



*THE SHORTEST DISTANCE BETWEEN MISSION AND SUCCESS*

# Cloud Computing

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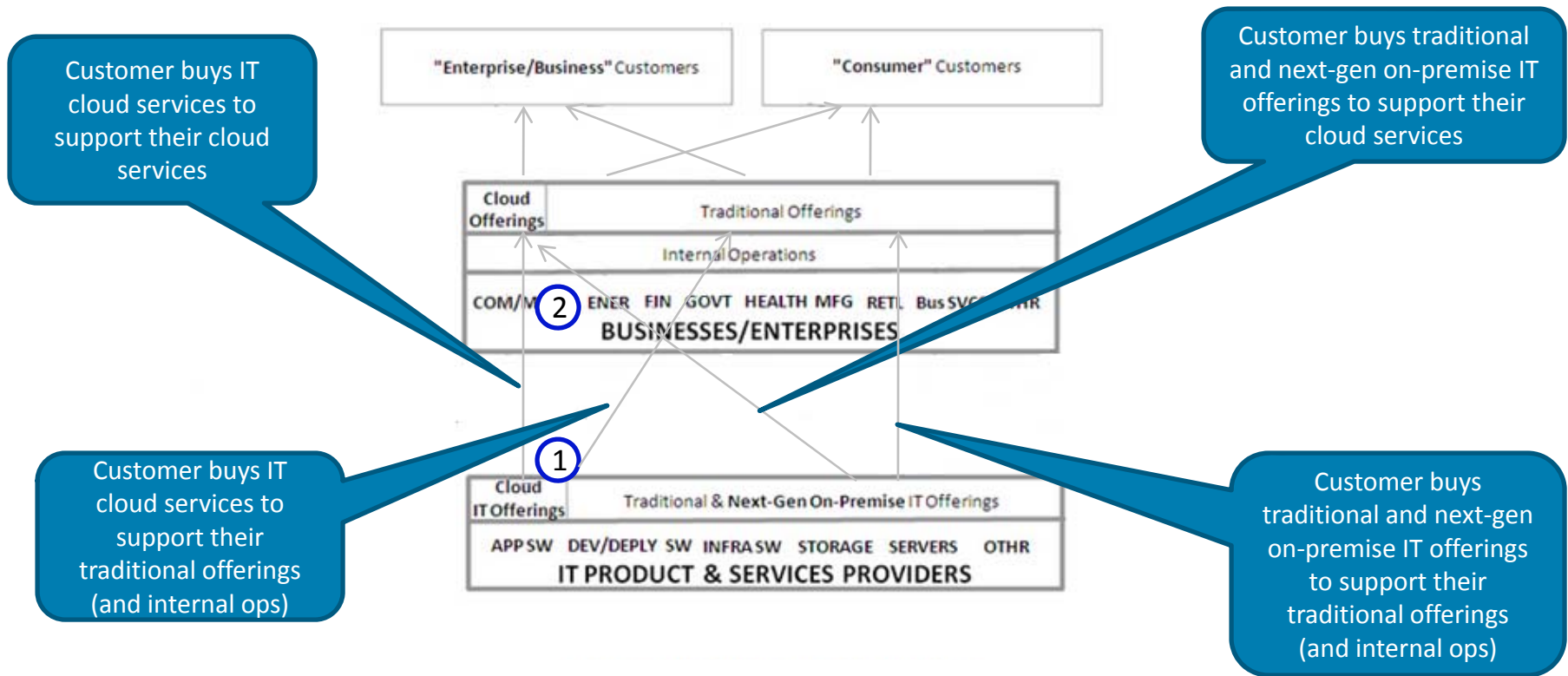


# Some Definitions

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- **Cloud Services** = Consumer and Business products, services and solutions that are delivered and consumed in real-time over the Internet
- **Cloud Computing** = an emerging IT development, deployment and delivery model, *enabling* real-time delivery of products, services and solutions over the Internet (i.e., enabling cloud services)

# The Big Picture: Cloud Delivery and IT Suppliers' Opportunities



Source: IDC, September 2008

NOTE: "Next-gen on-premise" includes two key categories:

1. On-premise IT designed to support customers' cloud service delivery (i.e., Cloud SP systems and software)
2. On-premise IT designed to offer simplicity and cost benefits of cloud (e.g., cloud-enabled Appliances)

# Why Cloud Computing?

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- Merrill Lynch issued a research note: "The Cloud Wars: \$100+ billion at stake" (07 May 2008). The analysts write that by 2011 the volume of cloud computing market opportunity would amount to \$160bn, including \$95bn in business and productivity apps (email, office, CRM, etc.) and \$65bn in online advertising.
- Over the next five years, IDC expects spending on IT cloud services to grow almost threefold, reaching \$42 billion by 2012 and accounting for 9 percent of revenues in five key market segments.
- Gartner predicts that by 2012, 80 percent of Fortune 1000 enterprises will be paying for some cloud computing services, and 30 percent will be paying for cloud computing infrastructure services.

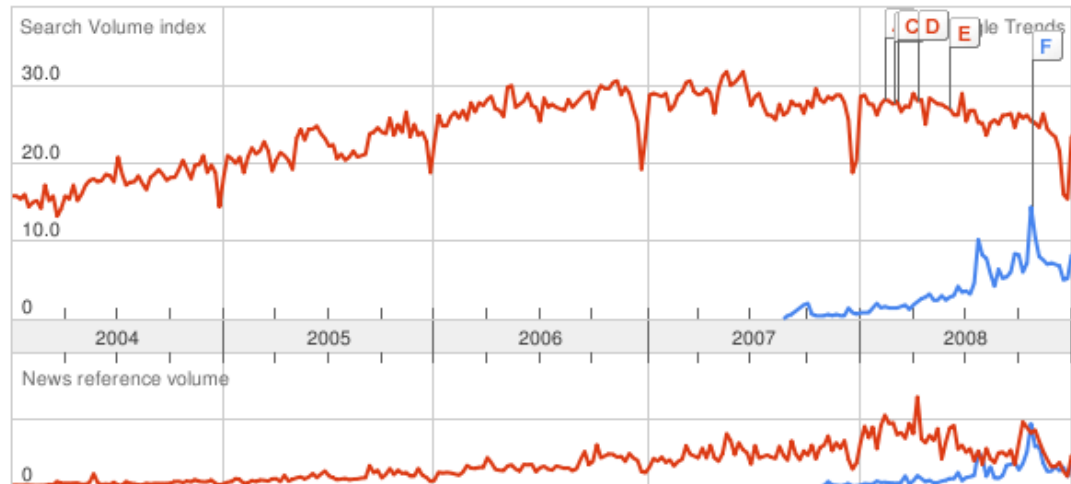
	2008	2009	2010	2011	2012	2013
<b>Cloud Computing Market (\$M)</b>	\$ 11,400	\$ 14,635	\$ 17,870	\$ 21,105	\$ 30,800	\$ 40,000

# Trends: Cloud Computing vs. SOA

Popularity comparison curve for [cloud computing](#) vs [soa](#).

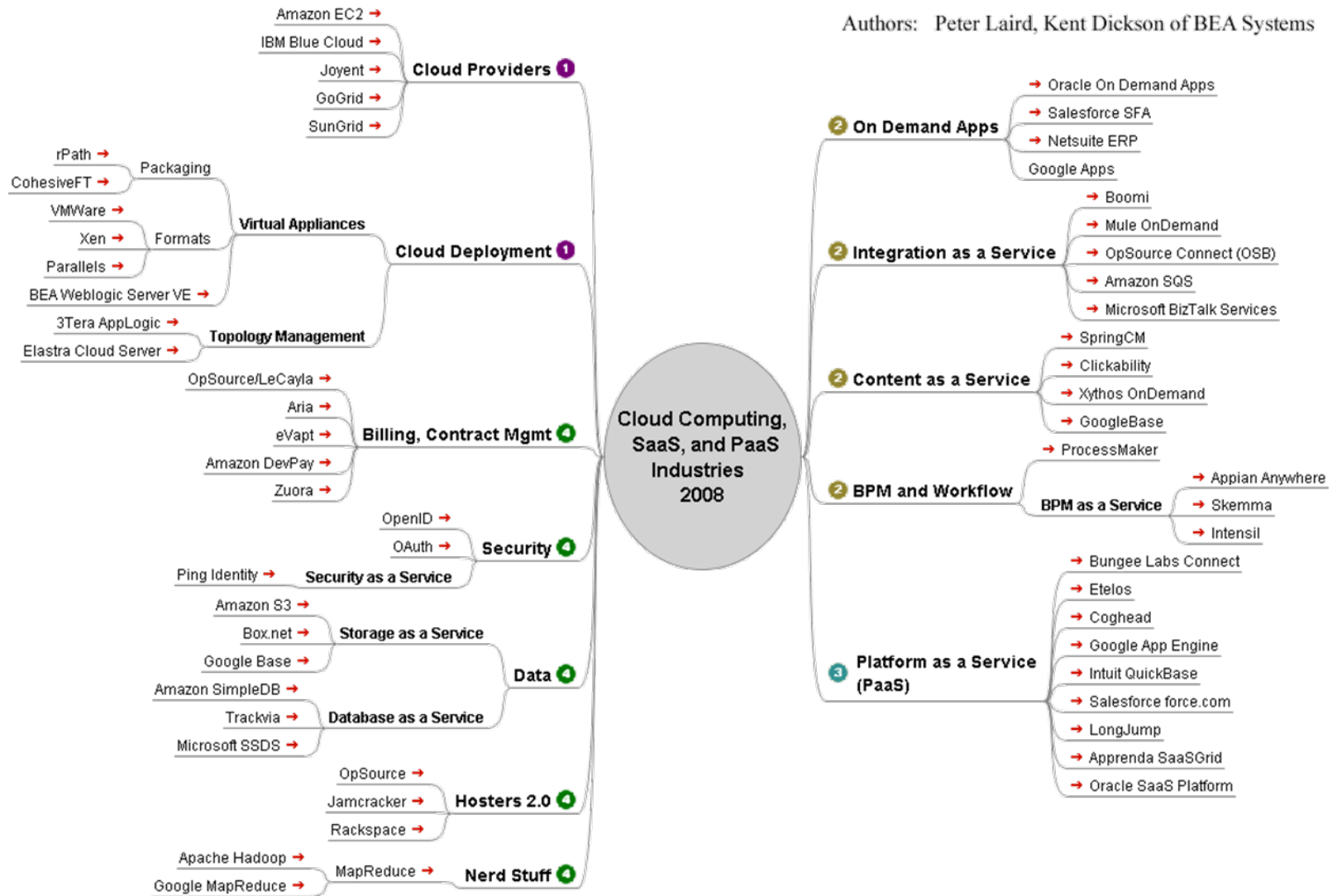


cloud computing 1.00 soa 24.2



# Cloud Computing Market Components

Authors: Peter Laird, Kent Dickson of BEA Systems



1 Cloud Computing | 2 SaaS | 3 PaaS | 4 Core Cloud Services

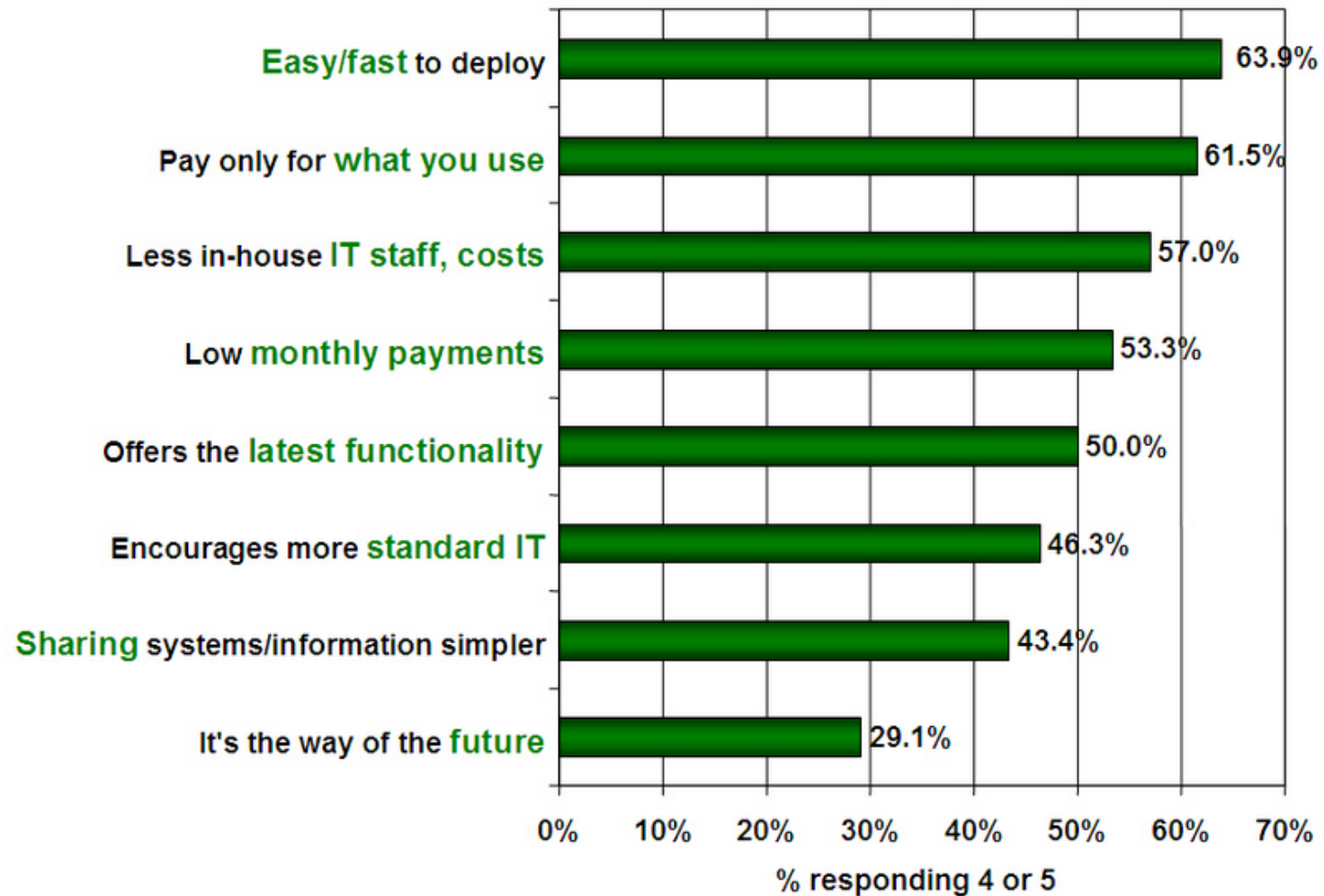


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# Customer Value

Q: Rate the **benefits** commonly ascribed to the 'cloud'/on-demand model  
(1=not important, 5=very important)

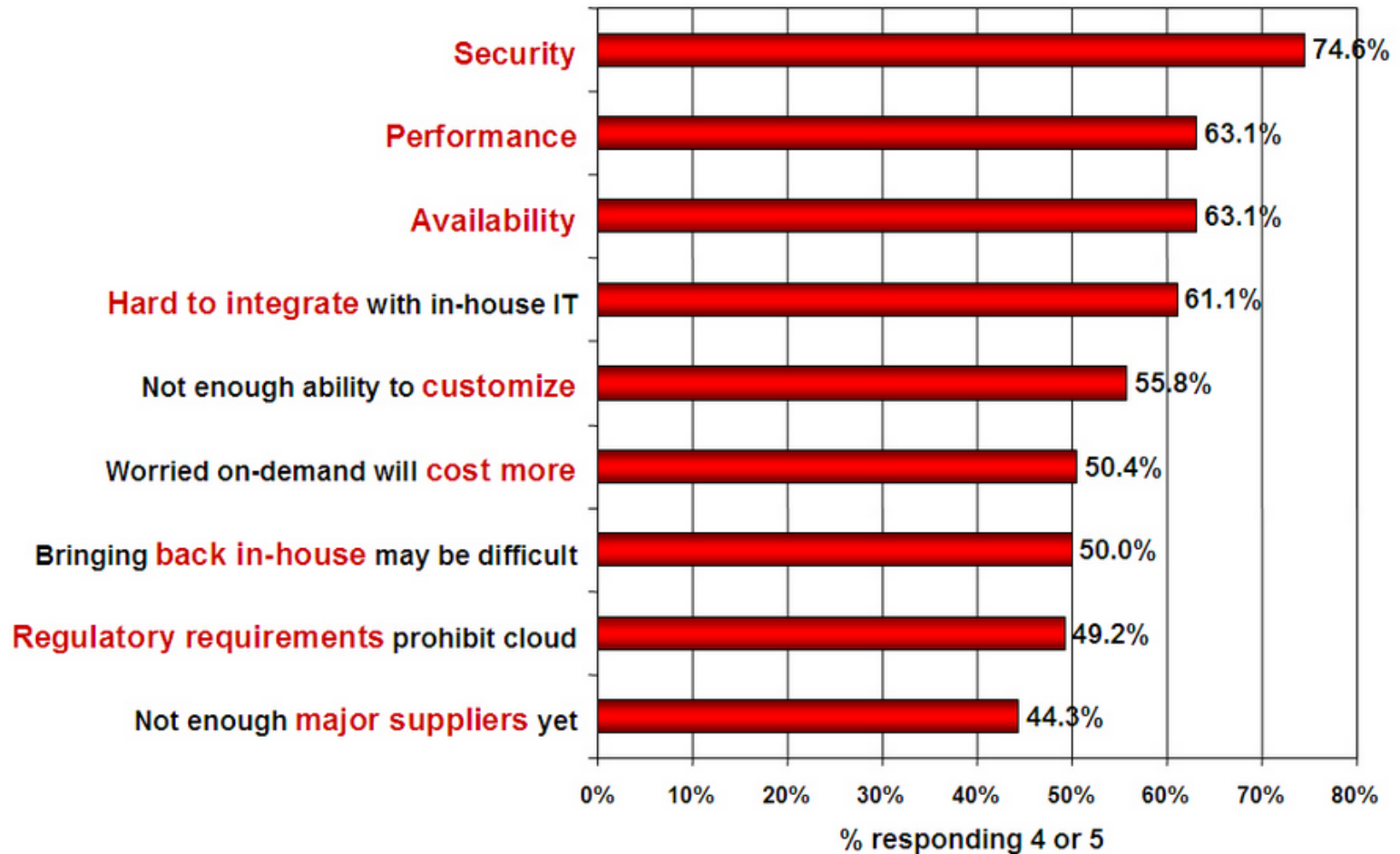


Source: IDC Enterprise Panel, August 2008 n=244



# Cloud Computing Challenge

Q: Rate the **challenges/issues** ascribed to the 'cloud'/on-demand model  
(1=not significant, 5=very significant)



Source: IDC Enterprise Panel, August 2008 n=244



# Gartner 7 Year View

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- **Phase 1: 2007 to 2011** — Pioneers and Trailblazers - A market development phase when technology providers with the strongest market "vision" will garner the most success among early adopters.
- **Phase 2: 2010 to 2013** — Market Consolidation - The market will become overcrowded with a broad range of solutions from large and small vendors, and competitive pressure will drive many weaker players from the market, resulting in acquisition activity. By 2013 this technology will be the preferred, but not the exclusive, choice for the majority of opportunistic and architecturally simple application development efforts among Global 2000 enterprises.
- **Phase 3: 2012 to 2015 and Beyond** — Mainstream Critical Mass and Commoditization - A small number of large providers will dominate the market, providing de facto standards. These vendors will primarily leverage proprietary technologies developed during the previous five years, but they will also widely support intracloud application programming interfaces to establish a technology "fabric," linking cloud-based solutions across vendor platforms.

# Federal Government in Cloud Computing

## DoD DISA RACE

- Garing, CIO of the [Defense Information Systems Agency](#) (DISA), believes cloud computing will be a driving force in the Department of Defense (DoD). In fact, Garing says that although he shares some of the concerns espoused by the IT media (such as the danger of hosting multiple applications on a single platform), he, personally, is more than optimistic, calling cloud computing ‘something we absolutely have to do.’”
- CollabNet, Appistry, Apptis



## DHS FEMA/TSA

- FEMA building cloud computing solution for federal response management
- TSA using CollabNet development environment
- Apptis, Northrop Grumman, Verizon



## DoD JFCOM Valiant Angel

- Dr. James Heath (Senior Science Advisor to DIRNSA) intends to integrate Valiant Angel capability into NSA’s “Cloud Architecture” and subsequent buildout of P23 at Camp Slayer.
- SAIC, LGS



## Intelligence Community

- “Develop a common “cloud” based on a single backbone network and clusters of servers in scalable, distributed centers where data is stored, processed and managed
- NGA using Appistry with Geoeye for imagery processing
- Appistry, L-3



# Obama Tech Team Envisions Federal Cloud

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<http://www.datacenterknowledge.com/archives/2009/01/20/obama-tech-team-envisions-federal-cloud/>

January 20th, 2009 : Rich Miller

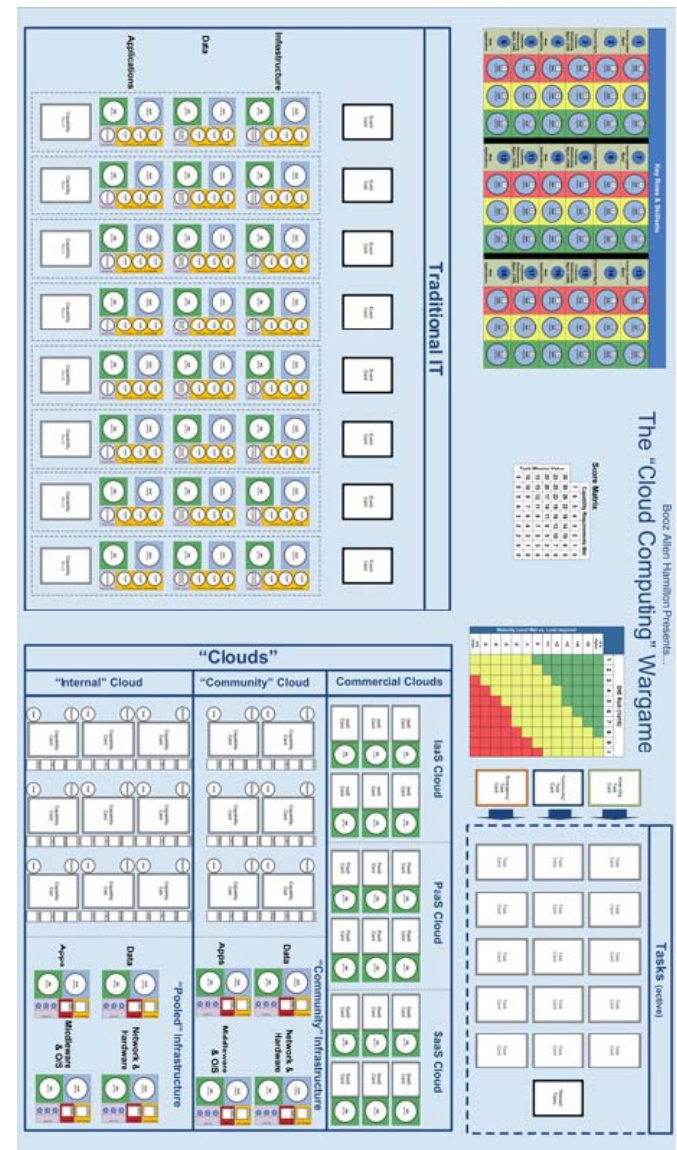
As President Obama was sworn in just after 12 noon, the [WhiteHouse.gov](http://WhiteHouse.gov) web site changed as well, adopting the design and social media features of the Obama team's Change.gov transition site. There's more change on the way, and cloud computing is a key piece of the agenda envisioned by the new administration's Technology, Innovation, and Government Reform (TIGR) team. In a video posted to YouTube Friday, the TIGR team outlined its goals, including a shift to cloud computing. TIGR member Andrew McLaughlin, who heads public policy and government affairs for Google, described the use of cloud computing as "one of the most important transformations the federal government will go through in the next decade," noting the cost advantages of cloud infrastructure. The video also spotlights Vivek Kundra, the CTO of Washington who is rumored to be a candidate to the new federal CTO position. This video runs about 4 minutes, with the discussion of cloud computing starting at the 3 minute mark.



# Cloud Computing Wargame

FOSE 2009 – March 10-12, 2009

Enables the comparison and contrast of the benefits and challenges associated with the implementation of IT capabilities and infrastructure in a single or mix of environments, while illustrating the dynamic relationship among staff, resources and external events that impact the demand for IT to support agency and program missions. More than a “game,” the CCW *does* represent real-life situations facing IT management daily, especially in an environment of rapid technological and mission change, against a backdrop of resource variability.



# Should my agency consider cloud computing?

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- Can this function within the agency's mission be accomplished with the use of standard IT components or are proprietary or customized components necessary?
  - Yes, "Cloud IT" is an option No, "Traditional IT" approach may be required
- In anticipating future functional requirements, do the investments required and value obtained by letting the agency develop technical improvements outweigh the investment savings and time lost in leveraging technical improvement from an industry ecosystem?
  - Yes, "Traditional IT" may be required No, "Cloud IT" is an option
- In view of agency mission objectives, is full control of all IT resources required to complete this function?
  - Yes, "Traditional IT" may be required No, "Cloud IT" is an option
- Is the level of security afforded by generally accepted commercial practices acceptable in accomplishing this specific agency function?
  - Yes, "Cloud IT" is an option No, "Traditional IT" may be required
- In executing this function during surge or peak situations, would capacity limitation severely affect agency mission accomplishment?
  - Yes, "Cloud IT" should be considered as an option No, "Traditional IT" may be desirable
- In view of agency mission objectives, is a dedicated IT infrastructure required to complete this function?
  - Yes, "Traditional IT" may be required No, "Cloud IT" is an option

## Cloud Musings by Kevin L. Jackson

PERSONAL COMMENTS AND INSIGHT ON CLOUD COMPUTING AND ITS USE IN THE PUBLIC SECURITY SUPPORT NET-CENTRIC OPERATIONS.

**Defense Systems**  
 Blog Updated Daily from Conf. Floor Read Coverage from AFCEA LandWarNet  
 DefenseSystems.com

**Network Centric Warfare**  
 One of the original authors of NCW tells what you need to know now.  
 www.Objectivity.com/NCW

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SOA-R

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PAGE DISCUSSION HISTORY NOTIFY ME

Welcome to the SOA-R Interactive Networking Group wiki. This space has been established specifically to discuss the challenges and opportunities surrounding cloud computing in support of national security missions. This is an open forum with the goal of promoting dialog in the network centric operations community on this emerging technology.

[Edit This Page](#)

To manage our discussion, we have organized the wiki into three domains: [Architectural](#), [Operational](#) and [Security](#).

The goal is to provide a central location for the community to discuss and share information as the outline of the SOA-R initiative evolves.

The outline of the SOA-R initiative is as follows:

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Page last modified 00:11, 16 Oct 2008 by Admin

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Federal Cloud Computing Web 2.0 Wiki >

## Federal Cloud Computing Web 2.0 Wiki

### Background

**Cloud computing** is Internet ("Cloud") based development and use of computer technology ("Computing"). The cloud is a metaphor for the Internet (based on how it is depicted in computer network diagrams) and is an abstraction for the complex infrastructure it conceals (1). It is a style of computing where IT-related capabilities are provided "as a service" (2), allowing users to access technology-enabled services from the Internet ("in the cloud") (3) without knowledge of, expertise with, or control over the technology infrastructure that supports them (4). According to the [IEEE Computer Society](#) it "is a paradigm in which information is permanently stored in servers on the Internet and cached temporarily on clients that include desktops, entertainment centers, table computers, notebooks, wall computers, handhelds, etc." (5).

Cloud computing is a general concept that incorporates [software as a service](#), [Web 2.0](#) and other recent, well-known technology trends, where the common theme is reliance on the Internet for satisfying the computing needs of the users. For example, [Google Apps](#) provides common business applications online that are accessed from a [web browser](#), while the [software](#) and [data](#) are stored on the servers.

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http://Cloudcomputing.DataLine.com