Cloud Computing: The Next Big Thing in IT

Steve Pierce
Scott Mackey
Steve Kranz
August 8, 2012
What is “Cloud Computing”? 

“...a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction.”

- National Institutes of Standards and Technology
AT&T Cloud-based, On-demand Solutions
Meet Customer Needs

Improve My Productivity
• Real time collaboration across employees, partners, customers
• Requirements for applications to work across devices

Reduce My Cost
• Low storage and server utilization in non-peak periods
• Desire to pivot from Capex to Opex

Remove the Complexity
• Simplification due to limited IT staff down market
• End-to-end ownership vs. multi-vendor service integrations

Demand to mobilize and virtualize assets, applications and activities

• Off-premise
• On-demand
• Easy to Use
• Web-enabled
• Device Agnostic
• Tiered Support
# Cloud Deployment Models Transfer Responsibility

<table>
<thead>
<tr>
<th></th>
<th>Customer Management Responsibility</th>
<th>Service Provider Management Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Software as a Service</strong></td>
<td>Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Database</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Servers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td></td>
</tr>
<tr>
<td><strong>Platform as a Service</strong></td>
<td>Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Database</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Servers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure as a Service</strong></td>
<td>Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Database</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Servers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage</td>
<td></td>
</tr>
</tbody>
</table>
Cloud Deployments:
Infrastructure as a Service

AT&T Synaptic Storage and AT&T Synaptic Compute

• **Benefits**
  – Reduced capital costs
  – Increased flexibility
  – Meet dynamic demand for applications

• **AT&T Difference**
  – Combine network + IT resources for greater control
  – Network based security

What is Infrastructure as a Service?

• Storage and Computing resources delivered via the network.
• Provision easily and immediately via a portal.
• Turn on and turn off resources as-needed.
• Pay for only what you use.
Cloud Deployments:
Platform as a Service

AT&T Platform as a Service

• Benefits
  – Quickly launch applications
  – Automate business processes
  – Meet needs of users

• AT&T Difference
  – Broad portfolio of complementary services like mobility and networking.
  – Stability, scalability, performance and global reach

What is Platform as a Service?

• Complete, ready-made technology stack.
• Standardized infrastructure on which you can deploy applications.
• Scale up as you draw more users.
• Pay per user, per month.
Software as a Service
AT&T Workforce Delivered & Siebel® Case Management

AT&T Today
• Software on shared infrastructure
• Subscription licenses offered on a “term” basis for certain applications
• Initial upfront payment for hardware
• Per user, per month fee thereafter for certain applications

AT&T Tomorrow
• One application instance deployed in AT&T IDC
• Multiple organizations access and use the application.

Benefits
• Lower total cost of ownership for applications
• Easy access for distributed workforces
• Reduce time to deployment

Software as a Service?
• Full software functionality
• One software instance delivered to multiple customers over the Internet
• At term end, customer has no access to application.
• Pay per user, per month.
AT&T Platform as a Service

Build, Run, and Mobilize your Applications in the Cloud
Cloud Continuum

Software as-a-Service

Software is specific to Application license (not a platform to create apps)

Integration at all Layers
- Fully integrated Stack
- Integrated User Experience
- Integrated administrative tools

Area of Focus

Platform as-a-Service

Additional Components necessary for Applications

Infrastructure as-a-Service

Integrated through hardware and OS levels
AT&T Platform as a Service
Quickly build and run your applications in the cloud

Create **business productivity** apps without writing a single line of code

**Over 45 Pre-built application templates included:**

- Sales Force Automation
- Expense Management
- Project Management
- Job Leads
- Office Space (shared calendar and other productivity tools)
- **Many others**

**Developers** – ISVs, enterprise developers, or LoB owners

**Fully managed PaaS Environment**
Includes: Web Svr, App Svr
DB, Prog Language, IDE

**Social Networking (Relay)**

**Enterprise user** – Access app from standard browser interface

**Mobile client** – extend apps to mobile devices seamlessly (mobile web today, mobile app in future)

**Flexible  Secure  Expansive  Efficient**
3 Easy Ways to Build an Application

1. Create using one of the pre-built app templates in our catalog

2. Import from spreadsheet

3. Create with easy to use wizard
DEMO TIME
PaaS Demo with Web Interface

In store survey

- Fill out survey for a super discount
- Sign on retailer shelf
- Scan Bar Code
- Fill out Survey
- Receive Coupon via SMS

Web App on AT&T PaaS

Survey results

Operations VP
Saber Tooth Athletic Apparel

Got a smartphone?
Scan the code below; fill out our survey & get a FREE GIFT!
Mobile Web Interface
Real Time Reporting to drive Business Intelligence

All data collected from surveys

Custom reports for driving business decisions
Demo Instructions

1) Have customer use AT&T QR-Code Scanner to scan the QR-Code on the ad on previous slide

2) Ask them or you fill-out the Survey to get a Coupon Code

3) Log-in to PaaS: [https://paas1.attplatform.com/](https://paas1.attplatform.com/)  
User ID: rt7186  PW: CHIlet3U

4) Show the record the customer just entered on the Top Right panel (All Survey). You can click on each record to see the discount code (Record ID), customer information, etc.

5) Show the automatically generated Analytic reports on the Left panels

6) Talk about how we created this demo in less than 3 hours
Tax Policy Challenges for Cloud Based Services
Characterization

- No Clear Tax Treatment – What is the service?
  - Software – delivered electronically versus access
  - Data Processing Service
  - Computer Service
  - Information Service
  - Lease of Tangible Personal Property
  - Communication Service
  - Ancillary Service
  - Storage Services – Does ITFA apply?
  - Not Enumerated Taxable Service
Characterization (cont’d)

• Why does characterization matter . . .
  ▪ Determining taxability – states have different definitions
  ▪ What use based exemption may be applicable
    ▪ Resale, Manufacturing, R&D, etc.
  ▪ What state properly asserts that tax - sourcing
Sourcing

• Where is the service taxable?
  ▪ Server Location
  ▪ Contracting Address
  ▪ Billing Address
  ▪ User Location – potentially multiple locations
  ▪ Duplicate taxation of the same transaction
  ▪ User not always purchaser
Nexus

- When a customer purchases cloud computing services, does the vendor’s server location create nexus for the customer?
- Whose footprint matters?
  - Customer?
  - Vendor?
  - Both?
Overview of the States

- Most states treat “prewritten computer software” as tangible property, but taxability may vary:
  - Tangible storage media
  - Downloaded
  - Remotely accessed

- Most states exempt services unless specifically identified in statute

- Where do “Cloud Based Services” fit?
Key Issues for Policymakers

• What is it?
  • Software
  • A service
  • Combination of the two

• Is there a non-Cloud Based equivalent service?
  • Is the equivalent taxed?

• Where is the service performed / delivered?
Key Issues for Policymakers

• Economic impact / economic development
  • Impact on providers of cloud based services
  • Impact on purchasers of cloud based services

• Potential for tax pyramiding
NCSL Task Force Principles

• Consensus process including:
  • Legislators
  • Tax administrators / SSTP reps
  • Industry

• Approved by Task Force on August 6, 2012

• Frame issues for legislatures wishing to examine taxation of Cloud-Based Services
NCSL Task Force Principles

• 1A -- Establish consistent sourcing rules to prevent double taxation or tax avoidance

• 1B -- Do not impose discriminatory taxes on Cloud Based Services
  • Tax rate discrimination – higher rates on CBS
  • Tax base discrimination – tax CBS while exempting equivalent non-CBS
  • Key question – is there an equivalent?
NCSL Task Force Principles

• 2 -- Base tax decisions on the service, not the type of provider

• 3A -- Tax imposition decisions should be made by legislators, not administrative rulings

• 3B -- Make definitions clear to avoid uncertainty
NCSL Task Force Principles

• 3C -- Recognize that Cloud Based Services encompasses a broad range of services which need to be addressed in statute

• 3D -- Design impositions on specific and clearly delineated services or, in states where statutes already tax services broadly, make exemptions (if any) clear
NCSL Task Force Principles

• 3E -- Involve providers of Cloud Based Services in drafting statutes governing taxability and sourcing

• 3F -- Provide clear and consistent rules to govern bundled transactions involving Cloud Based Services
Concluding Thoughts

• NCSL principles can help guide legislative discussions

• Tax imposition decisions should be made by the legislature

• Legislative review may trigger broader conversations about taxation of services
Contact information

Scott Mackey  
Economist / Partner  
KSE Partners LLP  
www.ksepartners.com  
802-778-0236

Steve Kranz  
Partner  
Sutherland Asbill & Brennan  
steve.kranz@sutherland.com  
202-383-0267

Steve Pierce  
Director  
AT&T Proof of Concept Labs  
sp6281@att.com  
312-214-6507