Business Alignment of Technology Strategy

Doing Business in a Cloud

IT Portfolio Management

➢ *Definition, Construction, Operation and Change*

Focus on Operations

➢ *Cost Transparency*

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The Business Driver for Cloud Computing

Practical to Clients is Current IT Portfolio Management

Focus on Operations

Cost Transparency is a pricing function, **TRiV(*x*)**™ is a Technology Pricing Function

Deep, Deep Operational Re-Integration

High Value Activity

Strategic IT (7-18Mo)

IT Portfolio Management

➤ *Massive cost structure reduction:* *The Target*
  35-50%, 10-24 mon. Horizon

➤ *Cloud == SOA + *aaS + HPCDG:* *The Arrow*
Crossing the Chasm, 7-24 mon. Horizon

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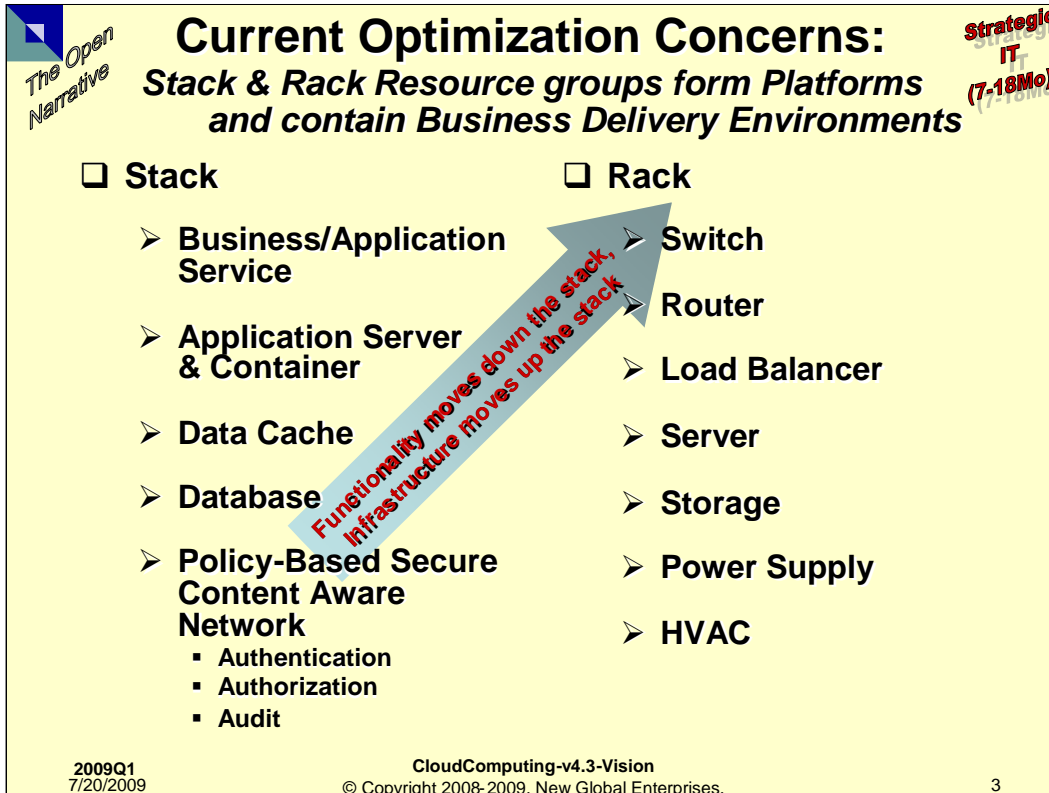
To Two Years and BEYOND!!

  2010's Decade: Low Cost Structure == Competitive Advantage

IT Portfolio Cost Measure

1. Commodity Technology Cost Index: The CoTeCI
2. Rack Components
   a. Processor
   b. Disk
   c. RAM
   d. Bandwidth
3. Stack Components

Showing Business the cost of a system for their functionality, Real BI: Before Investment

Current Optimization Concerns:
Stack & Rack Resource groups form Platforms and contain Business Delivery Environments

❑ **Stack**

> **Business/Application Service**

> **Application Server & Container**

> **Data Cache**

> **Database**

> **Policy-Based Secure Content Aware Network**
> - **Authentication**
> - **Authorization**
> - **Audit**

❑ **Rack**

> **Switch**

> **Router**

> **Load Balancer**

> **Server**

> **Storage**

> **Power Supply**

> **HVAC**

Functionality moves down the stack, Infrastructure moves up the stack

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IT Components to Model

- Racks are all commodity
- As one moves deeper in the stack, functionality becomes commoditized
- Top of Stack is in continuous commoditization: 3-5 year period

Functionality

- Moving Up with Virtualization
- Moving Down into Infrastructure

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Operational Cycle of Clouds

❑ Configurations and Deployments

  ➢ Abstraction of Platforms and Environments

❑ Virtualization of all Resources

  ➢ Abstraction of Configuration Deployment

❑ Clouds == SOA + *aaS + HPCDG
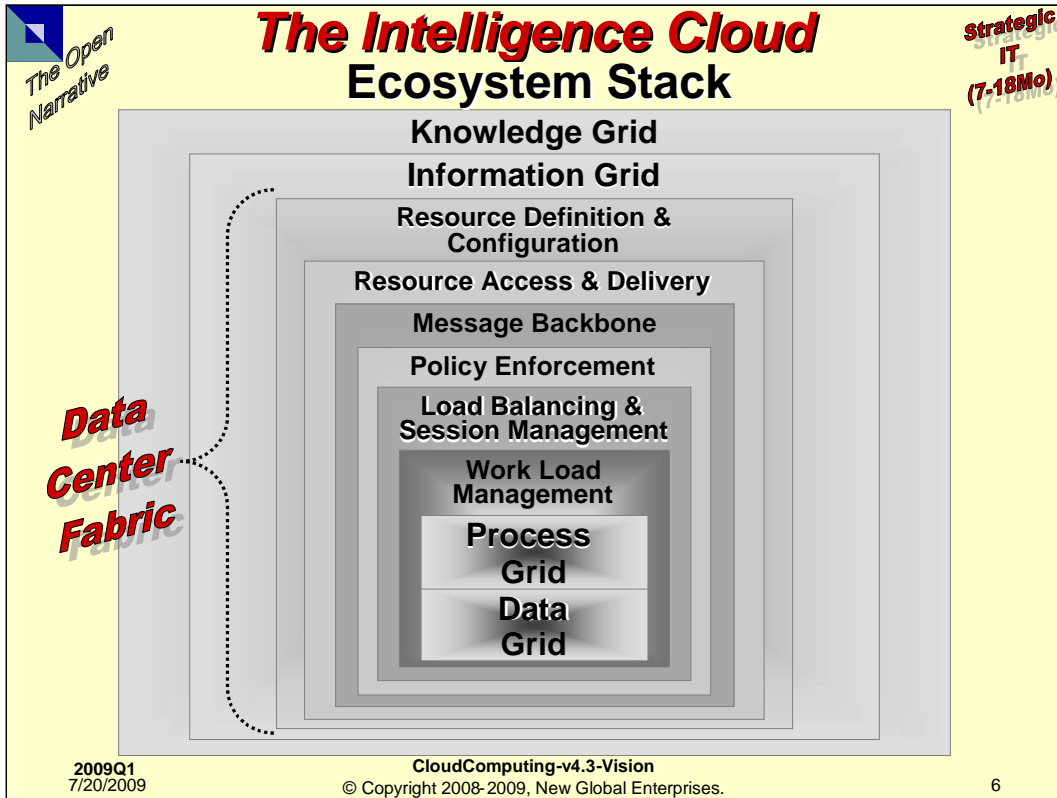   => IaaS, SaaS, PaaS + EaaS

  ➢ Abstraction of Virtualization
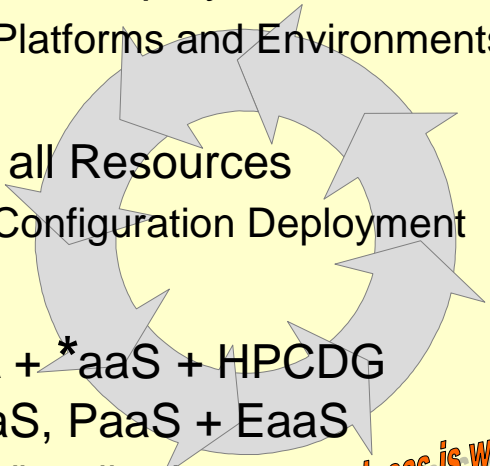
Business is where the Environment is
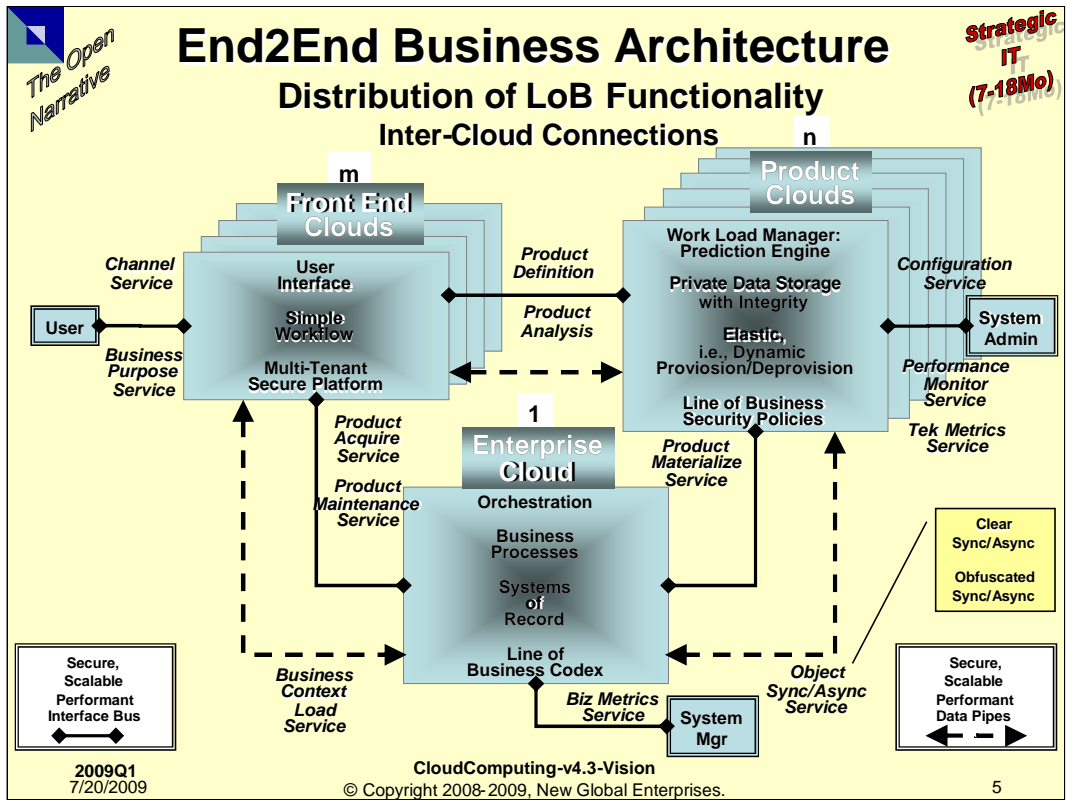
NB The Peer2Peer connections with the Data Pipes and Interface Bus

EBb Data Streaming and Services Request Messaging Protocols, respectively

Context of Record is CoRe

The Intelligence Cloud
Ecosystem Stack

The Open Narrative

Strategic IT (7-18Mo)

Knowledge Grid

Information Grid

Resource Definition & Configuration

Resource Access & Delivery

Message Backbone

Policy Enforcement

Load Balancing & Session Management

Work Load Management

Process Grid

Data Grid

Data Center Fabric

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Categories to own

Resources are Services & Information

Messages are Service Requests, Events and Data

The Cloud Stack

Desperately Seeking Ecosystem and Fabric Suppliers:
Configurations and Deployments

The Open Narrative

Strategic IT (7-18Mo)

- ❑ *Adequate Security is the Prime Enabler for Clouds*

  Single Sign On

- ❑ **Strategic IT Portfolio Management**

  IT Competencies

  - ▪ 18++ months
  - ▪ 7-18 months
  - ▪ 4-6 months
  - ▪ 0-3 months

Single Sign On 2009

Analytics and Web Hosting need Grid-Like Infrastructure especially Data

The Intelligence Cloud
Ecosystem Stack

Strategic (7-18Mo)

| Knowledge Grid |
| Information Grid |
| Resource Definition & Configuration |
| Resource Access & Delivery |
| Message Backbone |
| Policy Enforcement |
| Load Balancing & Session Management |
| Work Load Management |
| Process Grid |
| Data Grid |

IT Competencies 2009

2008Q3
10/5/2008

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Security is
The Prime Enabler

With
Adequate Security,
Cloud Computing
is a
viable business choice

Provisioning
Trust and Privacy
with
Strong Policy Enforcement

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Strategic to the Business

Adequate Security:

      Trust

      Privacy

      Strong Policy Enforcement

Classic Entity Relationship
Cloud Design Pattern
as a Service Delivery

Tenant

Trust Holders

Landlord

1

1

n

Property

m
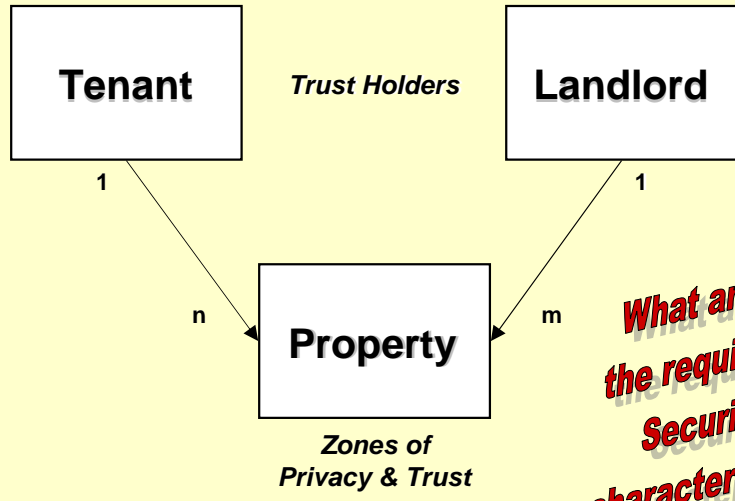
What are the required Security characteristics?

Zones of
Privacy & Trust

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Evaluate *Multi-Tenant, Multi-Landlord Platforms* for Fitness for Business Purpose Environments
IT Operational Sourcing

Strategic IT (7-18Mo)

❑ Provides Zones of Privacy & Trust

How Secure is it?

- ➢ Identity Management
- ➢ Access Policy Enforcement
- ➢ Auditability
- ➢ Integrity of communications and data storage
- ➢ Non-repudiations of actions

❑ Virtual Data Stores

- ➢ Data Persistence Transparency
  - ❖ Services are delivered data on an as-needed basis
  - ❖ All external references are in a single namespace

How Easy is it?

- ➢ Data are Specifically and Generally Locatable
  - ❖ Accommodate sovereign regulations
  - ❖ Replication
  - ❖ Caching
  - ❖ Segregation

❑ Process Management *How Hard is it?*

- ➢ Segregation
  - ❖ SOX, HIPAA, Industry Regulatory Oversight

- ➢ Standard Interaction Protocols
  - ❖ Service Invocation
  - ❖ Event Dispatch
  - ❖ Data Distribution

❑ Development Capabilities *Another Prime Enabler*

- ➢ Specification
- ➢ Realization
- ➢ Deployment
- ➢ Instrumentation
  - ❖ Environment
  - ❖ Application Work Flow
  - ❖ Business Process
- ➢ Testing/QA

❑ Operational Risk Management

- ➢ Misfeasance
- ➢ Malfeasance
- ➢ Piracy

How Safe is it?

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Force.com Platform, Amazon EC2, Google Tools
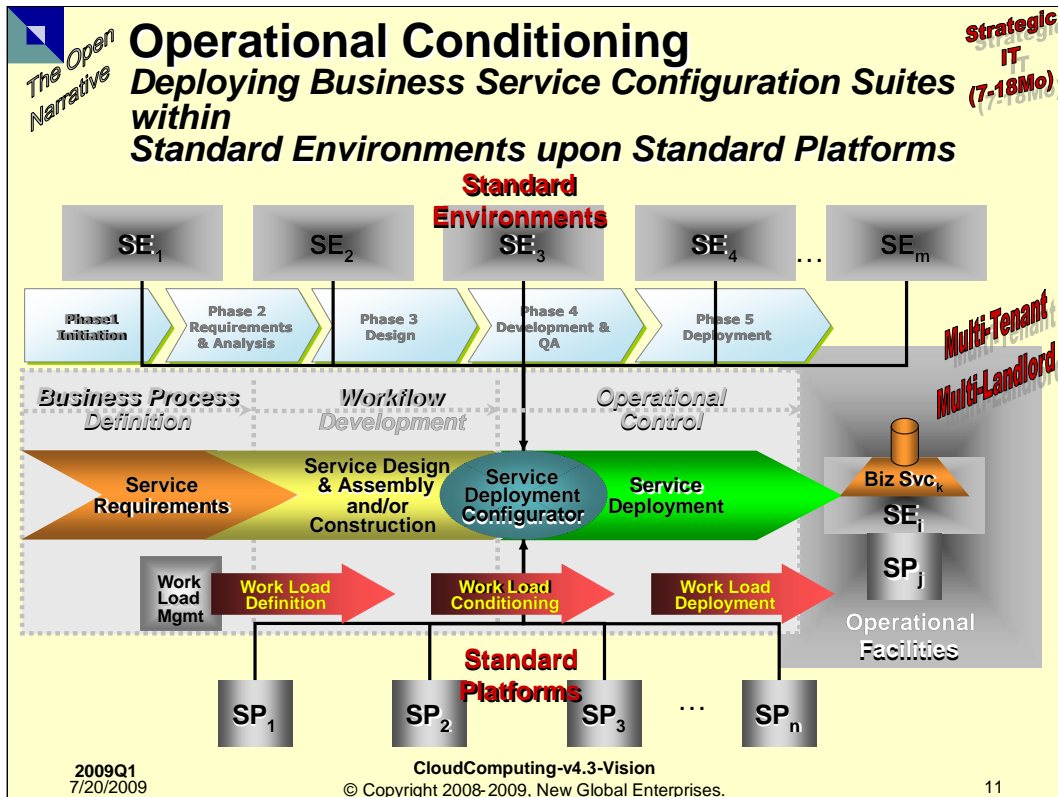
Application Development Process Infrastructure

View this page as a presentation to see the story of **Standard Environments upon Standard Platforms**.

Multi-Tenant, Multi-Landlord Platforms

The Standard Specification Nibs

1. BP Definition
2. Work Flow Development, and,
3. Operational Control

Codex is developed and maintained through the IT Project Delivery 5 Phases: Initiation, Requirements & Analysis, Design, Development & QA, Deployment

Specifically, services are defined via a Service Requirements Process, followed by a Service Design & Assembly and/or Construction Process, bridged by a Service Deployment Configuration Process that binds the Business Standard Environment for that Service with a Technology Standard Platform.

And in so doing, the Work Load is defined, conditioned and deployed.

Cloud Computing:
Business Relevance
Converting Resources into Results

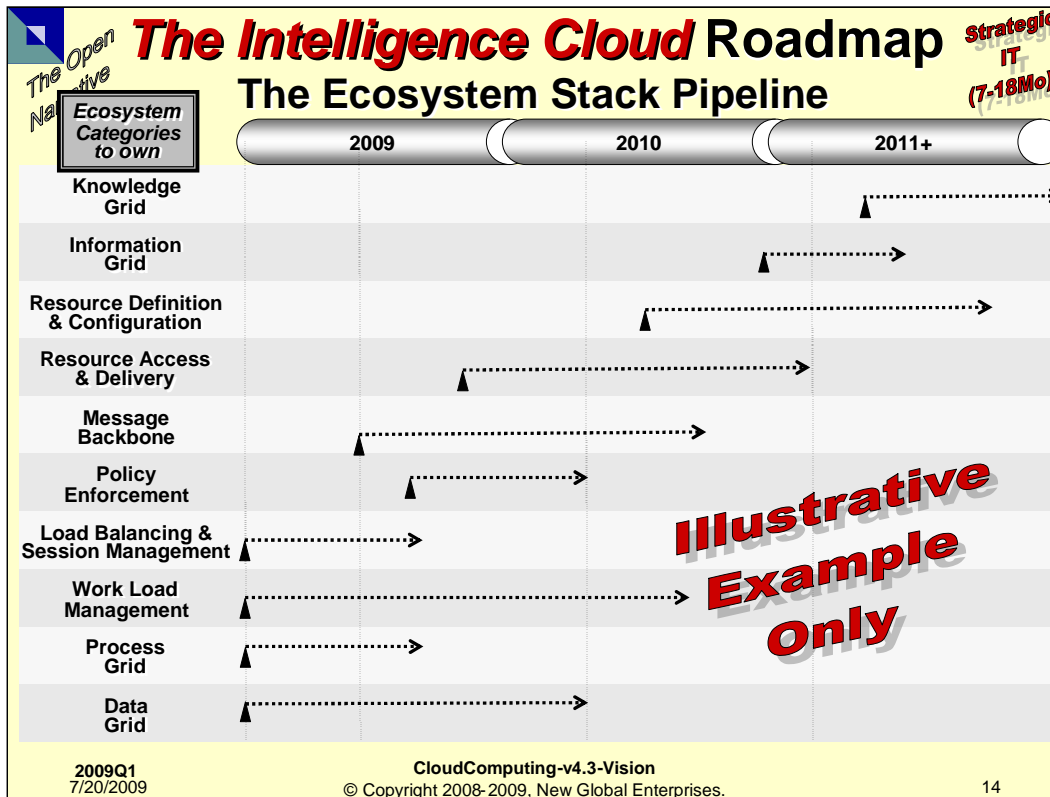Platform is stack&rack downward facing, Environments face up the stack&rack

Consumer == Multi-Tenant, Multi-Landlord

Boundaries among enterprises are flexible

- Provider/Consumer may be inside or outside of an enterprise
- Leads to fluid business networks
- Standards and commodity IT enable these networks

Clouds Hide Complexity
The *Business* and *Technical* Foci

❑ Functions support Business Processes within Business Domains which operate within and across specific Environments

➤ The focus of *Environments* is *fitness for business purposes* which drives the *requisite service level requirements*.

➤ The focus of *Platforms* which provision the Environments is technology stacks and racks which have their *price performance* characteristics for *Capacity, Availability, Scalability, Efficiency and Security* levels.

The Intelligence Cloud Roadmap
The Ecosystem Stack Pipeline

The Open Narrative

Strategic IT (7-18Mo)

Ecosystem Categories to own	2009	2010	2011+
Knowledge Grid			▲---->
Information Grid		▲----->	
Resource Definition & Configuration		▲---------->	
Resource Access & Delivery	▲----------->		
Message Backbone	▲------------>		
Policy Enforcement	▲------->		
Load Balancing & Session Management	▲------>		
Work Load Management	▲----------------->		
Process Grid	▲------>		
Data Grid	▲----------->		

Illustrative Example Only

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Cloud is an investment attitude as much as the technology.

Ecosystem Categories to own:

- Functions & Features
- Line lengths are windows of opportunity

Proposed tasks

1. Determine relevance to company revenue
   - Map current Product Function & Features
   - Overlay current Products Roadmap
   - Grade items into a Heat Map Display: Ecosystem Categories X Company Products & Services
     - Practical
     - Tactical
     - Strategic
2. Identify industry players: current and potential
   ➢ Complementary => Partner or Buy
   ➢ Overlap => Compete
3. Deliverables: Create four initial operational plans:
   ➢ Practical (0-3 mo.)
   ➢ Tactical (4-6 mo.)
   ➢ Strategic (7-18 mo.)
   ➢ Tracking plan for 19++ mo. items

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To Infinity and Beyond!

Buzz Lightyear, *A Toy Story*

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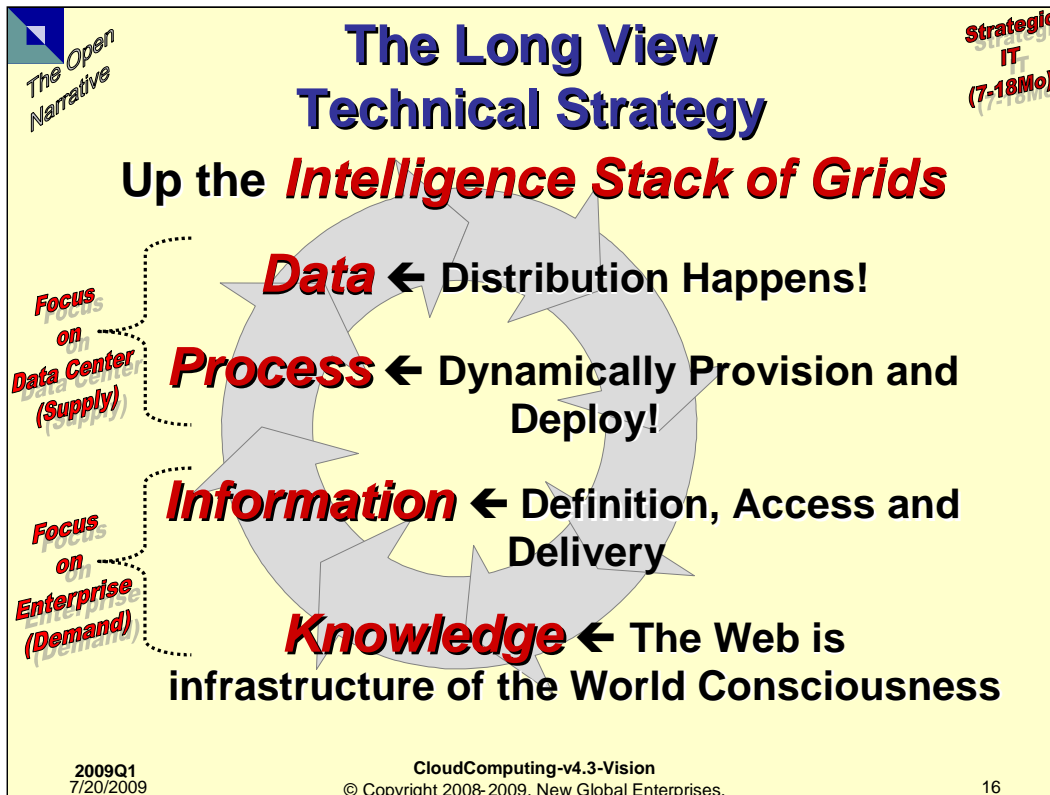
Cloud Computing is the Next Iteration of SOA, Services Delivery and High Performance Computing as a Utility Infrastructure

Push Function Down the Rack
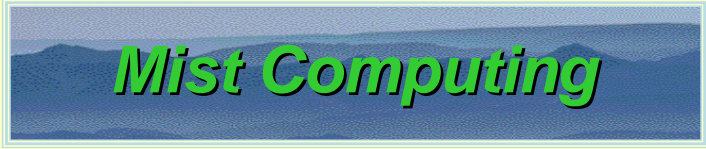
Mist Computing

A
Virtual Intelligence Cloud
surrounding distributed
Physical Computing Locales
with
Fully Operational Grid Infrastructure
that delivers
Spectacular Consumer Experiences

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Mist == Clouds on the Ground, Optimized and Green--the Power Set of (Stacks and Racks)

Environments == Virtual Locales of Resources--vLocale: filters on Powerset(S|R), so now we can utter & record policies and then enable them

*M*ultilevel *i*nput *s*tate *t*ransition engines: Machines of the *Mist*(SM)

Real Computing Locales: rLocale--: deployments of PS(S|R), so now we can utter policies and enforce them

Deploying Services and Provisioning Service Requests with adequate and flexible service levels

FOG: Fully Operational Grids
Fuzzy Logic: Thresholds