

Cloud services

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Opportunities



Dutch higher education & research organizations interested in using cloud services:

- feature rich
- short development cycles
- familiar to their users
- cost reduction



Vendors - offer



-approach Dutch higher education & research (2008)

-Special offers

- 'free' educational versions of their online collaboration platforms:

Google Apps & Microsoft Live@edu

-However

- Unclear specifications
- vendors target institutes individually



Google Apps



Apps for higher education: Less IT, More IQ.

Advanced collaboration tools, for free.

Google Apps

[How Schools Benefit](#)

[Trust & Security](#)

[Learning](#)

[Support](#)

More efficient tools for more effective education

Google Apps delivers the advanced technology college students need to communicate and collaborate, without the cost and complexity of maintaining on-site hardware and software, and all free of charge and ads.

[Get Apps
for your school](#)

Learn More:

[Customer Case Studies](#)
[Resource Center](#)
[Security & Privacy](#)
[Apps EDU datasheet](#)

Get Started:

[Quick Start Guide](#)
[Google Apps FAQ](#)

Stay Connected:

[Quarterly EDU Newsletter](#)
[New Features Email & RSS](#)
[Google Enterprise Blog](#)
[Google Apps on Twitter](#)

Enhanced communication

7+ GBs of storage means Gmail users never have to worry about a full inbox.



Integrated calendar includes subscriptions, group calendars and resource scheduling.

Web-based applications are available to access from any computer or Internet-enabled mobile device.

Smarter collaboration

Access documents remotely and collaborate in real time.



Sharing and privacy controls let document creators choose who can access and edit their docs.

Build group or project sites without HTML, and include multiple contributors.

Security and stability

SAS 70 Type I and Type II certified. Your data is private and secure.



Extensive APIs and support of open industry standards lets Google Apps easily integrate with existing IT systems.

Optional email security and archiving services from [Postini](#) help you stay compliant.



Microsoft Live@edu



Student Email + Calendar

Equip your students with student email and calendar tools similar to what they may use in the workforce.



Microsoft Outlook Live

Provide a co-branded Exchange solution at no cost with Outlook Live (10 GB/user).



Collaboration

Online services to store, share, and edit documents.



Microsoft Office Web Apps

online companions to Word, Excel, PowerPoint and OneNote



Windows Live SkyDrive

25 GB of free online storage.



Windows Live Spaces

Great for group projects, campus clubs, or personal pages.





Respons



- Higher education & research organization join forces: SURF negotiates with vendors
1 voice
- Goal:
clear understanding on organizational and technical aspects

equal conditions for all
160 member organizations
1 million users



Economy of scale



University

20K users



Cloud
vendor



Economy of scale



SURF

1M users

Cloud
vendor



Economy of scale



All
NREN's

Cloud
vendor



Benefits for vendors



- One-stop-shop
1 gateway to 160 organizations and 1 million tech savvy users



Functional aspects



- End-users

favor generic collaboration services
instead of course specific online learning systems

- E-mail
- Document sharing
- Presence & Instant messaging
- Webconferencing (videoconferencing and whiteboarding)

- Both Google and Microsoft offer a compelling set of services



Functional aspects



- System managers
 - Need customization:
look-and-feel of University
 - Access to log files
 - Access to support specialists from vendor
 - *Not all IT departments are eager to adopt the cloud*



Non-exclusive



- Higher education and research need to be able to use cloud services from multiple vendors

benefit from the diversity of the cloud mix and match

- Interoperability?
 - web based
 - rich client applications
 - multiple operating systems
 - multiple (mobile) devices



Identity management



- Cloud vendors suggest:
"We take care of your user accounts"
- Higher education and research organizations need to stay in control of their identity management:

For each user

1 user account

stored and managed at the home organization

to log in to all internal and external services



SURFfederatie



- Connect SURFnet member organizations and cloud vendors to federated authentication system

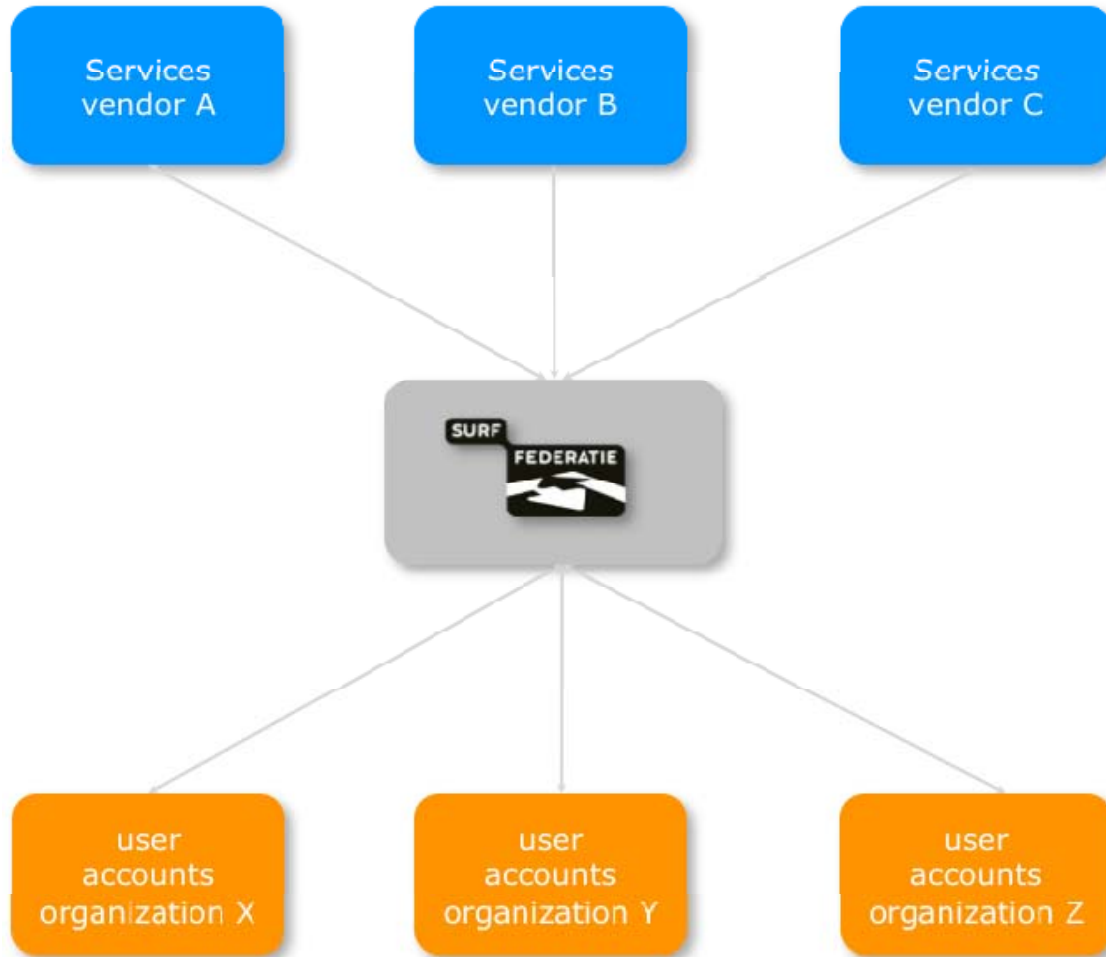
SURFfederatie

authentication hub
protocol translation

- Each organization has to maintain only 1 connection



SURFfederatie





SURFfederatie



- Connecting Google:
2 weeks
- Connecting Microsoft:
2 years
(technical issues)



Privacy and legal aspects

- Storage of data?
Location – legal implications
 - outside of own country
 - inside European Union
 - inside United States
- Who has access to data?
data mining?
- Data portability
Importing and exporting data
migrating to different vendor



Privacy and legal aspects

- Google data storage
unclear statement: "somewhere in the world"
Showstopper for a number of Dutch Universities
- Microsoft data storage
region specific
for Europe:
Dublin (primary) & Amsterdam (secondary)



License agreement



- Central license agreement for all member organizations through SURFdiensten
 - Google
 - took time to establish (1,5 years)
 - no previous experience in dealing with a license through a NREN
 - Microsoft
 - history of centralized license management



Pilots



- Start small, scale fast
- Google pilot at Open University
- Microsoft Live@edu pilot at University of Tilburg
- Other member organizations benefit from pilot results and experience

Share experiences in cloud services community



Current status



Google

-5 member organizations use Google

Microsoft

-Deploys new production release of Live@edu:
compatible with federated authentication (SURFfederatie)

October – USA

November – Europe

-University of Tilburg: live in 2010

Three other Universities: live in early 2011

Number of other Universities are planning the adoption of
Live@edu



Current status



Google

- Focus on end-users (bottom-up approach)
- Find it harder to deal with institutions (enterprise ICT)
- Unclear data storage policy – is affecting adoption
- Fast implementation of new technologies - web centric

Microsoft

- Focus on enterprise (top down approach)
- Legacy: cloud services vs local services
(Microsoft Office on the desktop)



Other vendors



SURFnet is currently negotiating with:

- Cisco (WebEx webconferencing)
- IBM (LotusLive)
- Adobe
- Blackboard



Blackboard



Adobe

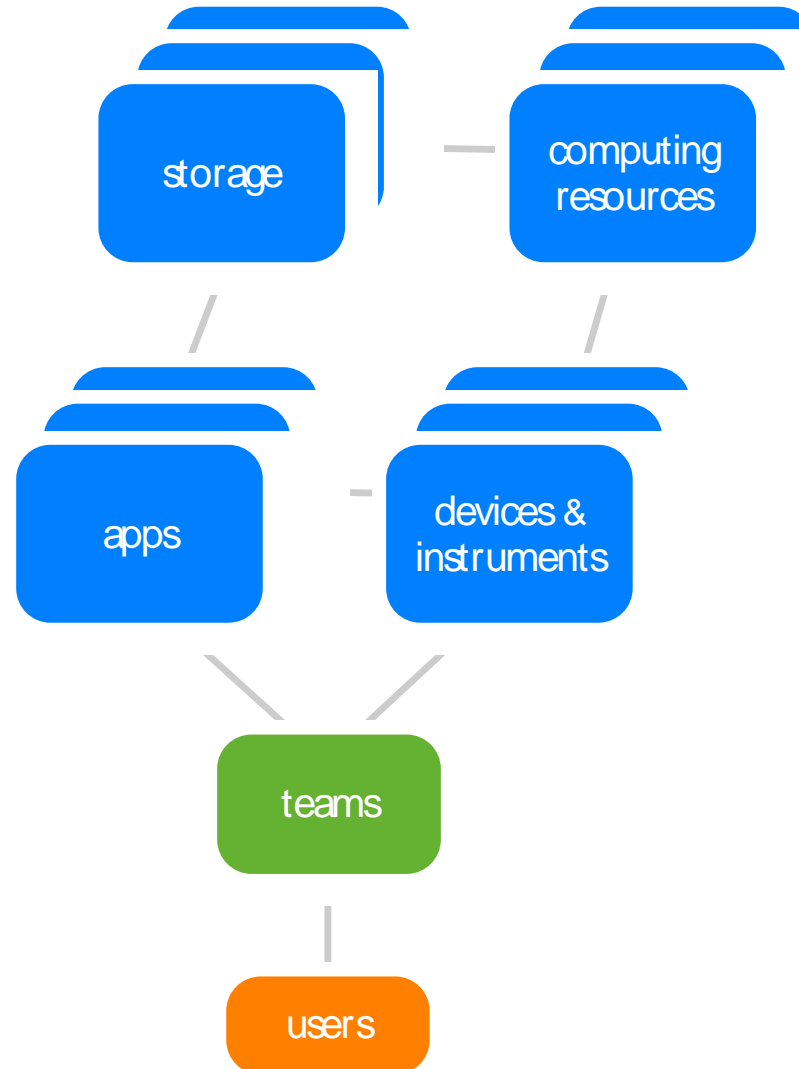




Collaboration Infrastructure Enabling Dynamic Services



- Next step in connecting and integrating internal IT systems and external cloud services

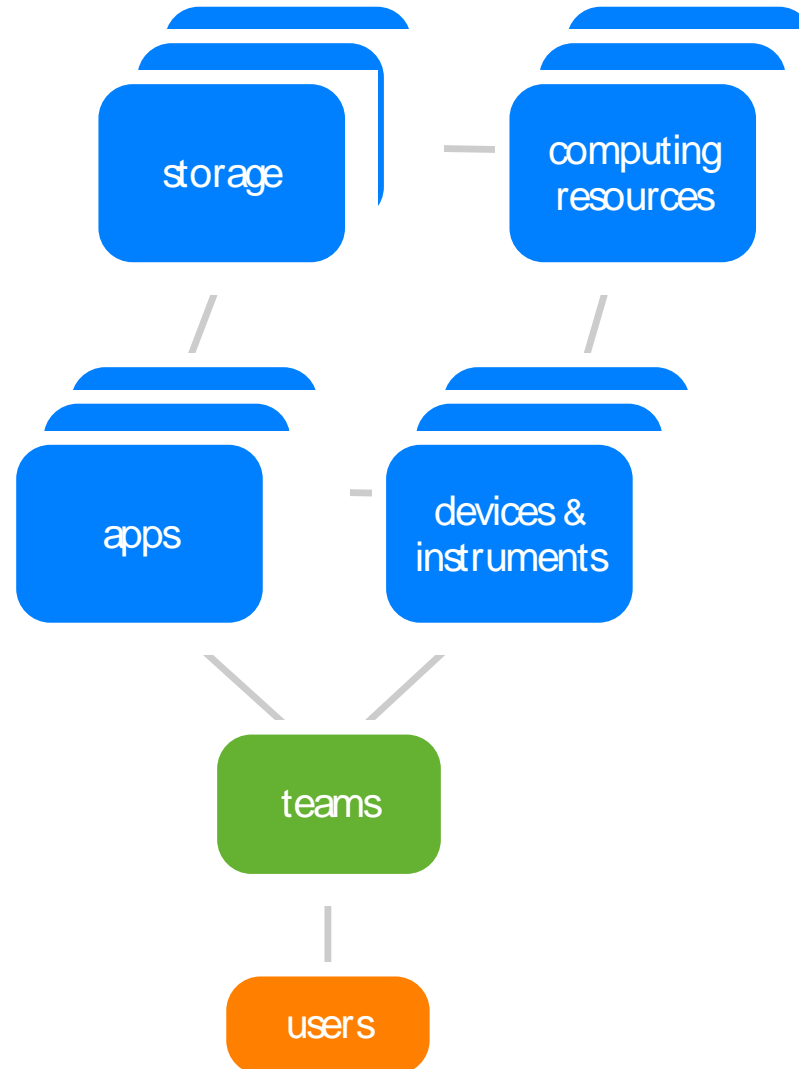




Collaboration Infrastructure Enabling Dynamic Services



- 1 user account
Single sign-on
- Centralized team management
- Data sharing between online applications, devices and instruments





Next steps



- Working together on e-Infrastructure

Collaboration between e-Infrastructure users and providers

Agreements with vendors

Policies, standards and interoperability