Cloud Computing – Business Drivers

GTC Southwest

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We Talk About…

- Driving Innovation to the Citizen
- Getting the most out of limited resources
- No capital funding
- Being innovative – being willing to think outside the box
- Changing technology
- Reducing total cost of ownership
- Improved service delivery

And, we talk about…cloud

Premise

We cannot afford to continue as we have

We will do some things in a cloud

Maybe lots of things…

Premise

Inevitable

Some Basic Considerations

- Protection of investments in existing skills & infrastructure
- Acquisition and Funding Strategies
- Delivery and Sustainment Models
- Location
- Security / Privacy / Liabilities
- SLA's – Well defined & enforceable
- Quality Assurance Plan
  - Roles & Responsibilities
  - Methods of Surveillance / Monitoring
  - Problem Reporting
  - Escalation Procedures
  - Ordering, Delivery, Installation
- Extrication / Disentanglement
- Define YOUR REQUIREMENTS

Thought Leadership

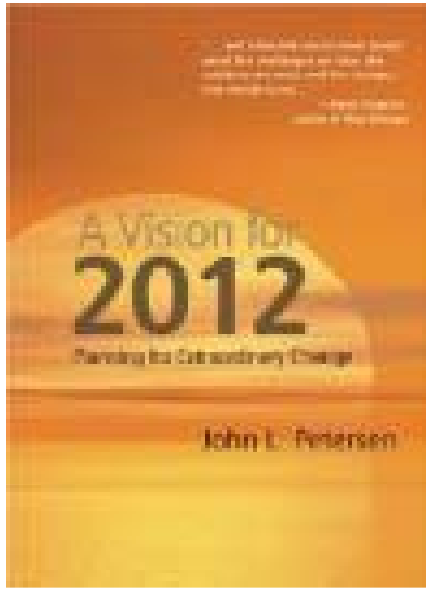
2008

"Where's the computer chip that processed your last Google search? You don't know and you don't care – any more than you know or care which generation station produced the kilowatts that light the lamp on your desk."

Nicholas Carr
The Big Switch

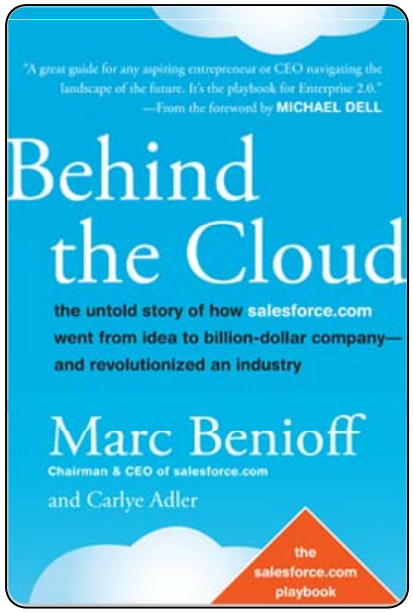
"It is interesting to be writing these words at a time of complete dependence on the Internet – which only became generally known about 15 years ago – and wonder how we will be communicating with each other in another dozen years."

John L. Peterson
A Vision for 2012



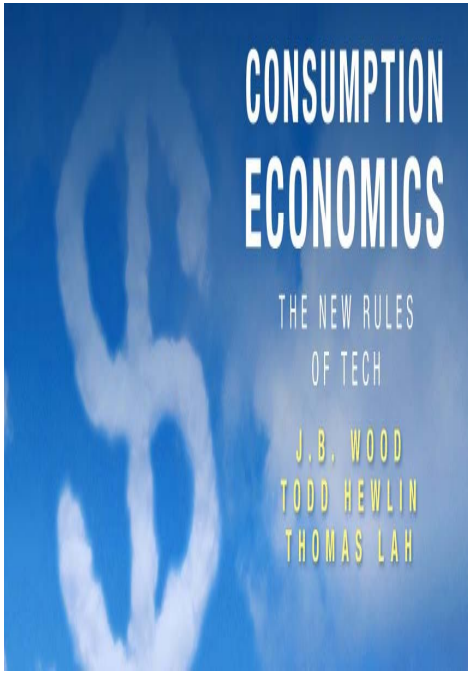
2008

Thought Leadership



2009

2010



2011

What Is Cloud Computing?

- Cloud decision-making can be a “foggy” venture
  - There are external clouds, internal clouds, and hybrids
    - aka: Public, Private, Hybrid
  - There is a near-infinite variety of cloud service offerings
    - SaaS, PaaS, IaaS, CaaS, HSMaaS, EaaS, etc. etc. etc.
- It’s not easy to get a handle on it all
- What are the various factors involved in moving to the cloud and how, when and where it makes the most sense for government operations??

What Is Cloud Computing?

- Marketing hype and buzz words
  - "Purchase-to-Peak" Creep
  - "Pending Storm"
  - "Cloud Bursts"
- The newest big thing in IT
- Nothing new
- A software mainframe
- A solution for me?
- Who cares?
- All of the above

Cloud Perspectives

Wikipedia

Cloud computing provides computation, software, data access, and storage services that do not require end-user knowledge of the physical location and configuration of the system that delivers the services. Parallels to this concept can be drawn with the electricity grid, wherein end-users consume power without needing to understand the component devices or infrastructure required to provide the service

Cloud computing is the delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service

Cloud Computing - Wikipedia

- **Public cloud**

  Public cloud describes cloud computing in the traditional mainstream sense, whereby resources are dynamically provisioned to the general public on a fine-grained, self-service basis over the Internet, via web applications/web services, from an off-site third-party provider who bills on a fine-grained utility computing basis

- **Private cloud**

  Private cloud is infrastructure operated solely for a single organization, whether managed internally or by a third-party and hosted internally or externally

- **Hybrid cloud**

  Hybrid cloud is a composition of two or more clouds (private or public) that remain unique entities but are bound together, offering the benefits of multiple deployment models

Another Thought….

(From a laymen's perspective)

Cloud computing: a concept to

- Connect to the network
- Identify who you are
- Discover and share information, and
- Collaborate with whomever for the purpose at hand

- And……do so safely and securely

And, ideally on-demand – self-provisioned – self-organizing

Fundamental questions, though….

- Control
- Availability
- Privacy
- Security
- Culture

What Problem Are We Trying to Solve?

Cope with changing technology?

No capital funding?

Go green?

Improve service delivery?

Deal with growth?

Attain scalability?

Reduce cost?

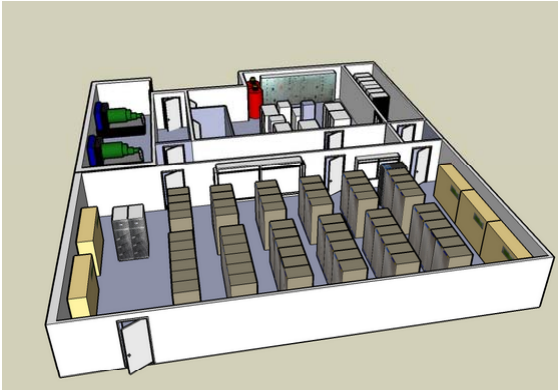
Improve efficiency?

Improve security?

Cloud

Outsource

Co-Lo



A different idea?

Dilemma…

How can we get the power of the cloud

And deal with

- Data ownership and privacy
- Loss of control
- The reputation of outsourcing

PENSKE Logistics

"We work as an extension of your business, developing cost-effective, specific transportation solutions. We help you with all aspects of fleet management from the spec'ing and financing the right equipment to maintenance and more…. We bring our team of experts to your shop and provide turn-key services to help make fleet management your competitive advantage."

How Should It Work?

Operations and Security

Customer Drives

Variety of Options

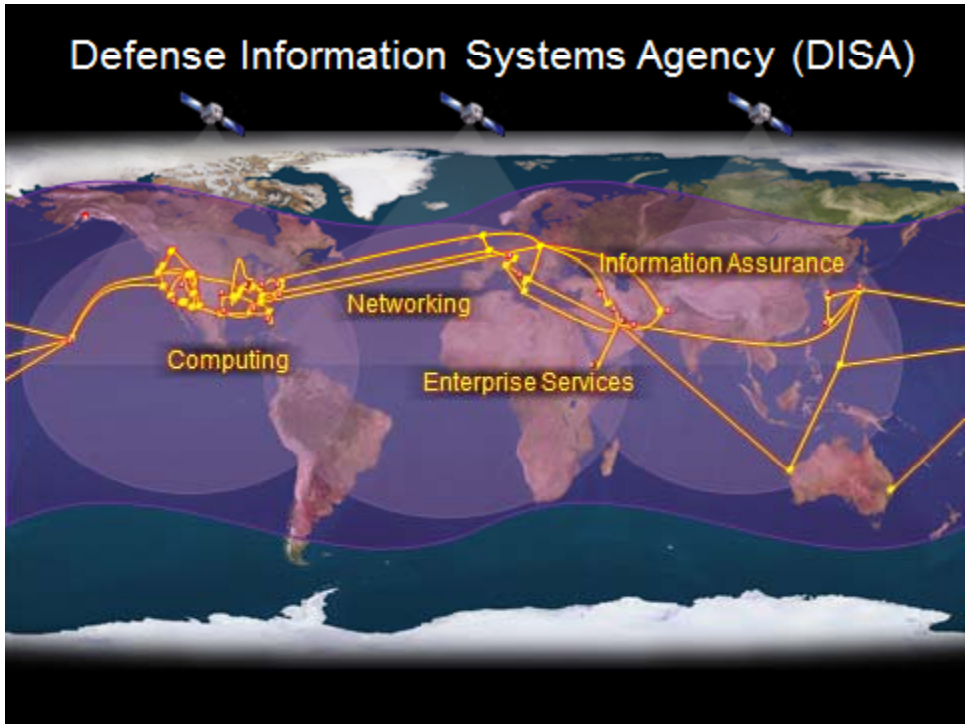
Generic Offering $

Brand Specific $$$

Support

With 24x7 Support

Defense Information Systems Agency



Business as usual was…

- **Too rigid**
  - Little agility or flexibility
  - Could not quickly scale up and down based on operations tempo
- **Too slow**
  - Long delivery times
  - Lag time from demand – to solution – to ready-for-use
- **Too expensive**
  - Poor data center efficiency – paying for unused capacity
  - Hard, non-recoverable investments
  - High procurement costs

15 Defense Enterprise Computing Centers (DECCs) serving the DoD
$1 billion fee-for service data processing business

Operational Imperatives

Asymmetric challenges

Irregular warfare

Terrorism

Humanitarian

Disaster Recovery

Someone else's schedule

Counter-Insurgency

Unpredictability – ad hoc partners

Cyber

Missile Defense

Anti-Piracy

Speed and agility

Broad information sharing

Efficiency Imperatives

Common use – things you don't have to do yourself

On-demand infrastructure

Time to deploy

Security – certification & accreditation built in

Agility – operating dollars, not capital

Reduced total cost of ownership

So….What Was the Answer for DISA?

They Began to Crawl Into the Cloud…

…By Attacking Scalability – and Cost

…With Capacity-on-Demand

Results With Capacity Services

- **Mission and operations – DISA drove the car**
  - Just-in-time capacity – matching capacity to demand – quickly
  - Tech refresh on auto pilot – predictable and funded
    - Eliminated technology obsolescence
  - Better asset and configuration management

- **Speed and agility – pre-competed sources of capacity**
  - Call orders against single contract – delivery from months to days
  - Much reduced procurement time, cost – buying a service, not hardware
    - Avoided single procurements for each upgrade and expansion

- **Total cost of ownership** Dramatic reduction!
  - Paid only for what is used with all costs inclusive
  - Managed down excess capacity to near zero
  - Reduced procurement time and resulting "grey" costs
  - Gained economy of scale and buying power

Capacity-on-Demand – as a Service

Service User

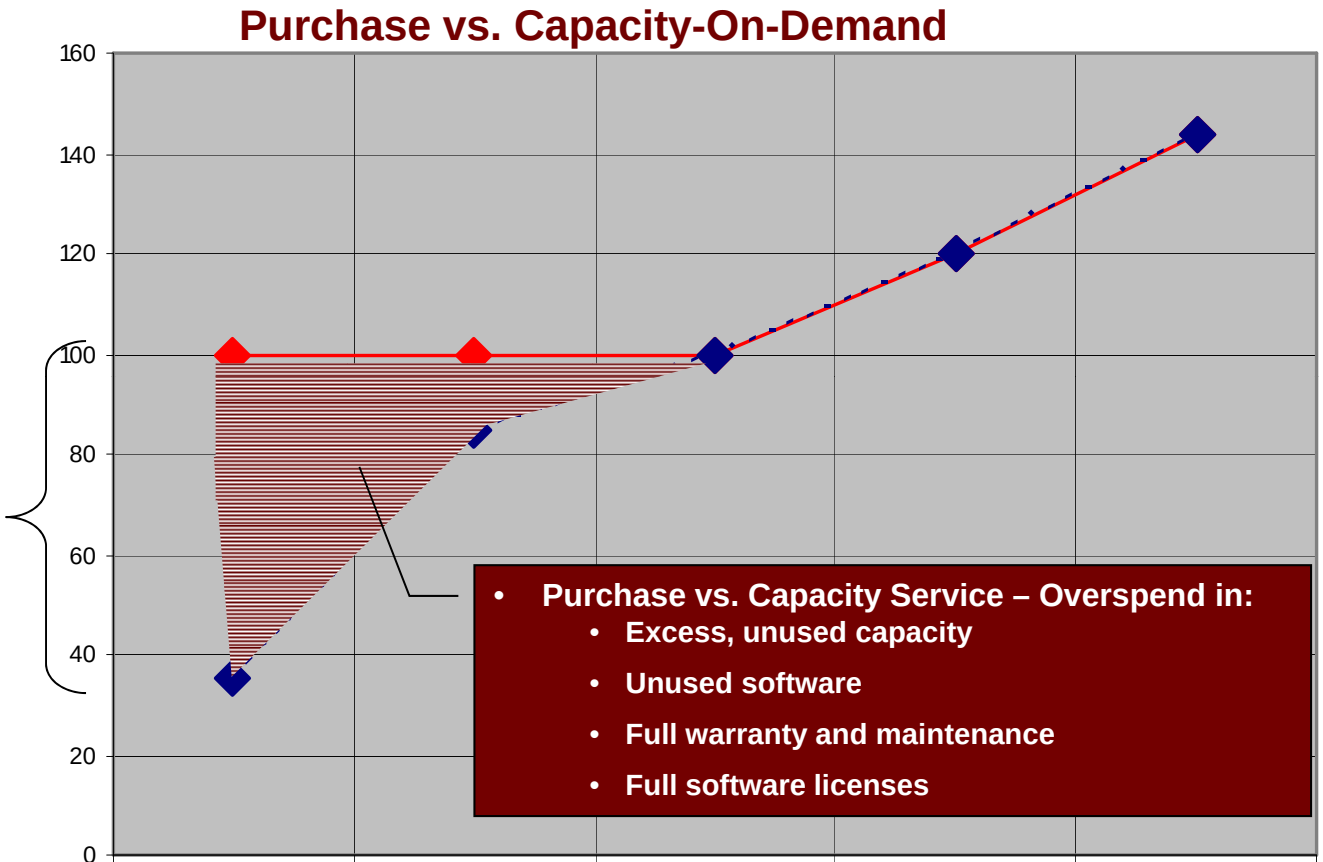
- Procures computing, storage, network assets as a service
  - Issues call orders to scale up and down based on demand – response in days
  - Includes maintenance and tech refresh
- Retains operational control and oversight
  - Shares capacity management with the capacity vendor
- Sets quality of service desired
- Pays for service based on the measured capacity consumed
- Pays with operating dollars

Service Provider

- Provides data center capacity as a pay-as-you-go service
- Retains ownership of the servers, storage, and network assets
- Locates equipment in customer's data center
- Provides racks, cabling, etc.
- Acquires, installs, maintains, de-installs, configures all hardware
- Provides tech refresh and software – as part of the cost
- Meets SLAs

Efficiency and Cost-Effectiveness

- If you purchase a 100TB system, and
- The actual capacity need is 35TB in year 1; growing to 85TB in year 2 and 100TB in year 3
- Excess capacity purchased in year 1 is 65TB and year 2 is 15TB
- Highlighted region is overspend in advance of actual need



	Year 1	Year 2	Year 3	Year 4	Year 5
Purchase (Units)	100	100	100	120	144
Capacity (Units)	35	85	100	120	144

It is a significant change…..

Total Cost of Ownership

Costs for the "Normal" Way of Doing Business

- The hardware itself
- Maintenance and warranty
- Software licenses
- Procurement lead times, staff time
- Preparation for use – racks, installation, security compliance
- Tech refresh
- Improvements in functions and features
- Data center inefficiency

Cost with Capacity Services

- Cost per TB or CPU per day declining over time

ViON

Acquisition and Funding Strategies

- Long Term Commitments
  - Location, Security, Pricing, Terms, SLA's, QAP
  - Quantities
- Up Front / Initiation Fees
- Price Erosion
- Technology Refresh
- Tracking, Billing, & Audit Capabilities
- Choices of Platforms

Delivery and Sustainment

- Hardware
- Software
- Maintenance
- Engineering
- High Availability
- Features
- Functions
- “Extras”

Delivery and Sustainment

- Transportation of Equipment To/From Site
- Unpack, Inventory, Install, Format
-
- Logical Configuration
-
- Initial Installation & Setup of Software
-
- Knowledge Transfer
- Assistance with Performance, Usage, Remediation
- Relocation & Reconfiguration
- Replication Planning & Setup

Thought Leadership

Blind Spot describes a framework focused on business leadership and it defines and describes the principles and mechanisms for an IT-enabled business transformation:

Why - Why do anything?
What - What should we do?
How - How will we do it?
Who - Who will lead and manage change?

Charlie Feld
Blind Spot

Total Cost of Ownership – a Blind Spot

- The blind spot – not seeing and considering all costs in comparing alternatives
- TCO perspective – and dilemma – where you sit is where you stand
  - Perspectives are different from headquarters to the CIO to the data center
  - Leading to misunderstanding – and miscalculation – of total cost
- Comparisons of alternatives require understanding of
  - Costs of the hardware itself
  - Operations and support costs
  - Opportunity costs

How to Begin? Crawl Before Sprinting

It is a significant change…..

- Begin small, for example…
  - Tech refresh
  - Disaster recovery site
  - New systems
  - Changes in capacity needs
  - High growth workloads
  - Workloads with significant capacity variation
  - Reduction of maintenance costs
  - Ease end of warranty dilemmas
- Why? Sell the concept
  - Test drive the arrangement
  - Build confidence in the new way of doing business

Capacity services has been proven to be

- A good first step toward getting something out of the cloud concept
- A change accelerator
- A compelling, low-risk acquisition strategy that provides speed and agility – and reduces TCO

VION CORPORATION

Conclusions

Use smart sourcing to get cloud power and efficiency…

- Options exist
- Understanding TCO is crucial
- Affordability is a leadership call
- Managing risk is doable

Move into the cloud that which makes sense

- Some things belong, some do not – not all data is the same
- It's an informed leadership call

Conclusions

Doing More with Less

Public / Private Partnerships

Consolidation

Transformation

Collaboration

Inevitable

Driving Innovation to the Citizen

THANK YOU!!

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