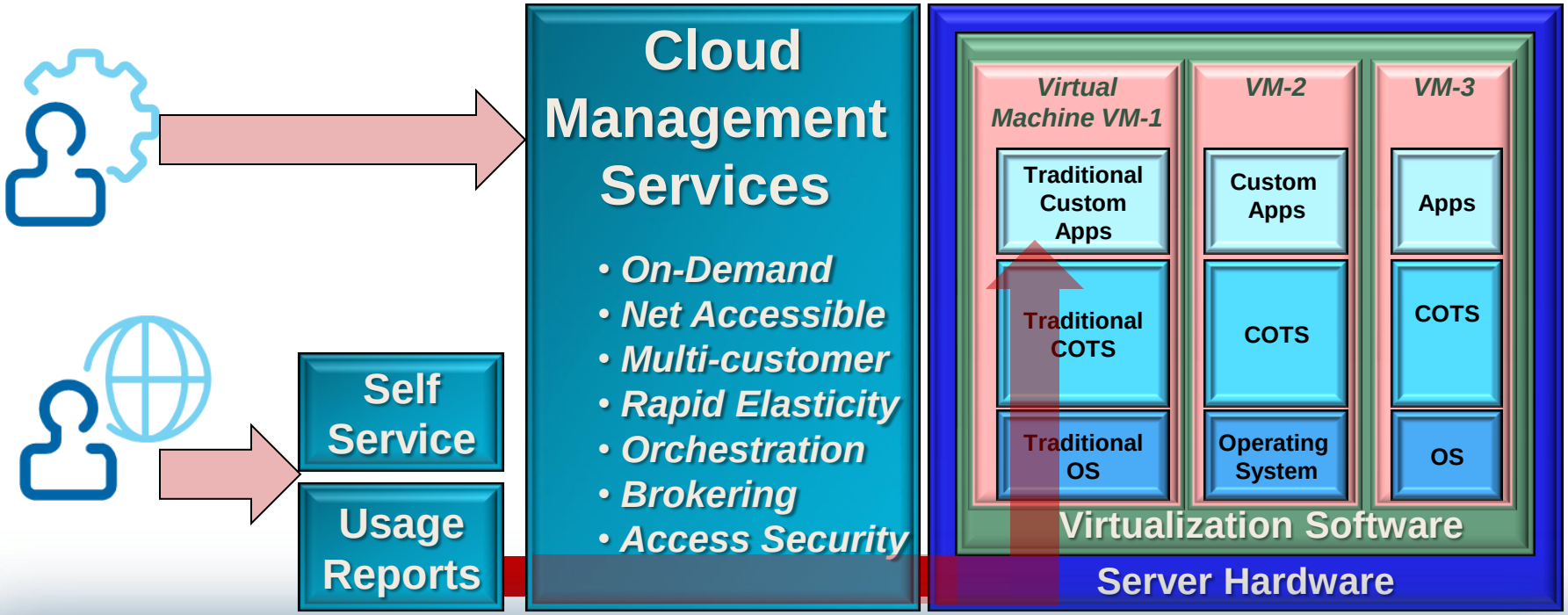
Virtualization

Server Hardware

Virtualization alone is not Cloud Computing

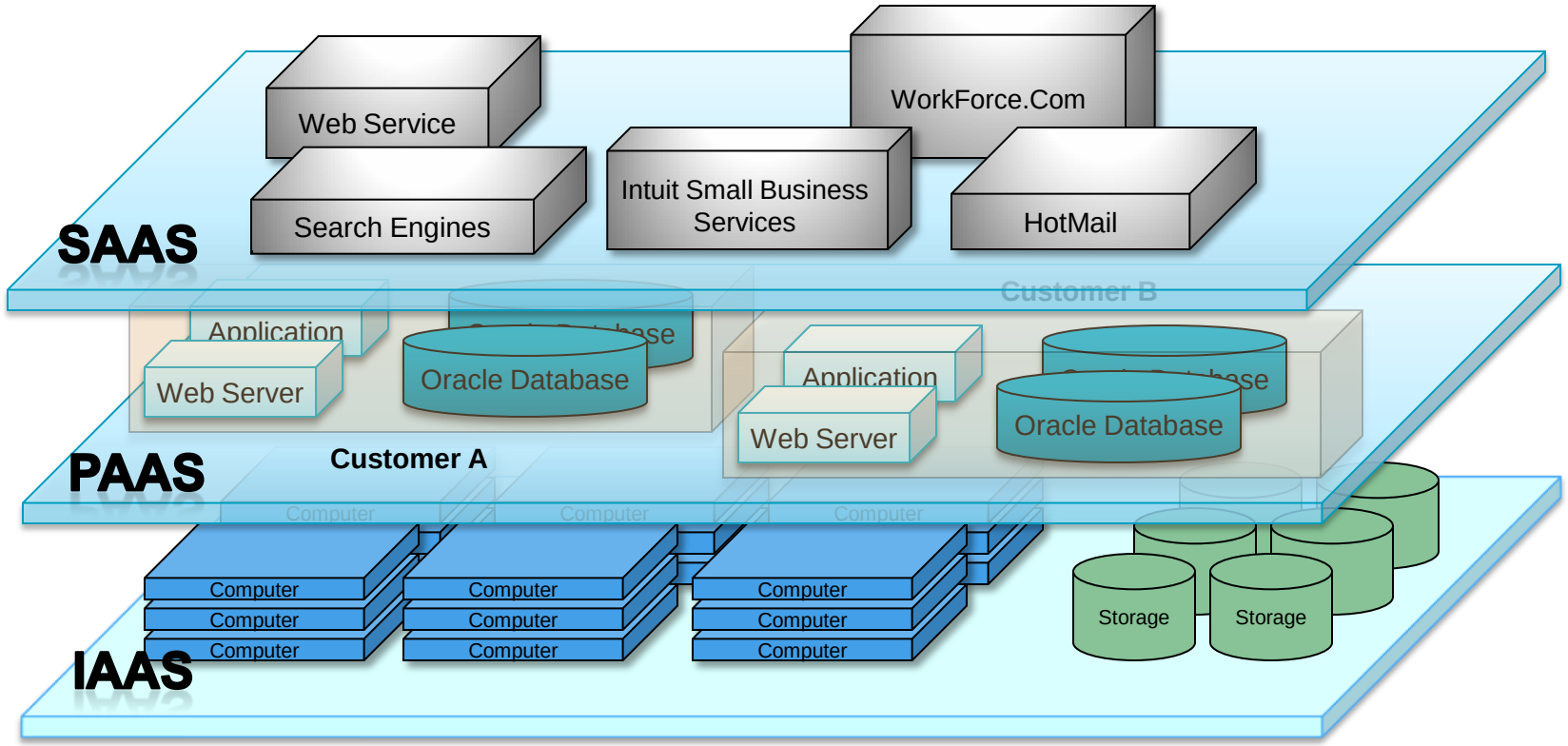
What Makes up a Cloud

- Cloud example – User Managed Virtualization

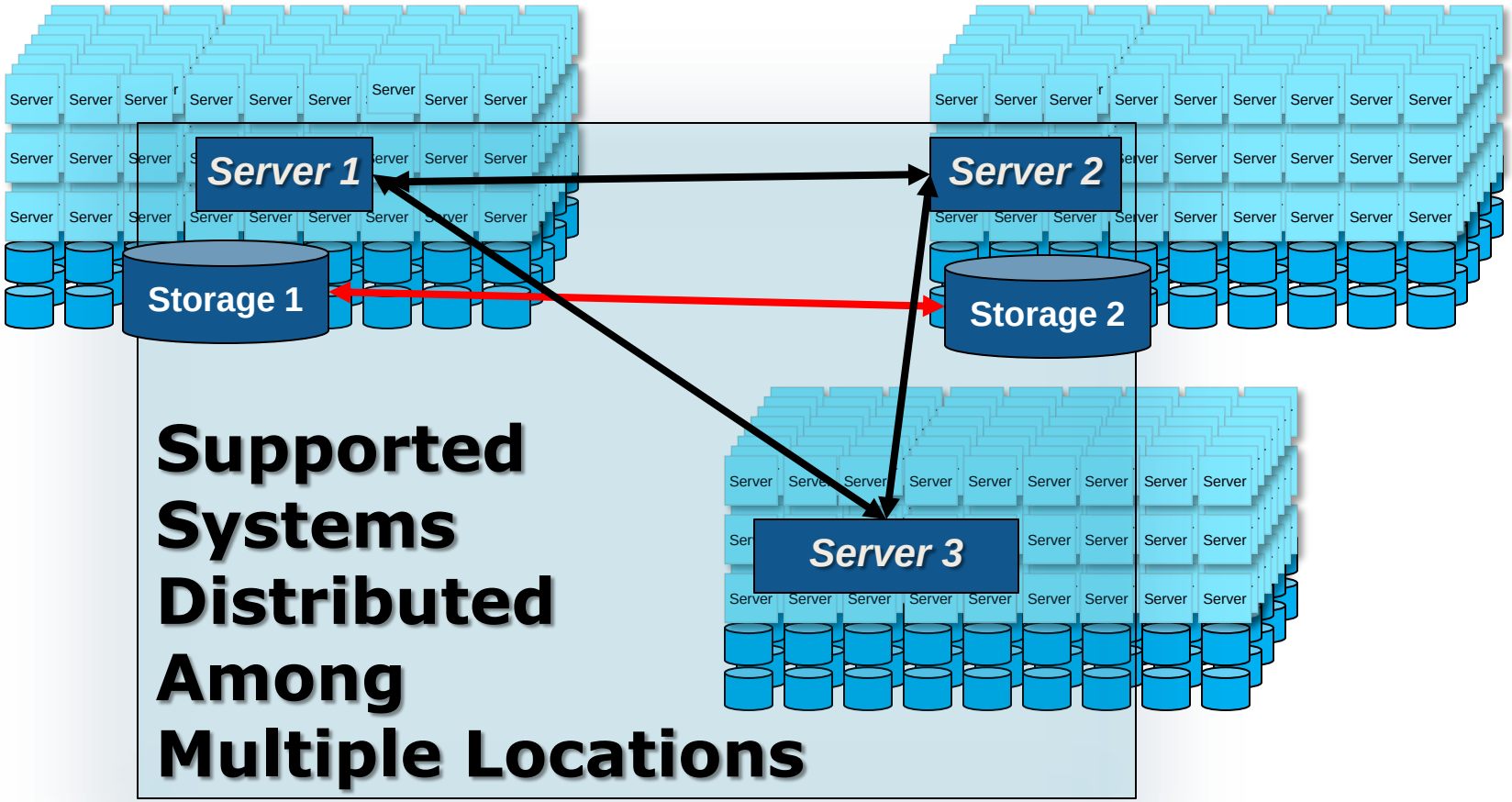


Virtualizing + Cloud Management Services *is* Cloud Computing

Three Levels of Service



A Variety of Architectures



Attributes of a Cloud Solution That impact Quality

- Traditional solution –
  - components provided from single org. must build best-of-breed capability
  - Components single-sourced
  - knowledge is centralized in one organization.
  - SOA must include Service hosting model that is an add-on.
- Cloud solution –
  - Components provided from multiple sources. Select best-of-breed providers to "buy" best-of-breed capability
  - Components more easily multi-sourced
  - knowledge is distributed among the component providers.
  - SOA integration using Cloud native delivery model

Mindset reset when moving to Cloud

- Traditional IT systems management thinking leads us to associate systems availability with service availability, so that if a network component is running normally, we assume that the services running across that network component are also running normally.
- *The "pay-as-you-go" nature of cloud computing breaks the link between component and service performance: typically, organizations pay for capacity or throughput, rather than specific components. Plus, the highly dynamic nature of the computing infrastructure that exists in the cloud makes traditional CMDB (or simple list) based systems management virtually impossible to implement.*
- *All the traditional server and network reporting that shows 99.999 up-time will become secondary and probably irrelevant for future service level management and reporting. What this means is that synthetic transaction monitoring--that is, generating, monitoring, and reporting on simulated service requests--will be of paramount importance.*
- In a world of SOA applications running on Cloud infrastructure, the concepts of IT service delivery in the enterprise and SLAs from service providers will rest upon services and processes that can run on any infrastructure components within the cloud. The notion of using discrete infrastructure components as the basis for measuring service quality goes away. This is the philosophy of the new breed of cloud systems management providers: **the focus of availability and performance measurement moves toward measuring the user experience.**

Impacts to IT Infrastructure

Impacts to Infrastructure

- How Cloud impacts the customer's IT Infrastructure
  - IT system components distributed
  - Location of system components shift
  - Licensing models become "interesting"
  - Monitoring more complicated
  - Shift from centralized to decentralized infrastructure
  - Security measure shifts from enterprise to object
  - C&A of Distributed systems
  - Perceived Loss of Control over infrastructure
  - External interfaces far more pervasive
  - Other Technologies (e.g. Mobile)

Impacts to IT Support

- How Cloud effects Support
  - Use and Load patterns become less-predictable
  - Need to better manage external service providers
  - Adapt to rapid changes in operating environment
  - More input from external sources to resolve issue
  - Enterprise configuration control more critical
  - Additional challenges in Patching enterprise SW
  - Monitoring “system” instead of “enterprise”
  - New Tool Suite required
  - Accelerated Change - Faster to-market times

Impacts to ITIL-Based Service/Quality

Impacts on ITIL Service Delivery

- IT Service Delivery Organizations
  - Product centric to Service Centric
  - Product centric focus on quality of components/functions
    - Risk mitigated by quality oversight of component production
  - Service Centric – Focus on ensuring quality of mission support
    - Risk mitigated by quality oversight of how mission support service is defined, build, delivered, and monitored. Historical delivery data key part of quality program.
- Rise in complexity of Security

Impacts on ITIL Service Delivery

- Add new services to support On-Demand resource provisioning
- Distributed infrastructure ownership shifts issue resolution
    - Comprehensive SLAs pivotal to success
    - Gain visibility into service provider methods
    - Increased Monitoring levels
- Maintain VMs that are not online
- New flavors of Configuration Management
- Changes to types of events and problems
- Rise in complexity of Security

Impacts on Service Delivery Approaches

- Focus on support across multiple locations
- Collapse number of operational processes
- Re-align user expectations
- New procedures to handle new root causes
- Security re-focused on protecting systems, infrastructure still there as well
- Expanded use of resource Catalogs

Impacts on Maintaining ITIL Service Quality

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- The ITIL v3 definition of quality is "the ability of a product, service, or process to provide the intended value.“
- Shifts in Quality validation Measures
  - Changes in architecture
  - Changes in Service Focus
  - Changes in Service Delivery Approaches
- Ensuring quality delivery is tricky, with many questions.
  - ? How can a cloud service provider assure quality delivery of services across an entity is doesn’t control?”
  - ? Service level agreements (SLAs), hummm, Maybe…
  - ? How do you ensure the SLAs are being met?
  - ? If they’re not being met, how does this affect service
  - ? How to compensate so the end-user impact are minimized

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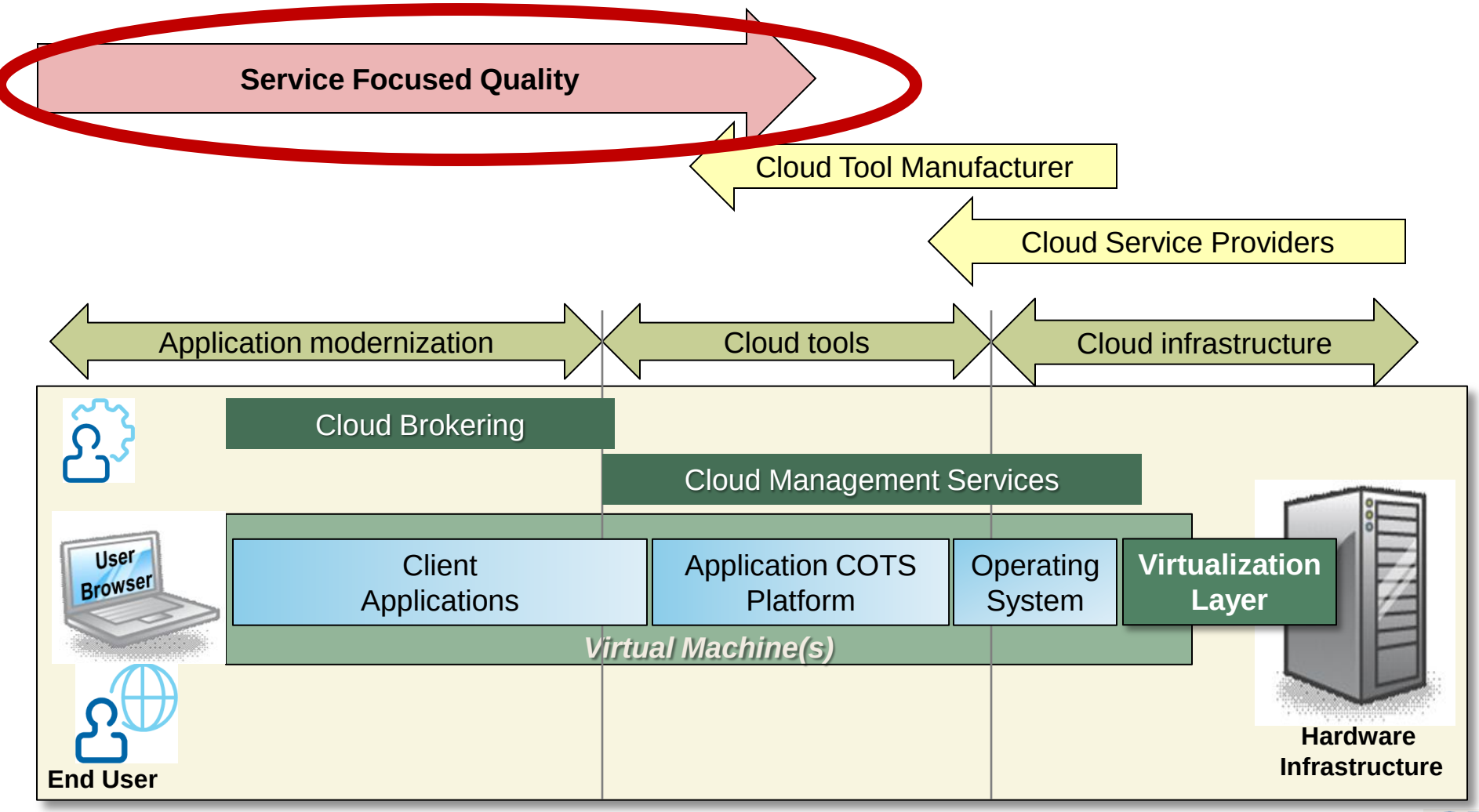
Impacts on Service Quality Approaches



Benefits to Service Delivery

- From Infrastructure Perspective….
  - Better monitoring of “systems”
  - Better failover
  - Streamlined processes through use of common tools for COOP, backup, archive
  - Better management of external service providers
  - Adaptive nature quicker to react to outages
- From Quality Program Implementation Perspective….
  - More cost effective Quality infrastructure options
  - Monitoring capabilities expanding
  - Faster detection of issues
  - Service Desk support tools imbedded in Customer IT solutions
  - “Service Support” and Quality considered in early design of IT solutions

Retooling
ITIL Quality Programs

ITIL Quality Processes changes for Cloud

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- ***The next few slides highlight areas where ITIL processes will need to adjust to support an enterprise environment consisting of a Cloud infrastructure and a portfolio of application retooled to leverage Cloud features.***

- ***This list is by no means comprehensive, or absolute. Process impacts and variations must be considered on a case by case basis.***

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ITIL Quality Processes changes for Cloud

- ***Service Strategy***
  - Demand Management must embrace “on-demand”
  - Financial Management consider SLA compliance

- ***Service Design***
  - Service Level Management – compressive SLAs
  - Service Catalogue Mgmt – Add on-demand catalog
  - Supplier Mgmt – SLA!!!
  - Availability Mgmt – Leverage Orchestration failover
  - Continuity Mgmt – Orchestration tools for real-time cutover
  - Security Mgmt – Refocus on Data/Systems, retool as needed

ITIL Quality Processes changes for Cloud

- ***Service Transition***
  - Transition Planning – embrace native orchestration capability
  - Change Management – support for Platforms, enterprise image mgmt.
  - Release mgmt – rework processes to embrace orchestration capability to enhance release approach
  - Service validation and testing – additional capabilities to test
  - Evaluation – Need to refocus metrics on Service not Component
  - KM – Taxonomy of KM will need to be adapted

ITIL Quality Processes changes for Cloud

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- ***Service Operation***
  - Service desk - retools for on-demand support, new breed of questions
  - Operations mgmt – increased use of monitoring. Focus on system more than infrastructure
  - Technical Mgmt – more wheels in motion
  - Applications mgmt – Transition through lifecycle easier
  - Event and incident mgmt – retool for new event types
  - Request fulfillment – on-demand, new root causes
  - Problem management – Supplier Integrated resolution process key
  - Access Management – Embrace federated authentication and embed access. Increased use of certificate protections

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ITIL Quality Processes changes for Cloud

- ***Continual Service Improvement***
  - 7-step process - needs to be integrated with new monitoring and with Security continuous monitoring
  - Service reporting – SLA, need to add metric reporting
  - Service mgmt – revisit metrics
  - ROI and Biz Questions – Conversation by itself

Questions?

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