Stepping into the Cloud

Progress and Lessons

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MS / SURF Visit
25 March 2011

http://www.bripblap.com/uploads/cloudbridge.jpg

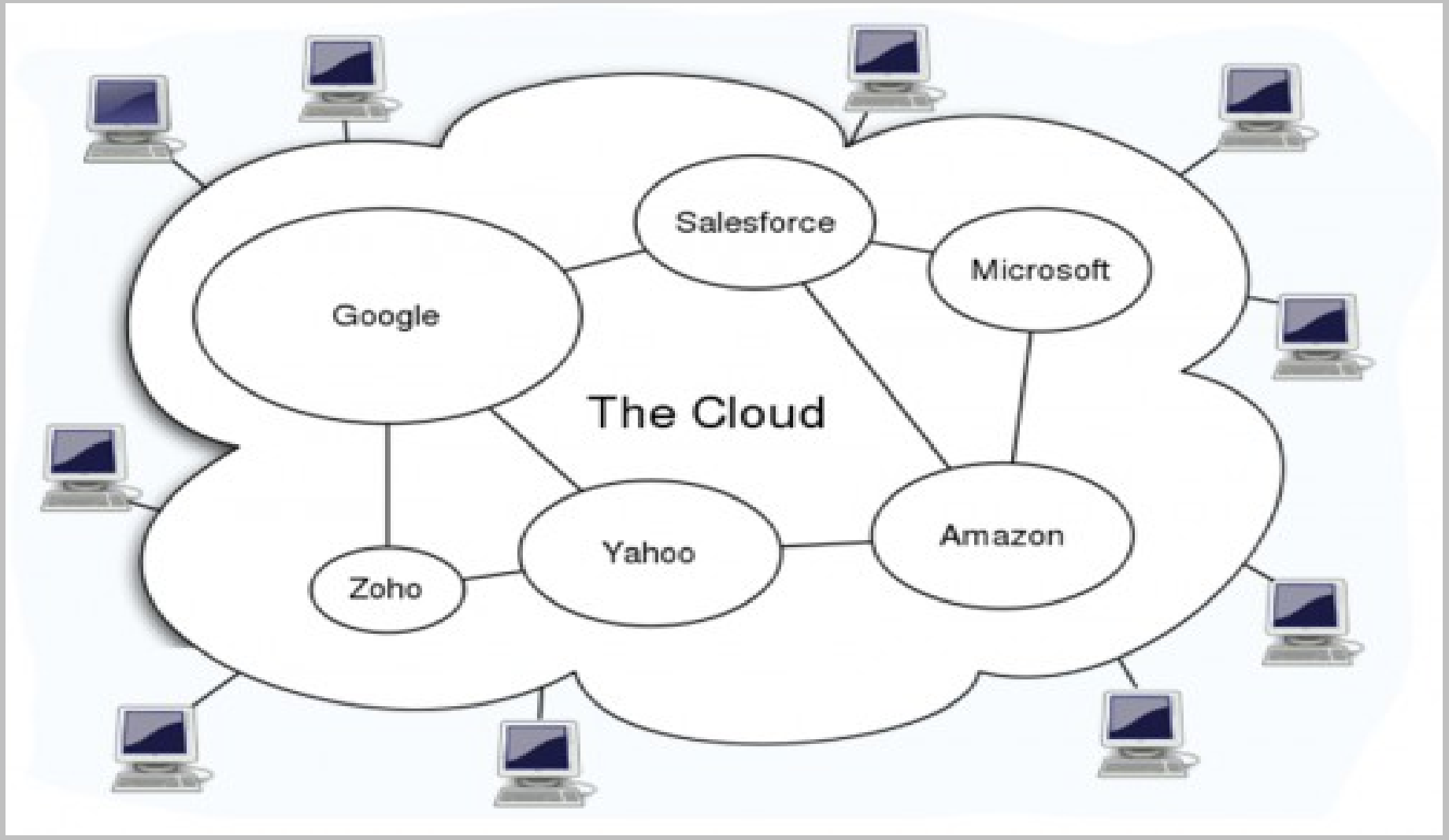
Agenda

- Background
- UW Strategy
- Progress
- Lessons

http://blog.host1plus.com/wp-content/uploads/2009/08/Cloud-computing013-300x300.jpg

What's Inside that Cloud?

the Internet + Servers



From Wikipedia article on Cloud Computing

Cloud Computing = IT stuff running in someone else's data center

Kinds of Cloud Services

- Infrastructure as a Service e.g. Amazon EC2, S3
- Platform as a Service e.g. Google AppEngine
- Software as a Service (SaaS) e.g. Hotmail 1994

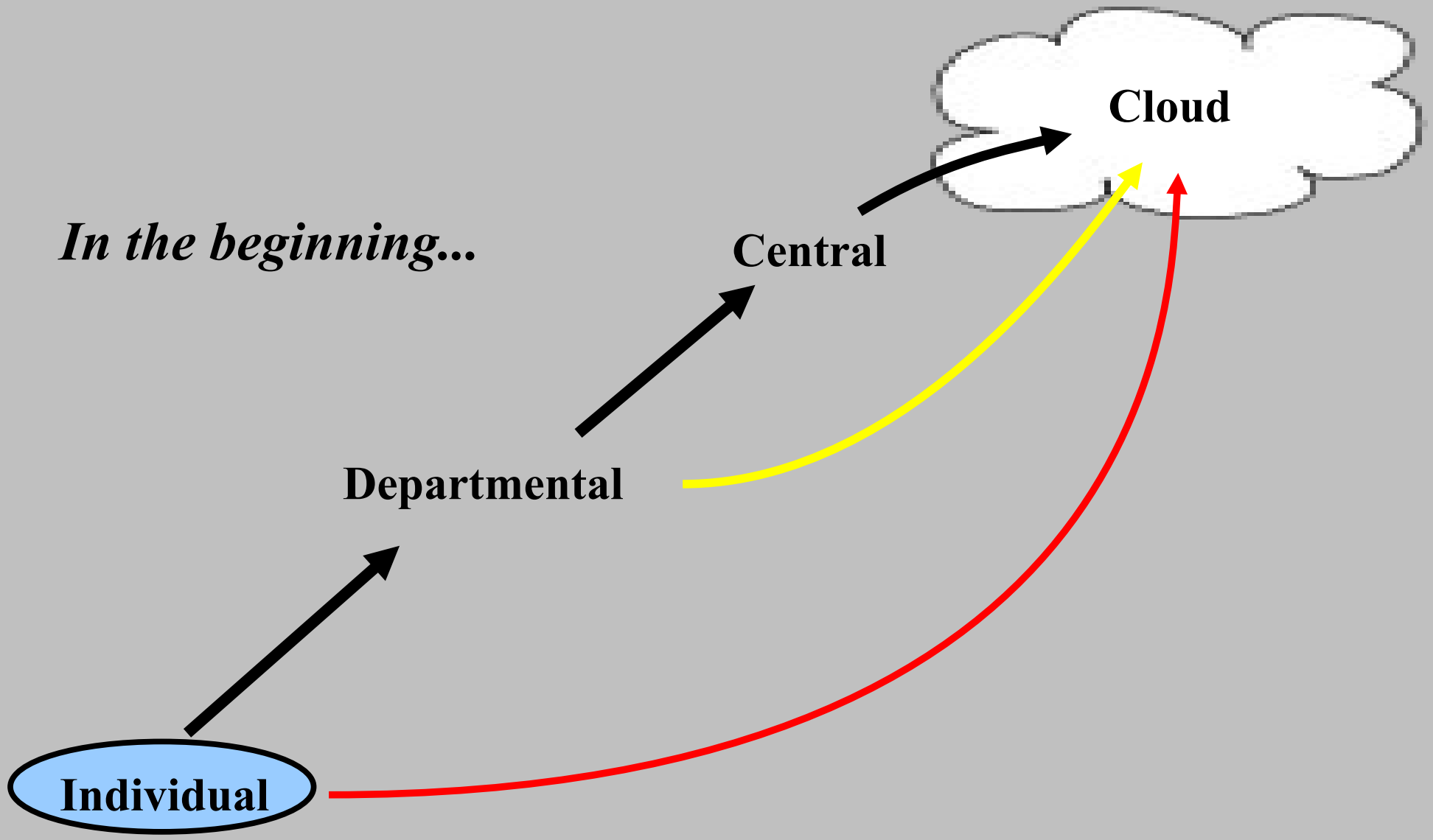
Varying degrees of shared vs. dedicated, e.g. “Cloud vs. Hosted”

Cloud Computing Ingredients

- Old “service bureau” paradigm cf. ADP, 1949
- On-demand scaling; pay-as-you-go
- Revenue from ads + subscriptions
- Data mining for personalizing the ads
- Modern technology (web, Internet, datacenter)
- Low cost via high-scale, more self-support
- Disintermediation (self-service)

Natural Evolution

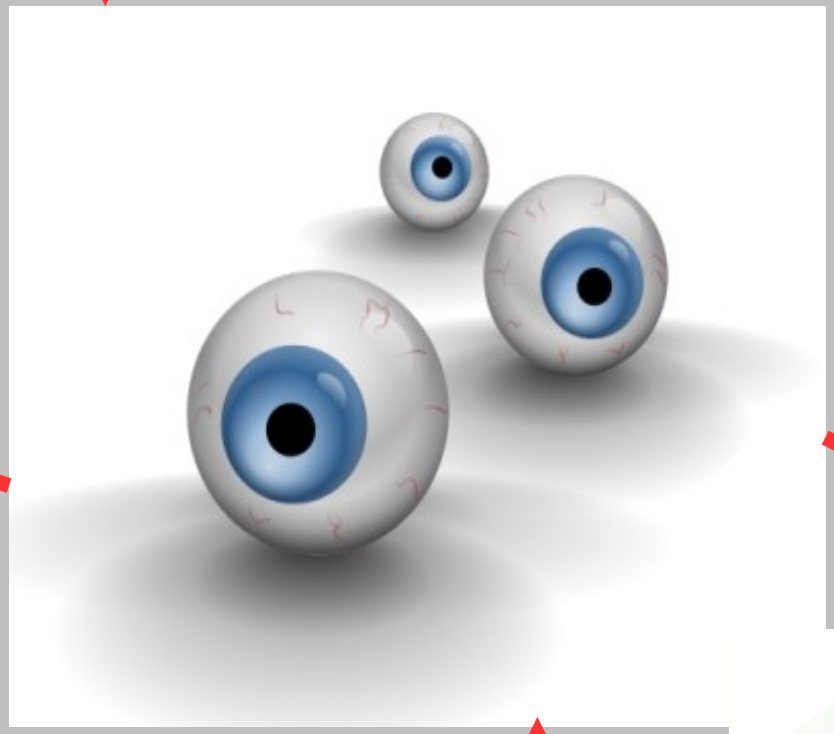
Who ya gonna call (for commodity IT)?



Goodbye “IT priesthood”... Hello “Consumer Computing”

Cloud Currency (SaaS)

users are the *inventory*



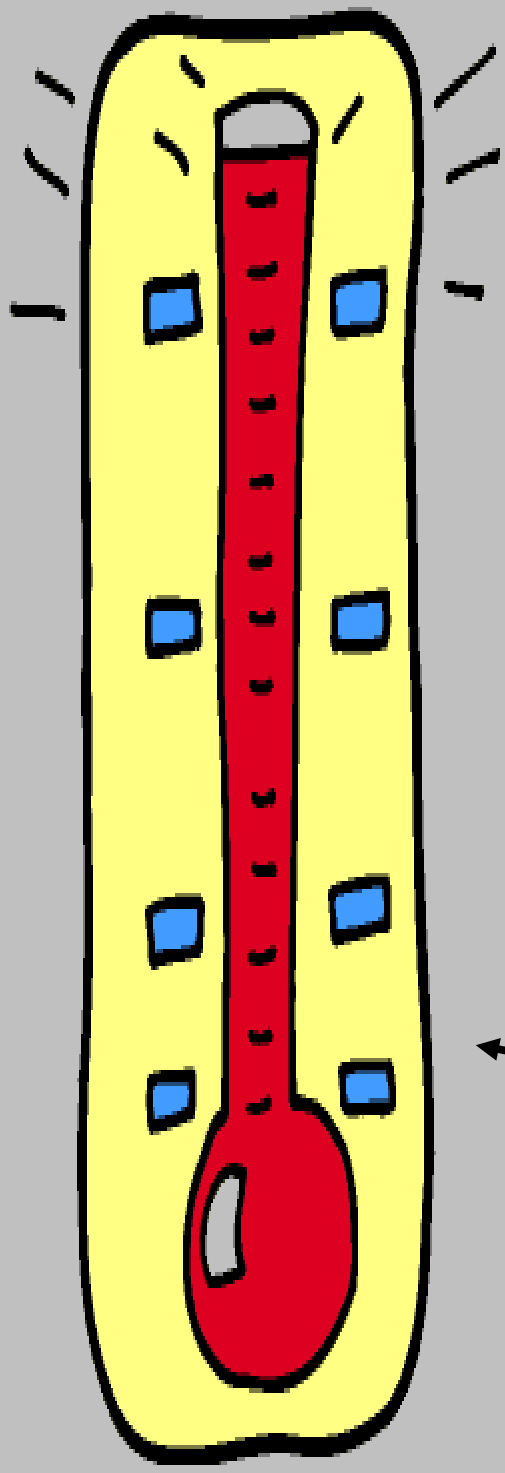
http://www.library.drexel.edu/blogs/librarylog/dollars.gif

http://www.cksinfo.com/clipart/people/bodyparts/eyes/eyeballs.png

http://thomaslarock.com/wp-content/uploads/2009/06/datamining.jpg

So...
Cloud
Computing:

Hot or Not?



Steve Ballmer

Nick Carr

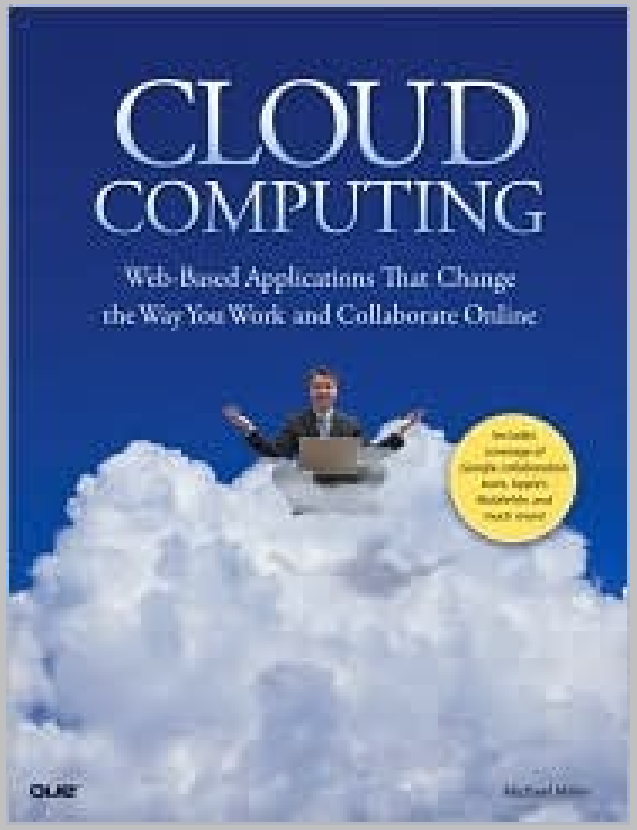
Eric Schmidt

Bill Gates

Larry Ellison

Richard Stallman

It must be Hot if …

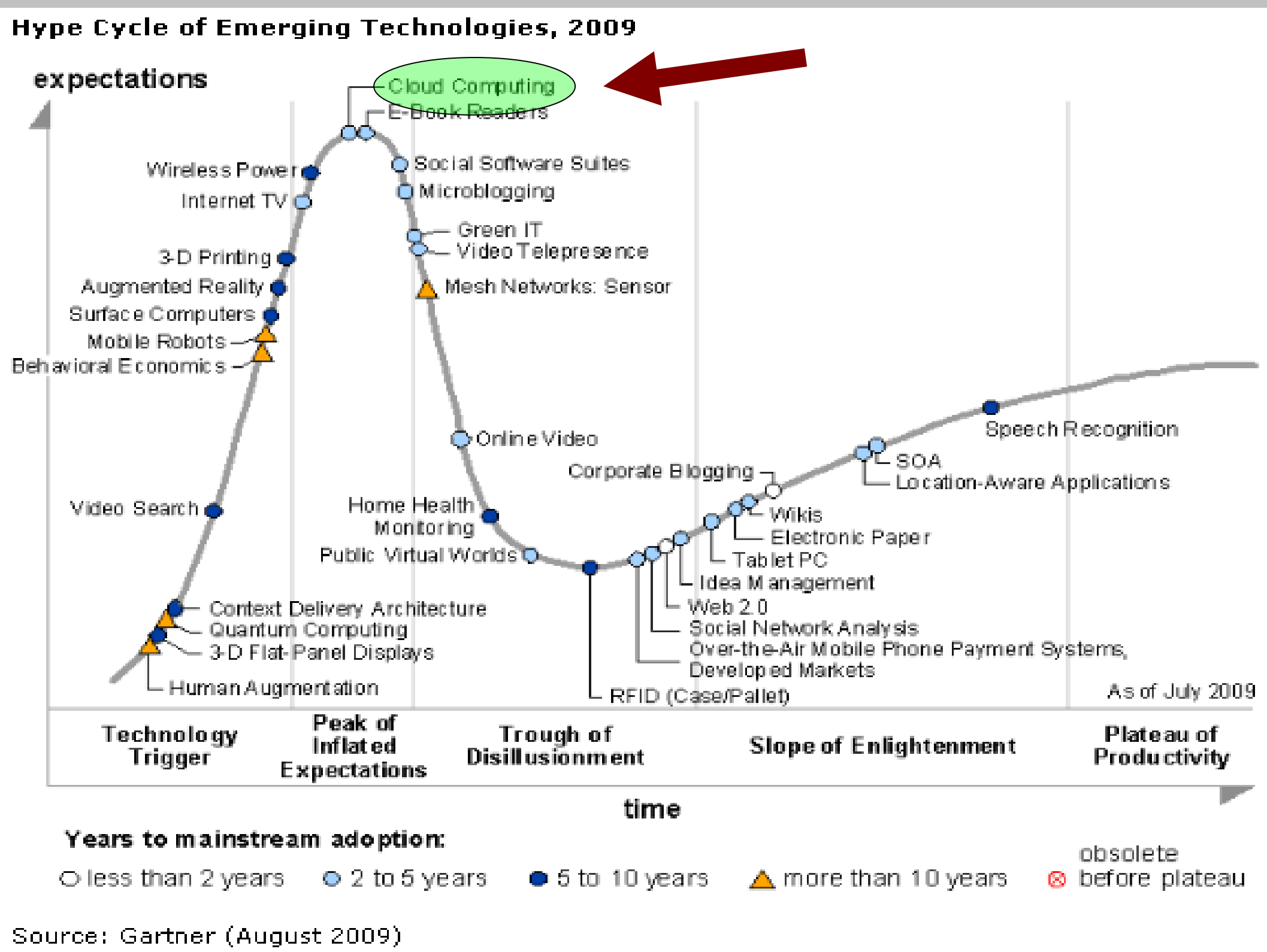


http://res.sys-con.com/story/dec08/770227/CloudComputingBook_MichaelMiller.JPG

http://www.virtualizationconference.com/node/597208

http://img.brajeshwar.com/cloud-computing-vote.jpg

http://gemsres.com/section/156/Cloud-Computing-307x100.jpg



Source: Gartner (August 2009)


OLD MAN YELLS AT CLOUD


UW meets the Cloud

Cloud Apps @ UW

50% of students ALREADY forward their UW email!

Microsoft Office Live

YAHOO!

Google

facebook

75K UW users

Doodle

dimdim

Adobe

Blogger

EPSILEN

AHEAD OF THE eLEARNING CURVE

voicethread

Cisco webex

skype

Bb Blackboard

GoToMeeting

SECOND LIFE

YouTube

Basecamp

twitter

Wimba people teach people

Strategic Premises

- Cloud computing is a big deal
- UW should encourage use of cloud services, consistent with compliance obligations
- Compliance risk is reduced via partner contracts
- A dual-vendor strategy is appropriate for UW
- Including faculty, staff ***and*** students maximizes collaboration potential

Cloud Partnership Motivations

- ***This is where our community is (or will be)!***
- Enhance the cloud services
- Improve regulatory compliance
- Reduce demand for scarce data center space
- Allow better use of scarce IT staff

IT Goal: info access & collaboration, any time, place, device

→ Cloud computing supports this goal

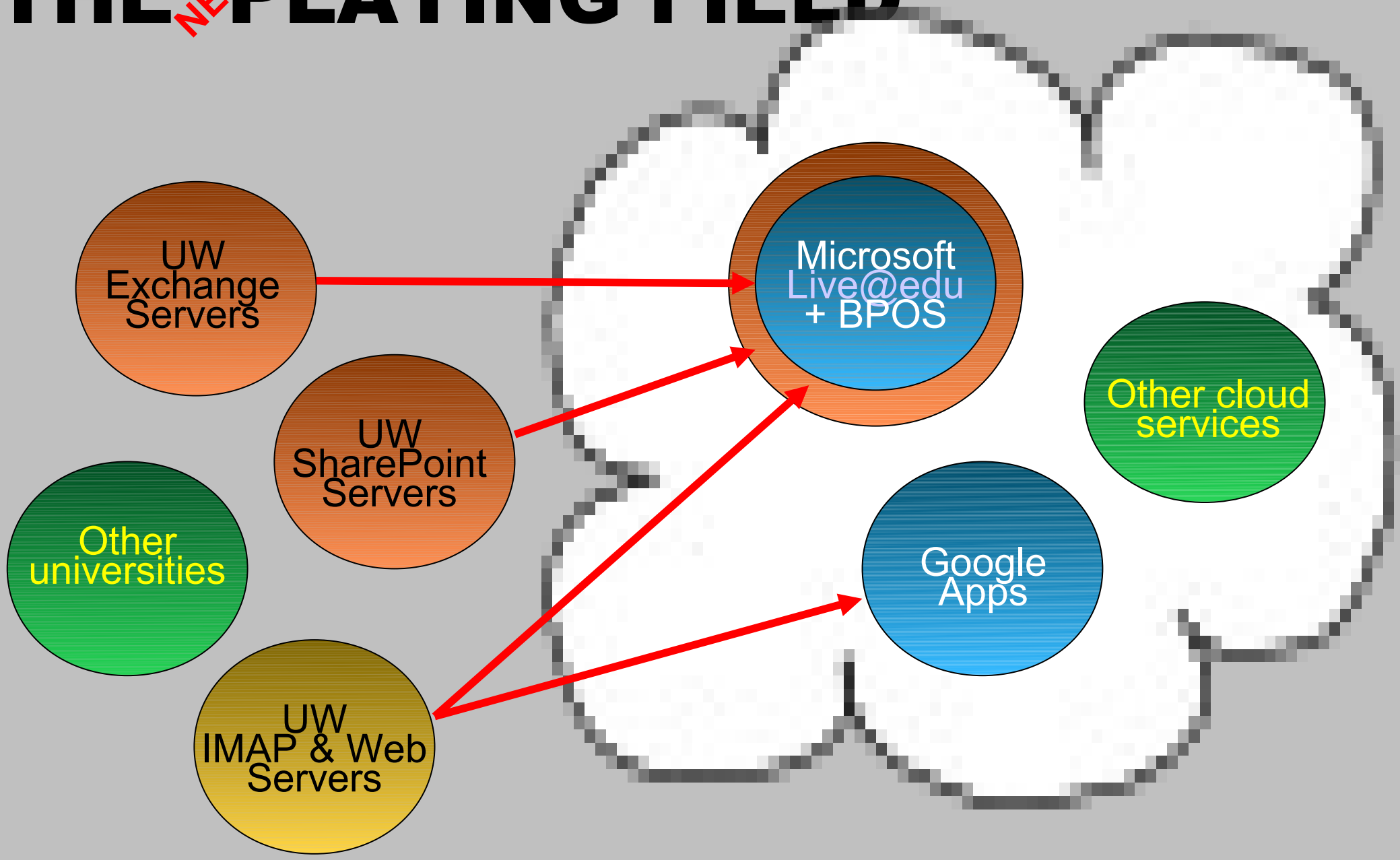
A Tale of Two Clouds (for SaaS)

-One size does not fit all

-We want both partners to succeed

http://blogs.msdn.com/blogfiles/stevecla01/WindowsLiveWriter/MicrosoftGoogleandCloudWars_ACE7/03cloud_xlarge1_thumb.jpg

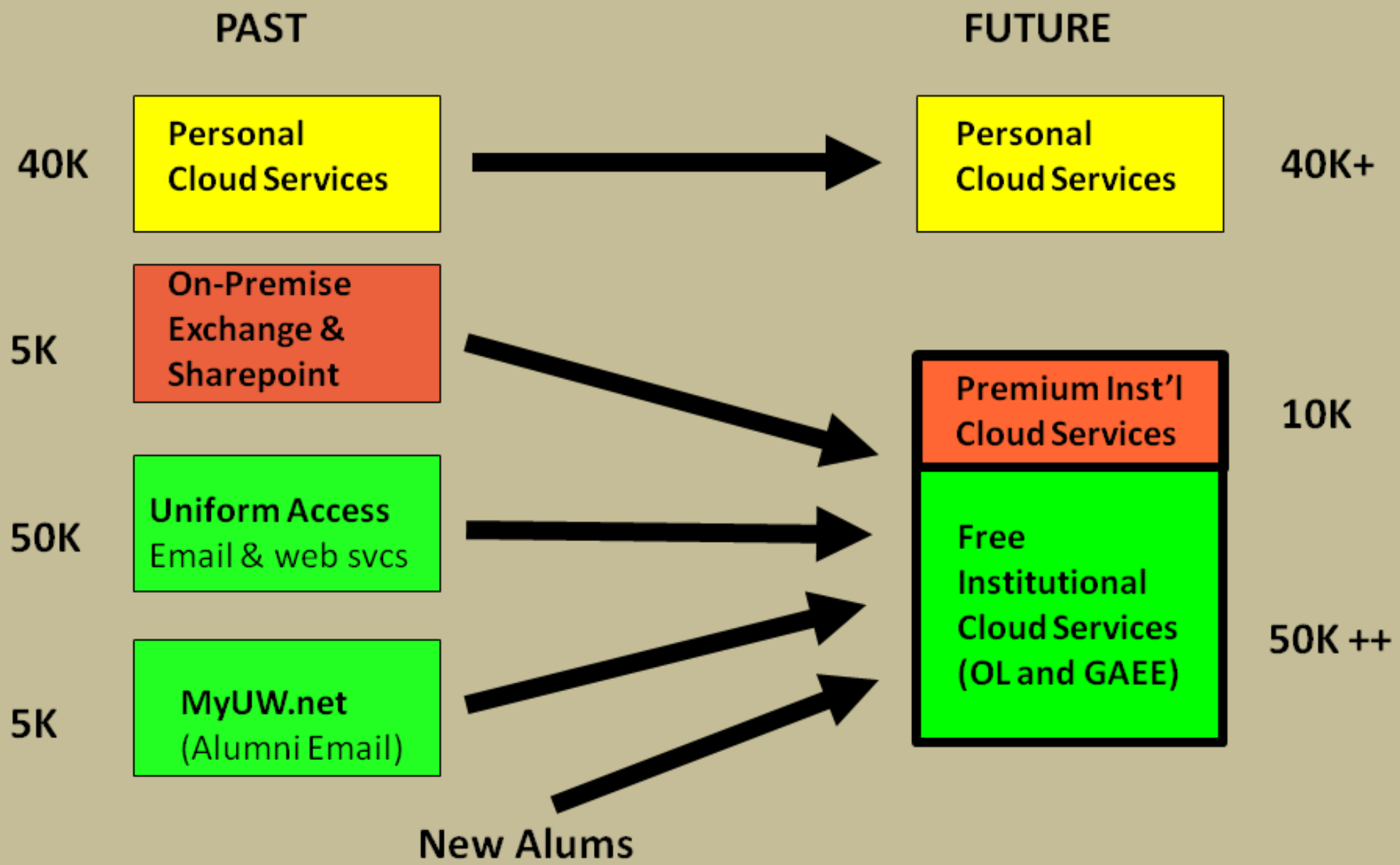
THE NEW PLAYING FIELD



The IT challenge: make collaboration work in this context!

Platform Migration Model

2009 - 2012



Past Progress

- 2009:
  - MS and Google pilots successfully completed
  - Campus launch to students & alums on 9/28/09
  - Successful CSE launch (fac/staff/students)
- 2010:
  - Planning for 2011 phase-out of student UA svcs
  - Launch for faculty/staff
  - Begin working on enterprise Groups integration

Present and Future

- 2011:
  - Partial phase-out of on-premise student svcs
  - Upgrade on-prem Exchange to enable its demise :)
  - Enterprise Groups & Resources integration
  - Mobile apps integration
  - Upgrade to new Google Apps infrastructure / svcs
  - Preparing for MS live@edu federation & migration
- 2012:
  - Deploy Office 365
  - Evaluate MS Lync and Google Voice services
  - Continue working on Google/MS cal interop
  - Begin working on Skype/Google/MS UCS interop

Open Issues

- Namespace & service boundary issues
- Federation collateral damage
- Migration tools
- Monitoring tools
- Moving Target syndrome
- HIPAA
- Auth for collaboration outside your domain
- Full groups integration
- Calendar & contact interop
- Having good access control defaults

Concerns

- User Concerns
  - Service maturity
  - Privacy
  - Interoperability
- Institution Concerns
  - Operational risk
  - Financial risk
  - Compliance risk

Service Maturity

Amazon Is Down. Very Down.

June 6, 2008 — 11:18 AM PDT — by Stan Schroeder —

amazon.com

http://mrgadget.co.za/catalog/images/Moving_Target.jpg

Privacy

vs. “Total Information Awareness”

Google

amazon.com

LexisNexis
ChoicePoint

Microsoft®

Interoperability

example: the calendaring problem

http://www.loc.gov/exhibits/bobhope/images/vcvg20.jpg

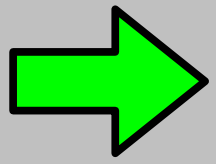
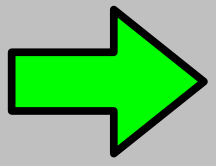
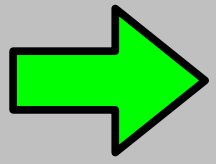
Institutional Risks

- **Operational** (service or business failures)
  - Individuals have biggest stake here *for now*
- **Financial** (surprise support or integration costs)
  - High-touch support model could kill future savings
- **Compliance** (failure → liability cost)
  - Primarily unauthorized disclosure of sens. Info
  - Limited forensics ability → notification cost
  - Ability to respond to legal requests for data

NB: 1) these kinds of business risks are **uninsured**
2) departments assume $$ liability for failure to comply w/UW policies
3) data guidelines need to cover all cases, not just **cloud computing**

Risk Mitigation

compared with status-quo

Inability to respond to eDiscovery request		Partner contracts provide for UW account control
Disclosure of confidential data		Data security guidelines to define appropriate use
Inability to comply with FERPA		Contract terms added

Organizational Impact

- Epic changes
  - Shrinking budget (state support cut in half)
  - Culture shifts (individ. control, consumerization)
  - Tech / Market shifts (cloud, mobility, energy use)
- Broker and integrate rather than build
- Move up the stack --when the costs make sense
- Use scarce resources carefully; don't re-invent IT
- Staffing has decreased, but not expectations
- The age of adequacy... and opportunity

National Consortia

- Common Solutions Group
  - Model contract
  - Cloud service RFP
- Educause
  - Information clearinghouse
  - Cloud-related webinars
- Internet2
  - “Above the Net” initiative
  - Investigating cloud service pilot

Lessons

- Free services are not free
  - Moving targets, startup problems, service culture
  - Cloud Conundrum: Integration adds *value* & *cost*
- Collaboration Barriers
  - Multiple account madness
  - Interoperability
- Pushback
  - Students: “Where's the beef” (vs. existing options)
  - Faculty: privacy, security, data ownership/mining
- Help desk load: OK so far (no forced migrations yet)

Summary

- Basic email/cal functions work fine on both
- Doc editing & collaboration: work in progress
- Cross vendor interop: needs improvement
- UW adoption rate: modest (but no deadlines set)
- Help desk load acceptable (but faculty yet ahead)
- Success criteria, esp amount of collaboration, may be hard to measure, but email forwarding trends will be significant

World-wide cloud use: soaring *despite* concerns

The cloud enables more collaboration

So we need to enable the cloud...

http://www.geo.me/images/cloud.jpg?1249871890