

## Cloud Computing: a gift from the skies

A photograph of a statue of a person reaching their arms up towards a cloudy sky. The statue is dark and appears to be made of metal or stone. The sky is filled with white clouds against a blue background.

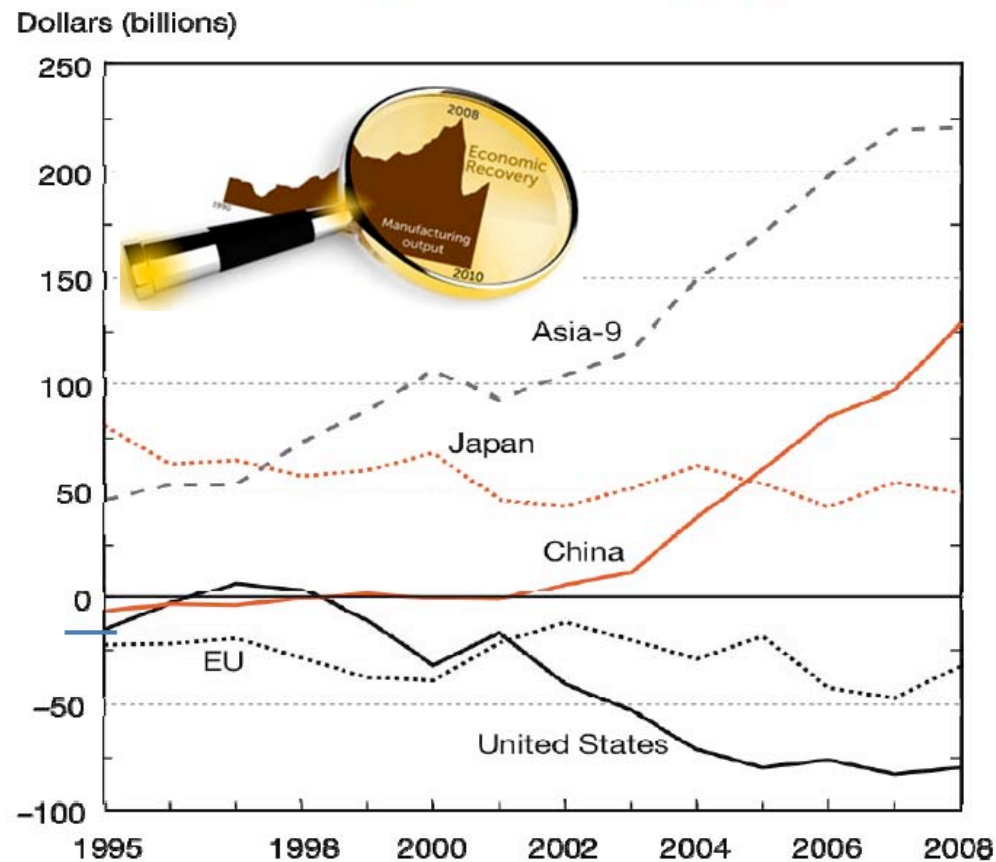
# How Cloud Computing can help recovering from the recession

*Dr. ir. Anwar Osseyran*

*SARA-BiG Grid High Performance Cloud Computing Day  
Amsterdam, October 4 2011*

# Trade Deficit in High-tech?

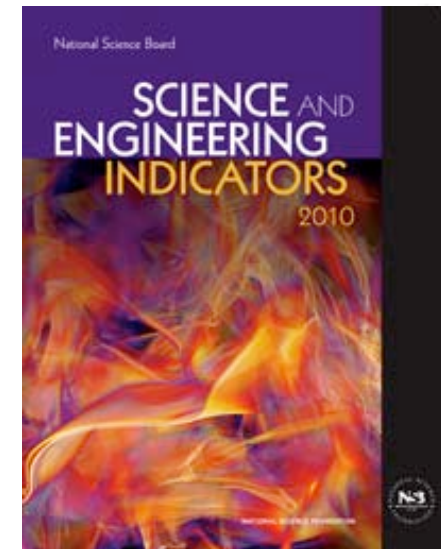
## Trade balance in high-technology goods 1995–2008



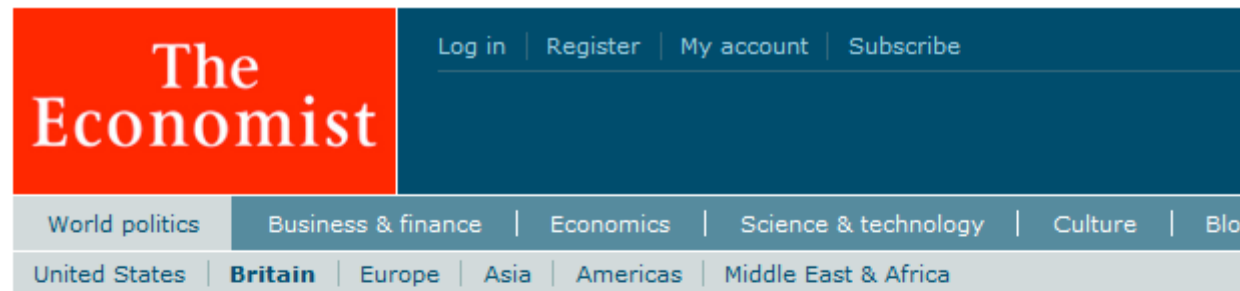
NOTES: Asia-9 includes India, Indonesia, Malaysia, Philippines, South Korea, Singapore, Taiwan, Thailand, and Vietnam. China includes Hong Kong. EU excludes Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, and Slovenia.

Source: NSF Science and Engineering Indicators 2010

SARA-BigGrid High Performance Cloud Computing Day – October 4, 2011



# Manufacturing Driving Recovery in the UK



## The state of manufacturing

### Captained by industry

#### Manufacturing is once again driving Britain's recovery from recession

Sep 9th 2010 | from the print edition

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DURING the long boom before the banking crisis, manufacturing fell out of political favour. But as the fragility of growth powered by finance was exposed, politicians began to extol the neglected virtues of industry. These days a revival in the fortunes of manufacturers is widely regarded as essential for a sustained export-led recovery. "Real engineering, not financial engineering," runs a popular slogan.

Unfortunately, this sudden conversion to the merits of an industrial economy was mistimed. Along with construction, manufacturing was hit the hardest by the recession. Output dropped by 14.5% between early 2008 and the third quarter of 2009, whereas GDP fell by 6.4%. The slump in factory production reflected the sharp downturn in world trade: manufacturing accounts for about half of all exports.



# Can Manufacturing Fuel a U.S. Recovery?

The New York Times

## The Opinion Pages

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION ARTS

OP-ED CONTRIBUTOR

### Manufacturing a Recovery

By SUSAN HOCKFIELD  
Published: August 29, 2011

Cambridge, Mass.

**Related in Opinion**

Room For Debate: Can Manufacturing Fuel a U.S. Recovery?

THE United States became the world's largest economy because we invented products and then made them with new processes. With design and fabrication side by side, insights from the factory floor flowed back to the drawing board. Today, our most important task is to restart this

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Rebuilding our manufacturing capacity requires the demolition of the idea that the United States can thrive on its service sector alone. We need to create at least 20 million jobs in the next decade to offset the effects of the recession and to address our \$500 billion trade deficit in manufactured goods. These problems are related, given that the service sector accounts for only 20 percent of world trade.

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## Obama to announce \$500M manufacturing investment initiative

By Vicki Needham - 06/24/11 05:15 AM ET

President Obama on Friday will announce the launch of the Advanced Manufacturing Partnership (AMP), an initiative that would provide more than \$500 million to encourage investments in promising technologies.

It is the administration's second initiative in less than a month intended to boost U.S. manufacturing.

COMMENT

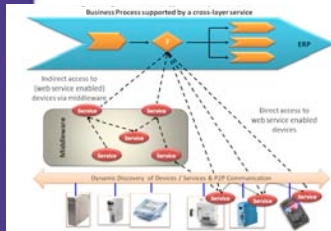
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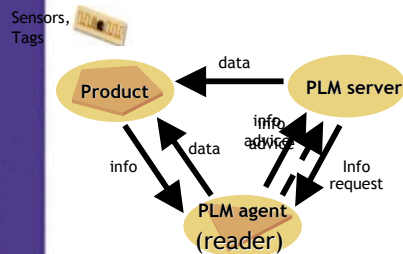


# Vision: Build Factories of the Future enabled by ICT



**Smart Factories:**  
More automation, better control & optimisation of factory processes

- Less waste
- Less energy use
- Faster time-to-market
- Better quality



**Virtual Factories:**  
To manage supply chains; to create value by integrating products & services

- High-value products
- Keep jobs in Europe
- Process transparency
- IPR security
- Lower CO<sub>2</sub> footprint



**Digital Factories:**  
To “see” the product before it is produced

- Reduce design errors
- Better & efficient products
- Less waste + rework
- Faster time-to-market

EU Factory of the Future Project (2011)

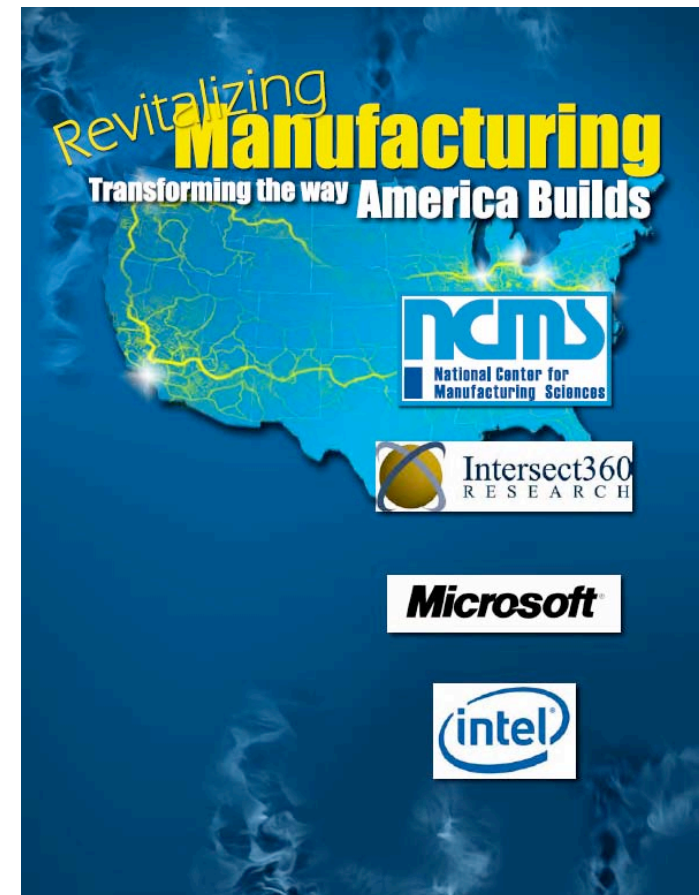


# ICT for creating jobs and revitalizing U.S. manufacturing

## *The Opportunity*

- *“Nearly 300,000 small and medium sized manufacturers exist in the U.S.*
- *Modeling and simulation capabilities (using HPC) are a key American asset.*
- *Advanced computational methods provide a competitive advantage for SMMs.”*

*NCMS September 2010*

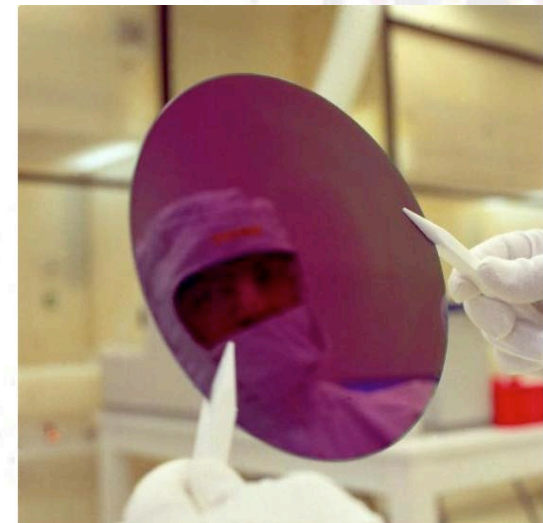


**75% of GDP and 70% of employment.**

**Around 2.5 million manufacturing SMEs in Europe representing 99% of European manufacturing businesses.**

**EU competitiveness is significantly influenced by the performance of its manufacturing SMEs.**

***Rapid Modeling and simulation are key for competitiveness and time-to-market.***



**The Future SME Project (January 2011)**



# And in NL... Will Fokker 100 go into the Clouds?

## Het faillissement van Fokker Aircraft

### Inleiding

Op 15 maart 1996 ging Fokker aircraft failliet. Bijna 5000 hoog-gekwalificeerde medewerkers raakten hun baan kwijt. Voor Nederland was dit een ramp van "zelfscheppende vliegtuigbouw", voor miljarden in 75 jaar verdwijnen. De Nederlandse bevolking heeft dit, volgens nieuws. Meestal negatief daar zorgde de pers wel voor. Fokker werd een bodemloze put genoemd waar al je branden. Dat was wel zo'n beetje het beeld van 1995 en 1996.

Hoe heeft dat eigenlijk zo ver kunnen komen? Welke factoren? Eigenlijk zijn naar mijn idee geen afdoende antwoorden. Voor de vele van de 5000 ex-medewerkers, die tot het einde van de eeuw ook voor mij met meer dan 40 dienstjaren. Ik ben gestopt met Fokker als Senior constructeur structures/composites. Nu na meer dan 10 jaar heb ik voor mijzelf een beeld van het faillissement en wat er aan vooraf ging. Het boek van mijn ex-collega Cok Martijn "Vleugellam" beschrijft gebeurtenissen. Met veel informatie die ik uit die tijd zelf heb om mijn zienswijze als ex-medewerker op te schrijven.

### Waarom leed Fokker zulke zware verliezen?



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### Economie

## 'Nieuwe Fokker 100 over 2 jaar klaar'

Laatste update: 31 augustus 2011 21:23

HAARLEM - Een prototype van de nieuwe Fokker 100 is over 2 jaar klaar. Het vliegtuig zal een gemoderniseerde versie van de huidige Fokker 100 zijn.



Foto: NU.nl/Robin Hogervorst

Dit zei directeur Maarten van Eeghen van het bedrijf Next Generation Aircrafts (NGA), het voormalige Rekkof, woensdag in Haarlem bij de viering van het 100-jarig jubileum van de eerste Fokker.

Rekkof nam de rechten voor de productie van Fokker-vliegtuigen in 1996 over, toen de vliegtuigproducent failliet ging. Recentelijk kreeg Rekkof nog 20 miljoen euro subsidie van het ministerie van Economische Zaken voor de verdere ontwikkeling van een nieuw toestel.

# Potential Use of the Clouds Essential for SME's



Source: Cloud Computing Survey 2009, World Economic Forum and Accenture



# 9 Top sectors in NL Sector Cloud Opportunity



## Leden topteam



Amandus Lundqvist



Marc Hendrikse



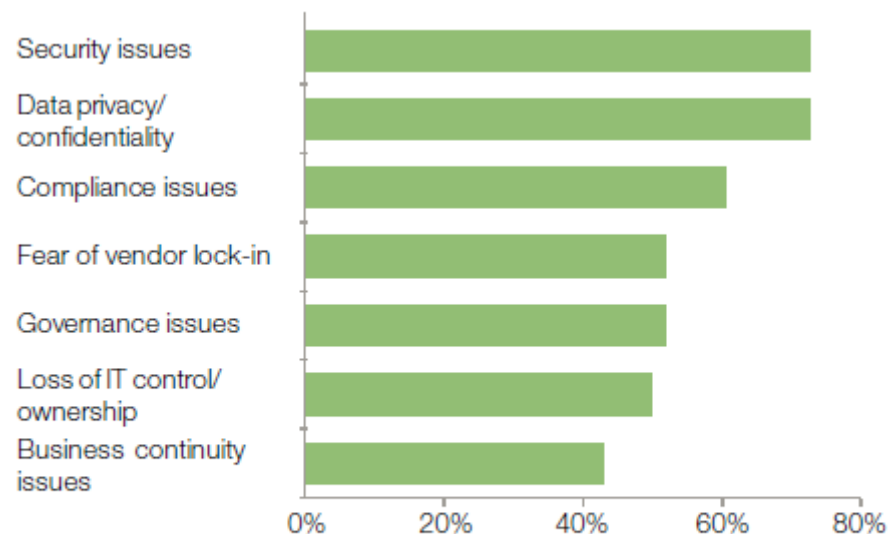
Dave Blank



Willem Zwolve



# Major concerns of cloud services?



Source: Cloud Computing Survey 2009, World Economic Forum and Accenture

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## BEYOND BINARY

by Ina Fried

OCTOBER 10, 2009 3:26 PM PDT

### Sidekick outage casts cloud over Microsoft

by Ina Fried

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### Gmail data loss bug causes complete data loss, calls for tape backups

By Chris Alexander, published on 02 Mar 2011

Comments (0) PDF 1 retweet SHARE


Google has come clean with a [blog post](#) explaining in a little detail how their Gmail cloud-based e-mail service managed to remove all of the e-mails of about 0.02% of their users yesterday.

The problem arised not from an issue with Gmail itself, but in a software update to the underlying storage technology. Of course Google's infrastructure is massively distributed, and their storage infrastructure is separated from the main Gmail application. It was when user's data started disappearing that they realised the storage layer's update was causing issues, and they rolled back the release.

Unfortunately, due to the bug being in the storage system rather than Gmail itself, the deletes affected multiple copies of the data in different datacenters. This means that Google engineers are still working to restore some lost e-mails from offline tape backups.

This somewhat goes to underscore the problems that may be raised by entrusting all a user's data in the cloud on a single service. Just yesterday, Microsoft made an unconnected announcement that they are [upping the amount of compute capacity](#) you get when you sign up for a free [Azure](#) trial, in an effort to get more developers building on the cloud.

© Randy Glasbergen  
www.glasbergen.com



"Cloud computing is cool technology, but every time it rains I lose my data!"

buzzingup.com

# Privacy & Fraude



inschrijven | wachtwoord vergeten?

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## Ook Google aangeklaagd om locatiegegevens

### Risico op privacyschending

29 april 2011 | Pieterjan Van Leemputten



Na Apple wordt ook Google aangeklaagd voor het volgen van gebruikers, in dit geval met Android. Twee vrouwen eisen 50 miljoen dollar.

De klacht is ingediend in de Amerikaanse staat Michigan. De vrouwen eisen dat Google geen telefoons meer verkoopt met Androidsoftware die de locatie van een gebruiker kan achterhalen.

Eerder heeft Google toegegeven dat bepaalde locatiegegevens op het toestel worden bewaard bij wie de gps-diensten gebruikt.



FRONTPAGE ARCHIEVEN PRICEWATCH

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## Sony: vermoedelijk 10 miljoen creditcardaccounts buitgemaakt

Door Dimitri Reijerman, maandag 2 mei 2011 11:21, views: 26.512

Sony heeft bekendgemaakt dat het aantal buitgemaakte creditcardnummers bij de

Nieuws 1/ Reactie



Di 24 mei 2011. Het laatste nieuws het eerst op nu.nl

Tech / Internet

## Weer privacyschending bij Facebook

Uitgegeven: 11 mei 2011 09:00  
Laatst gewijzigd: 11 mei 2011 10:20

AMSTERDAM – Derde partijen, in het bijzonder adverteerders, krijgen nog steeds onbedoeld toegang tot de persoonlijke informatie van Facebookleden via Facebookapplicaties.



Dat schrijft Symantec in een [blog](#) op basis van onderzoek. Facebook heeft het lek bevestigd en het probleem inmiddels opgelost.

Het lek ontstond waarschijnlijk al jaren geleden en bestaat uit het feit dat derden via Facebook Apps toegang krijgen tot bepaalde informatie. Zo kon het profiel, de foto's en de chat van leden bekeken worden. Ook kregen partijen toegang tot het plaatsen van berichten.

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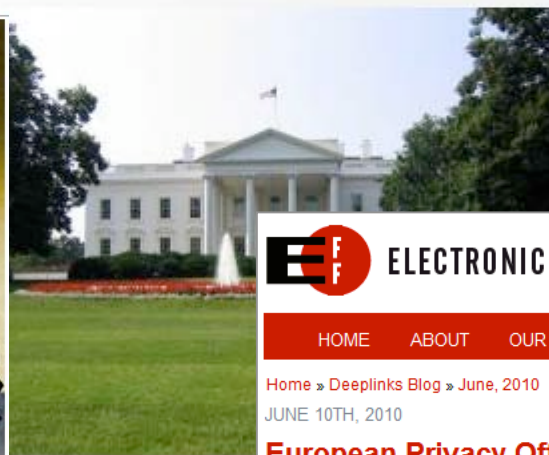
TECHRIGHTS

12.13.10 |

Cablegate Reveals Government Requesting Access to Microsoft Data, Kill Switches

Posted in Microsoft, Security at 5:32 am by Dr. Roy Schestowitz

# Legislation



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JUNE 10TH, 2010

European Privacy Officials: Google, Yahoo, and Microsoft Are Still Breaking European Privacy Law

Commentary by Katitza Rodriguez

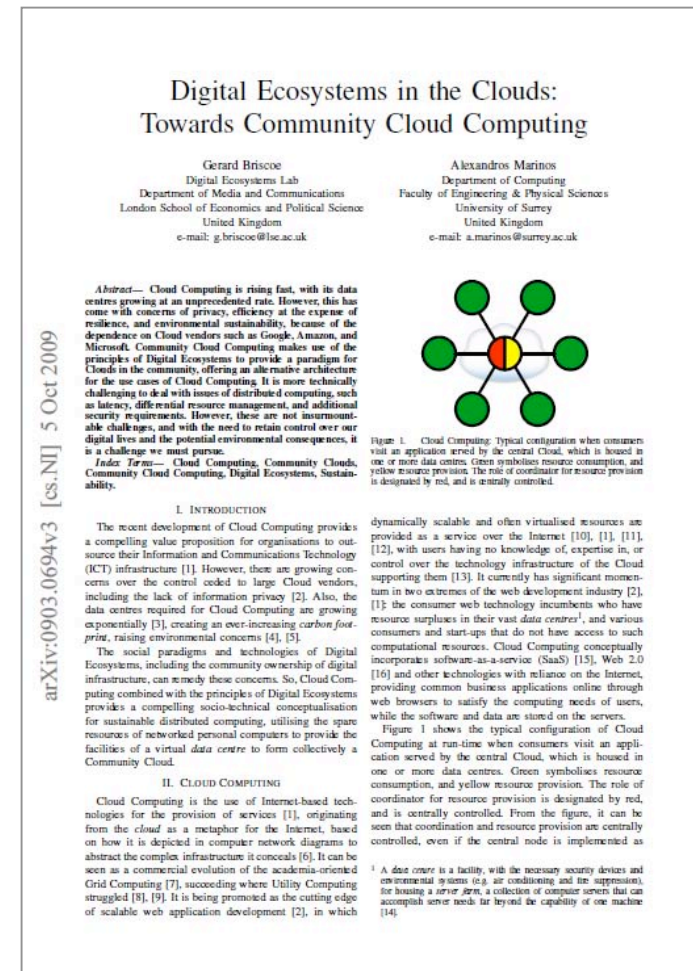
At a time when users regularly turn to search engines to find information on the Internet, [search privacy](#) is of paramount importance. The search terms you give to search engines can be used to compose a telling portrait of your interests and concerns, a fact that has led privacy advocates to call for greater protection for individual users.

That's why it's great news that European privacy officials from the [Article 29 Data Protection Working Party](#) (WP29), which is an influential advisory body to the European Commission, have recently taken decisive action to push for stronger search engine privacy.

Recently, WP29 told the major search engines [Google](#), [Microsoft](#) and [Yahoo](#) that their methods of making users' search data anonymous still do not comply with the [European Union's Data Protection Directive](#), a legislative mandate requiring governments and businesses to protect



- There is a need for 'trusted' cloud services within the sector Education
- Institutes share HPC capacity within own sector cloud according to an open pricing model.
- Deployment of existing overcapacity within own institute delivers environmental benefit and better TCO
- Together towards EDU Green Clouds





# SARA-BigGrid HPC Cloud offering



*For researcher, scientist, and developer needs for speed and flexibility*

- **Based on an HPC platform**

- Infrastructure based on High Performance Compute, Storage and Networking
- No over-provisioning of resources

- **Self Service as a guiding principle**

- IAAS: user access to Virtual HPC Clusters
- Network, Storage and Compute under control of the user.
- Security, as safe as the user needs it
- Flexibility to customize to your own needs

- **Support as you have come to expect it**

- HPC Cloud Support team to help you with installation configuration and best practices
- Collaboration portal to share machine Images and user experiences





# HPC cloud offering



**High Performance Platform**



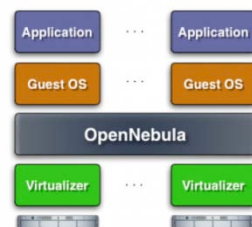
**Virtualized Everything**



**Software, Services Support**



**HPC Cloud Offering**



**Fast CPU,  
High Memory,  
Large Storage and  
High Bandwidth**

**Powerful**

**Virtual Private  
Clusters and  
Networking**

**Flexible**

**Resource  
Deployment  
portal,  
Collaboration  
Portal**

**Versatile**

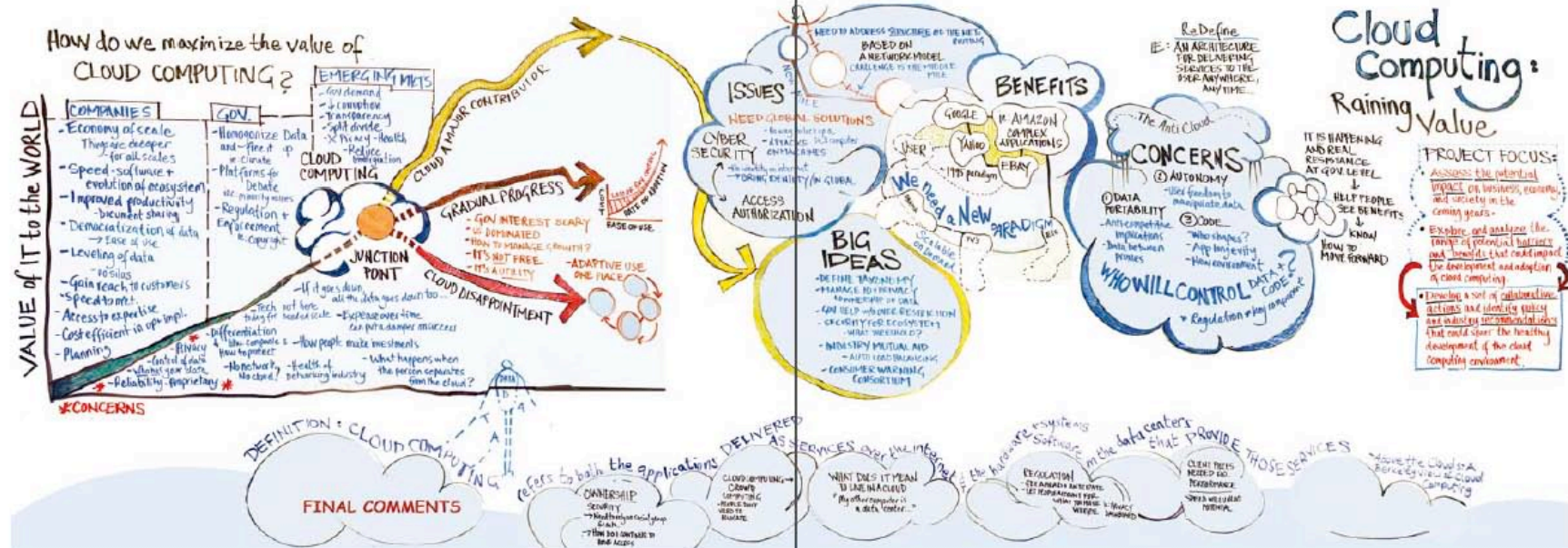
**User in  
control**

**HPC Cloud**



A large photograph of a desert landscape under a dramatic sky. The sky is filled with large, dark, billowing clouds, with bright sunlight breaking through in several places, creating rays of light. The ground is dry and sandy with sparse desert vegetation. In the distance, there are low mountains and some utility poles.

**Cloud is a Promise...  
Rain is Fulfillment !**



Source: Cloud Computing session scribing by the WorkSpace, World Economic Forum Annual Meeting, 2010, Davos, Switzerland





# HPC Cloud *Calligo*

