

Cloud Computing – A gaze through a foggy crystal ball

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In cooperation with: Syntel, Inc.

A Peak at the Past

- Computing as
 - A means to generate efficiency
 - An enabler of systems and processes
 - A medium for knowledge creation
 - A provider of business intelligence
 - An active player in innovation

The past few decades . . .

- Our physical world
- The idea of sharing
 - The idea of sharing in the virtual world
- The idea of sharing everything
 - Utility computing
 - Expanded notion of the term infrastructure
- Our virtual world transcends physical, national, legal, societal boundaries

Physical vs. Logical

- The sheer beauty of separating what it provides how it provides (i.e., implemented or hosted).
- Increasing separation of the two views.
- From technology to economy
 - The Internet as a communication channel
 - Delivery of service over the Internet as an economy (the consumption of everything from storage to computation to video and beyond)
 - The case of Turbotax
- How far could we go in distancing *what* from *how*?
- Are *what* issues of security different than *how* issues?

Gartner's view

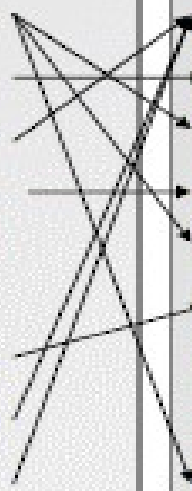
Technologies You Can't Afford to Ignore

Top 10 Strategic Technology Areas for 2009

1. Virtualization
2. Business Intelligence
3. Cloud Computing
4. Green IT
5. Unified Communications
6. Social Software and Social Networking
7. Web-Oriented Architecture ..
8. Enterprise Mashups
9. Specialized Systems
10. Servers — Beyond Blades

Top 10 Strategic Technology Areas for 2010

1. Cloud Computing
2. Advanced Analytics
3. Client Computing
4. IT for Green
5. Reshaping the Data Center
6. Social Computing
7. Security — Activity Monitoring
8. Flash Memory
9. Virtualization for Availability
10. Mobile Applications



■ Modified for 2010

■ New for 2010

■ Dropped for 2010

Attributes of Cloud Computing

- **Service-based** – ready to use services; a business proposition, not a technology implementation
- **Scalable and elastic** – services scale on demand, up or down, and computing resources allow this to happen
- **Shared** – associated with optimization of resource utilization, with a viable user base
- **Metered by use** – rate card based on what, how much, when, etc.
- **Uses network of networks (the Internet)** – clouds can be only up there! Wide spread, common protocols, and basic standards – especially, standards of communication - remain the same.

Adapted from: Gartner Highlights Five Attributes of Cloud Computing

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Clouds shaping destiny: What's in store for us?

- Shifting of resources
- Reallocation in a dramatic way
- Potentially, overall reduction, not an increase
- Better bonding of technology with business propositions
- Preparing the industry (two different markets)
 - Providers of services
 - Consumers of services
- Question: Do I have to move to the clouds?
 - Mike Hurd, CEO of HP
- Trying to see as far out as we can
 - When cloud computing becomes pervasive, only blue clouds will be left for us to see!

Risks

- Risks and opportunities are always bundled.
 - Walk away from the opportunity and you won't have the risk.
 - But the opportunities are also lost.
- However, opportunities almost always get considered first.
 - Managing risks costs money and nobody sees the value. Not seeking the opportunity would mean a direct loss to the bottom line.
- When management wants to leverage something, it will be less concerned about risks.

Luge Track at the Vancouver Winter Olympics – Nodar Kumaritashvili





Perceived Risks of Cloud Computing – Gartner's Seven

- Privileged user access
- Regulatory compliance
- Data location
- Data segregation
- Recovery
- Investigative support
- Long-term viability

Risk Landscape of Clouds

- Authentication
- Data security and privacy
- Interfacing with internal systems
- System availability
- Business continuity
- Ownership of content and other legal requirements