



SSE-Panel@Dagstuhl

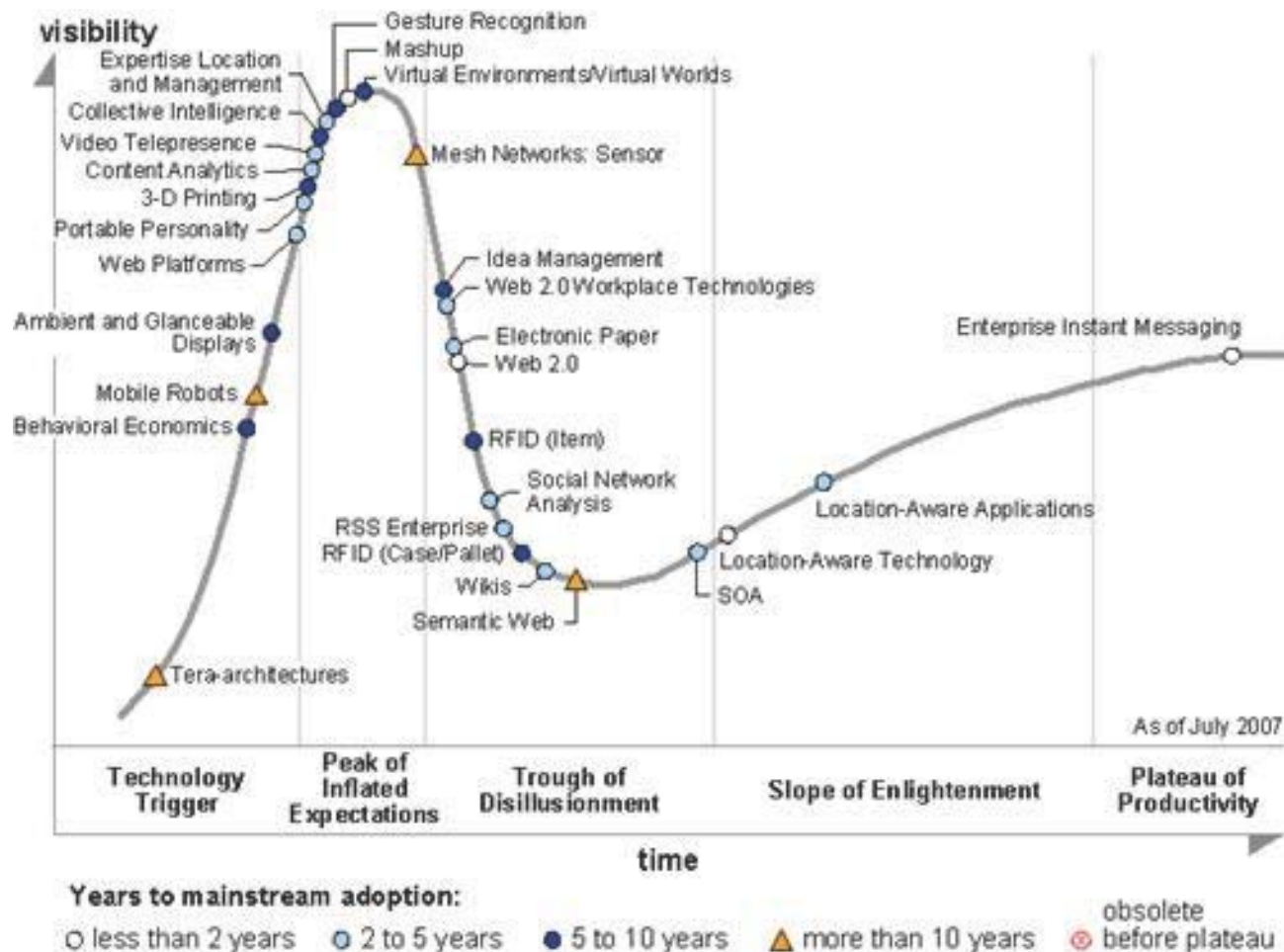
Cloud (SaaS) ...

Breaks existing software engineering
methods, tools and practices etc.

Bernhard Mitschang

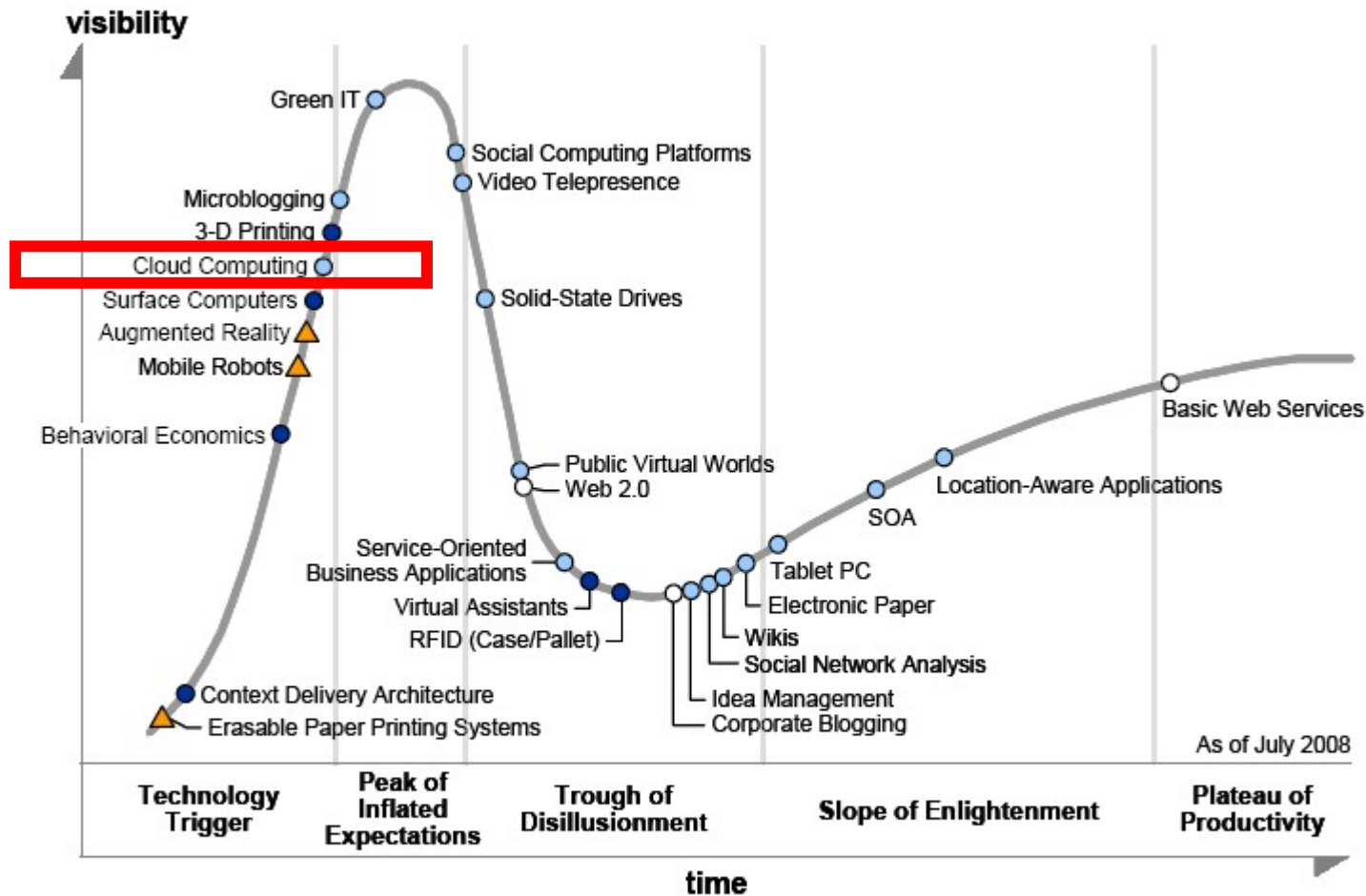
Gartner 2007 Hype Curve: No Cloud, No Grid

- **‘Merill Lynch’**: Within the next 5 years, the annual global market for cloud computing will surge to \$95 billion. 12% of the worldwide software market will go to the cloud in that period.



Gartner 2008 Hype Cycle: Cloud, No Grid

Figure 1. Hype Cycle for Emerging Technologies, 2008



Years to mainstream adoption:

○ less than 2 years

● 2 to 5 years

● 5 to 10 years

▲ more than 10 years

⊗ obsolete before plateau

Source: Gartner (July 2008)

Defn & Spectrum of Clouds

- **Gartner:** “Cloud Computing is a style of computing where massive scalable IT-enabled capabilities are delivered as a service to external customers using Internet technologies.”
- ... **others ..:** Cloud Computing isn't new. We have hosted apps for years. But now also custom-developed apps can be hosted in the cloud.

Cloud Applications	Cloud Platforms	Cloud Infrastructure	Cloud Distribution	Cloud Hardware and Software
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Salesforce.com

Google AppEngine

Amazon Web Services

Akamai, LimeLight

HP, IBM, EMC,
Dell, VMWare

A Cloud of Cloud Companies

- Akamai
- Areti Internet
- Enki
- Fortress ITX
- Joyent
- Layered Technologies
- Rackspace
- Terremark
- XCalibre
- Amazon
- Google
- Salesforce
- Microsoft
- Sun
- IBM
- Oracle
- EMC

Spectrum of Clouds: Frank's View

Hardware

- CPU
- Network
- ...

Storage

- Raw Disk
- File
- BLOB
- Table
- Queue
- ...

Machine

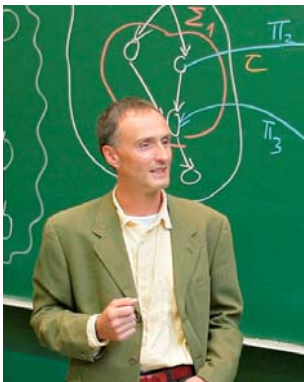
- Images
- Appliances
- ...

Applications

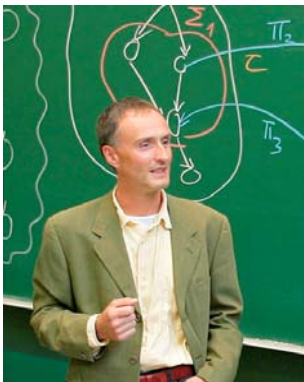
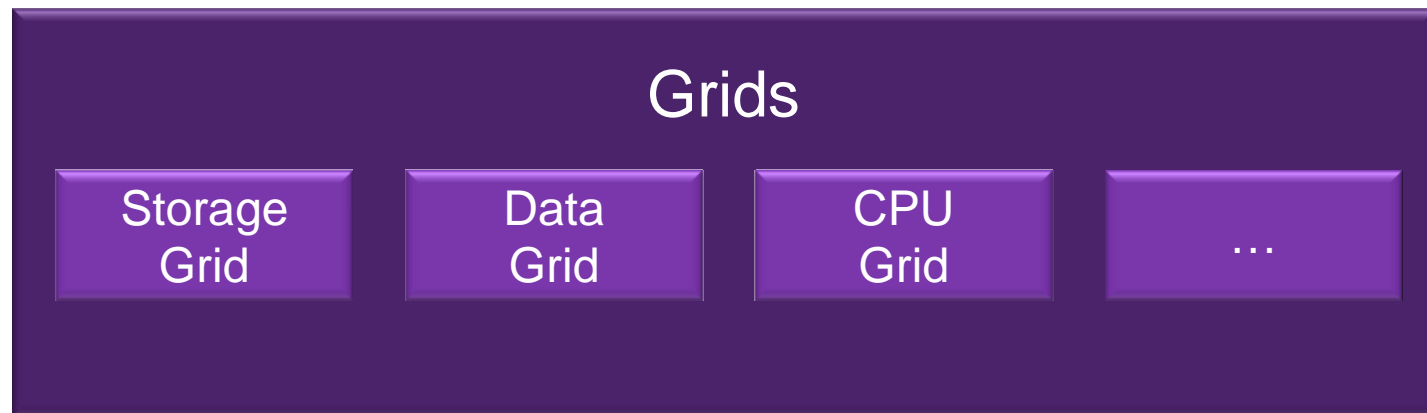
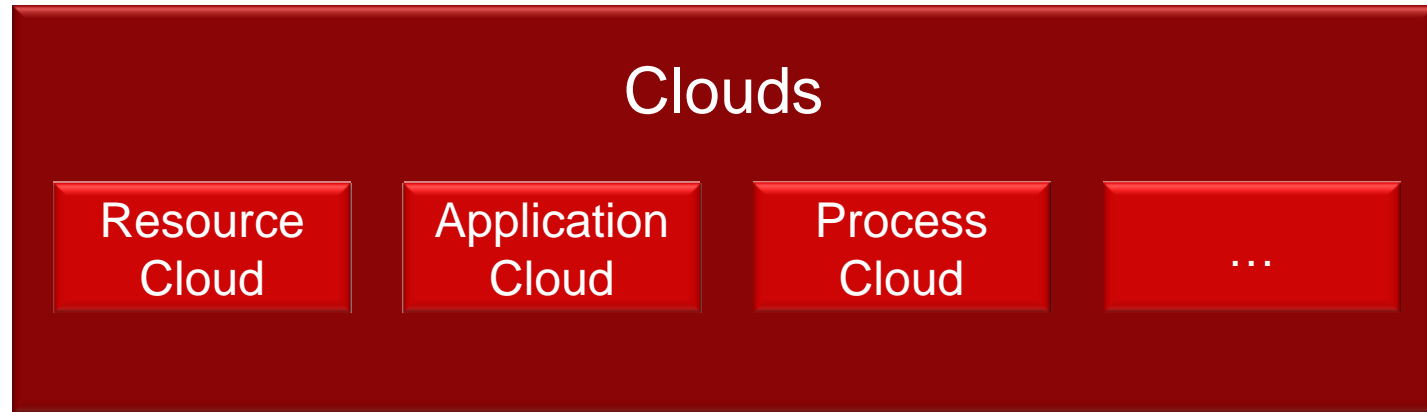
- Hosted RYO
- SaaS
- ...

(Individual) Services

- Best-of-Breed
- Compositions
- ...



Cloud and Grid Layering: Frank's View



Panelists

- Sanjiva Weerawarana – Services Platform (Ind.)
- Stefan Tai – Service-oriented Comp. (Acad.)
- Michael Behrendt – System Management (Ind.)
- Gregor Engels – Software Engineering (Acad.)

Organization of the next 40 Minutes

Instead of ...

- 1st Phase: every panelist
 - gives his short answers to the questions
 - urgent question are taken
 - 4 times 4 minutes altogether
- 2nd Phase: open to audience
 - (almost) any questions are taken

We, i.e., the penalists and the audience, do one question after the other ...

... Questions

1. Who needs Cloud technology/computing?
 2. Is CC necessary for Service-oriented Computing?
 3. Is there CC without Service-oriented Computing?
 4. Does CC break SE method., tooling and practices?
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- What is Cloud technology/computing?
 - ... Difference to Grid?