Public cloud? Private cloud? What is the difference?
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Agenda

• What is Driving IT to a New Approach?

• What is Cloud Computing/ Cloud Delivery Models

• Cloud Computing Application/Workload Analysis Best Practices
IT Infrastructure and Operations Challenges

**Complexity**
- Too many technologies, tasks, and tools
- Ever expanding data

**Heightened Expectations**
- Services, and infrastructure, on demand
- Infinite scalability

**Cost Pressure**
- “Free” consumer services
- Public cloud providers offering Virtual Machines at 1/10th the cost of internal IT
Complexity also prevents driving economies of scale

Hundreds of unique tools...
Scores of unique IT skill-sets...
Dozens of unique processes...
Traditional Capacity Planning Wasteful Over-provisioning vs. Risk

- Large Capital Expenditure
- Growth Modeling
- Opportunity Cost
- SLA Impact
- Forecasting
Cost Structure of IT Infrastructure

Shift from CapEx to OpEx is very attractive

Internal IT teams now have a widely publicized cost benchmark from Rackspace

Cloud Computing Economics

Costs

Users

Traditional IT
Cloud Computing

Fixed Costs (CapEx)

Variable Costs (OpEx)

Compute Cost: $0.015/hr
What’s Driving IT to a New Approach?

**Market Forces**
- The Economy
- Anytime, anywhere IT
- IT as strategic enabler

**Business Forces**
- Defer and avoid costs
- Fix the IT bottleneck
- Map supply and demand more effectively
- De-capitalize IT
- Automate Operations
Agenda

• What is Driving IT to a New Approach?

• What is Cloud Computing/ Cloud Delivery Models

• Cloud Computing Application/Workload Analysis Best Practices
A style of computing where dynamically scalable and often virtualized resources are provided as a service.

- “Unlimited” processing and storage
- Abstracted/pooled resources
- Elastic: scale up or down
- On demand, Self-service
- Highly automated
- Consumption-based billing
Cloud Delivery Models: Public vs. Private

On-premise Private
- Company A
- Proprietary Private Cloud

Off-premise Private
- Company A
- Company B
- Private Cloud

Public
- Company A
- Company B
- Hybrid
- Provider X
- User Z
- Public Cloud

Hybrid

- Implementing a Cloud Service
  - HW, SW, Data Centers
  - Manage the implementation
  - May be outsourced or delivered as a managed service

- Consuming a cloud service
  - No hardware, SW or Data Centers
  - Manage the service
  - May use partner to facilitate use of or add value to the service
Potential Benefits and Concerns

**Private Cloud**

- Control over security, data, availability
- Investment protection
- Legacy integration
- CapEx still required
- Limited Agility

**Public Cloud**

- Minimal capital requirements, no upfront risk/commitments
- Agility
- Efficiencies of vast scale
- Less control over Security
- Regulatory concerns
Cloud Delivery Models: Hybrid Cloud

Public Cloud
- Accessible over the internet for general consumption
  - **Multi-tenant** – the ability to process the needs of multiple users with shared resources in a dynamic and transparent fashion
  - **Elastic and Scalable** – resources can expand and contract as needed
  - **Metered/Rented** – some manner of "pay for only what you use"
  - **Self-Provisioned** – "self check-in" at least to some degree
  - **Internet based** – accessible using internet technology, usually over the public Internet

Private Cloud
- Operated solely for an organization, typically within the firewall:
  - Low cost of ownership
  - Great control over security, compliance, and QoS
  - Easier integration
  - Support existing applications

Hybrid Cloud
Combining the best of Public and Private Clouds for maximum agility, elasticity and security, at minimum cost
Open vs. Proprietary Cloud Solutions

- Closed & Proprietary
- Vertically Integrated
- Locking

- Open & Industry Standard
- Interoperability
- Choice
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Why Move Application to Cloud

- **Elasticity** – resources can be provisioned and de-provisioned in real time to meet workload demands

- **Utility** – resource usage is provided on a “pay as you go” basis, as opposed to the traditional approach of incurring the upfront capital expenses and ongoing operational expenses, even if the resources are under-utilized

- **Ubiquity** – services from the cloud are available from the world-wide web, enabling user interfaces that go beyond traditional workstations and include cell phones and other appliances
Which Cloud is “Right” for Your Application

This is relative, not definitive positioning

Cloud

Private Cloud

Traditional

Security Requirements

HIGH

LOW

Mail and Collaboration

Analytics and Reporting

Web

Software Development/Test

Conventional business applications with:
- Patient Data
- Employee Info
- Financial Info
- Customer Info
- Government

Document Management

DR

Financials and Planning

Mission Critical/OLTP

Routine and Elastic Applications

Routine Applications

Critical & Complex Applications

Business & Data Sensitive Applications
Source and Govern Services That Result in the Right Business Outcome

IT organization

Cloud Services
Hosted, managed services
Internal services

Service Sourced
Service portfolio
Service Delivered

Business outcomes
Accelerate growth
Lower costs
Mitigate risk
Consuming Cloud Computing Services

• **Benefits**
  – Capability & capacity on demand
  – Reduced operational complexity & cost
  – Variable operational cost models
  – Leverage provider innovation & new solutions

• **Challenges**
  – Security, regulatory/compliance
  – Lack of transparency & control
  – Technical issues & service assurance
  – Not always the least expensive approach

• **Mainstream Use Cases**
  – Variable/volatile workloads, rapid provision/change
  – Dev. & test, RAD for opportunistic applications, web applications, selected SaaS, simple HPC

• **Best Practices**
  – Start with a business impact analysis
  – Establish governance policies
  – Leverage existing sourcing models
  – Develop contingency plans upfront

![Business Impact Analysis Diagram]

- **Consider Private**
- **Embrace Public**
- **Avoid**
- **Experiment**

- **Benefit**
- **Low or Uncertain**
  - High & Clear

- **Challenges**
- **High or Unmanageable**
  - Low & Manageable
Wrap Up

• Cloud computing has quickly emerged as one of the top new technologies in the IT industry

• A structured approach based on workload analysis is recommended to determine the appropriate applications for the cloud

• There is tremendous value in moving the right applications to the cloud

• Chose an Open architecture cloud provider that can best meet the needs of your business

Try it now!