

Agenda



Open forum

Identify subjects for breakout groups
and later meetings

Main presentation

Tea and coffee break (3.30pm)

Breakout into smaller groups

The Cloud - Questions



What is the cloud?
Where did it come from?
Who owns it?
Do I have to use it?
What can it do for me?

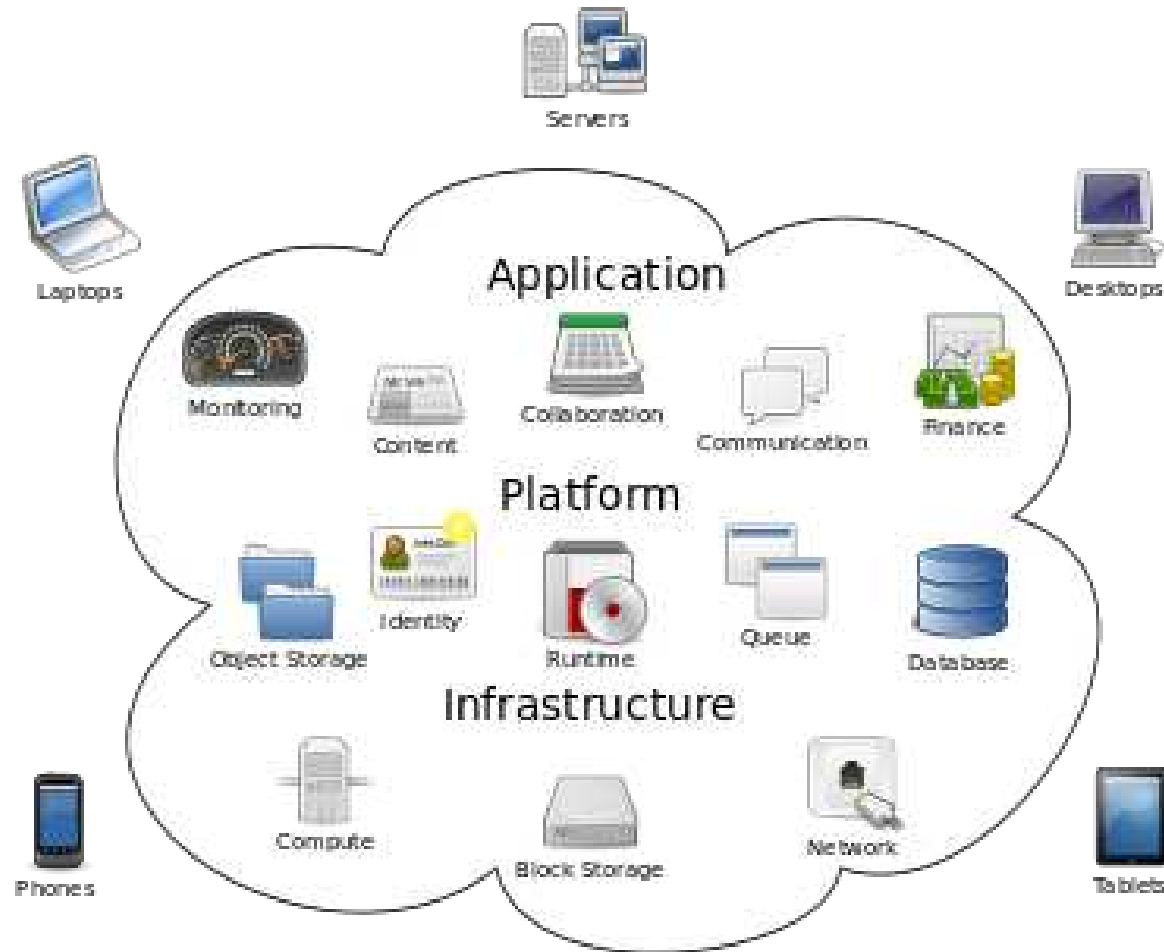
The Cloud



'The Cloud'
is a euphemism for
'The Internet'.

It comes from the pictures of
clouds that presenters use to
represent the internet.

The Cloud



Cloud Computing

Source: Wikipedia

The Cloud Provides



Shared hardware
Shared software
Shared storage
Shared communications
Invisible support

The Origins



It started with
telephones.

They formed the first network.

It went digital and then optical.

Computers jumped on the
bandwagon.

Origins – Thick



Early computers were mainframes, with one CPU but many terminals.

- All applications ran on the mainframe.
- Text based terminals were the only user interface.

Later came desktops, less powerful but one per user.

- Each desktop had its own software and was independent.
- Connections were via telephone modems.
- These were known as 'thick' clients.

Origins – Thin



File servers were invented.

- Everyone in a company could share files.
- Connections were via proprietary networking protocols such as Novell and D-Link.

Servers also began to host applications.

- Less expensive desktops could be used.

These desktops only needed basic software and were called 'thin' clients.

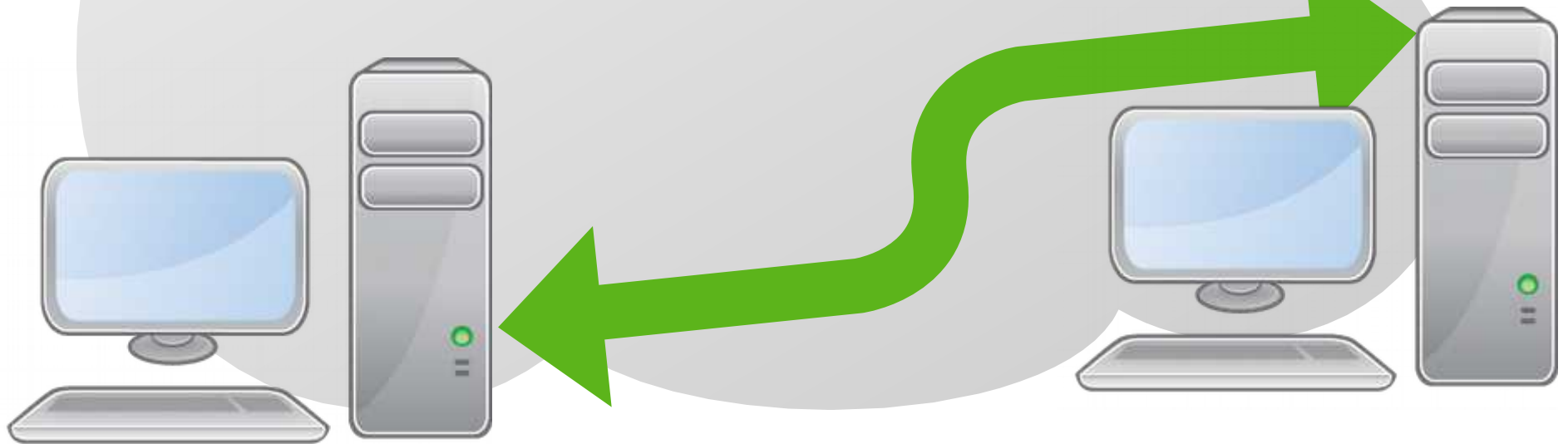
Modern devices can work in both modes.

- WP can be done on PC or Cloud (browser).
- Ethernet is now the main networking protocol.

How the Cloud Grew



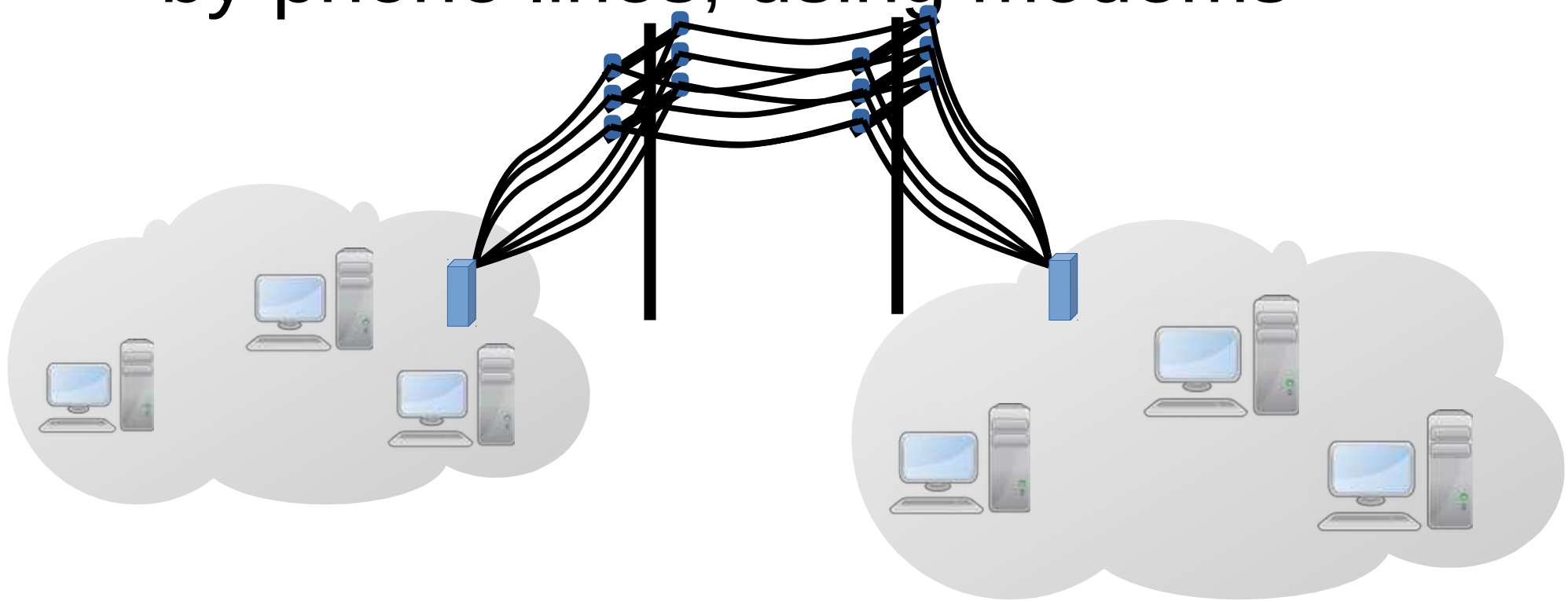
First, two computers were connected on a campus.



How the Cloud Grew



Then two campuses were connected by phone lines, using modems



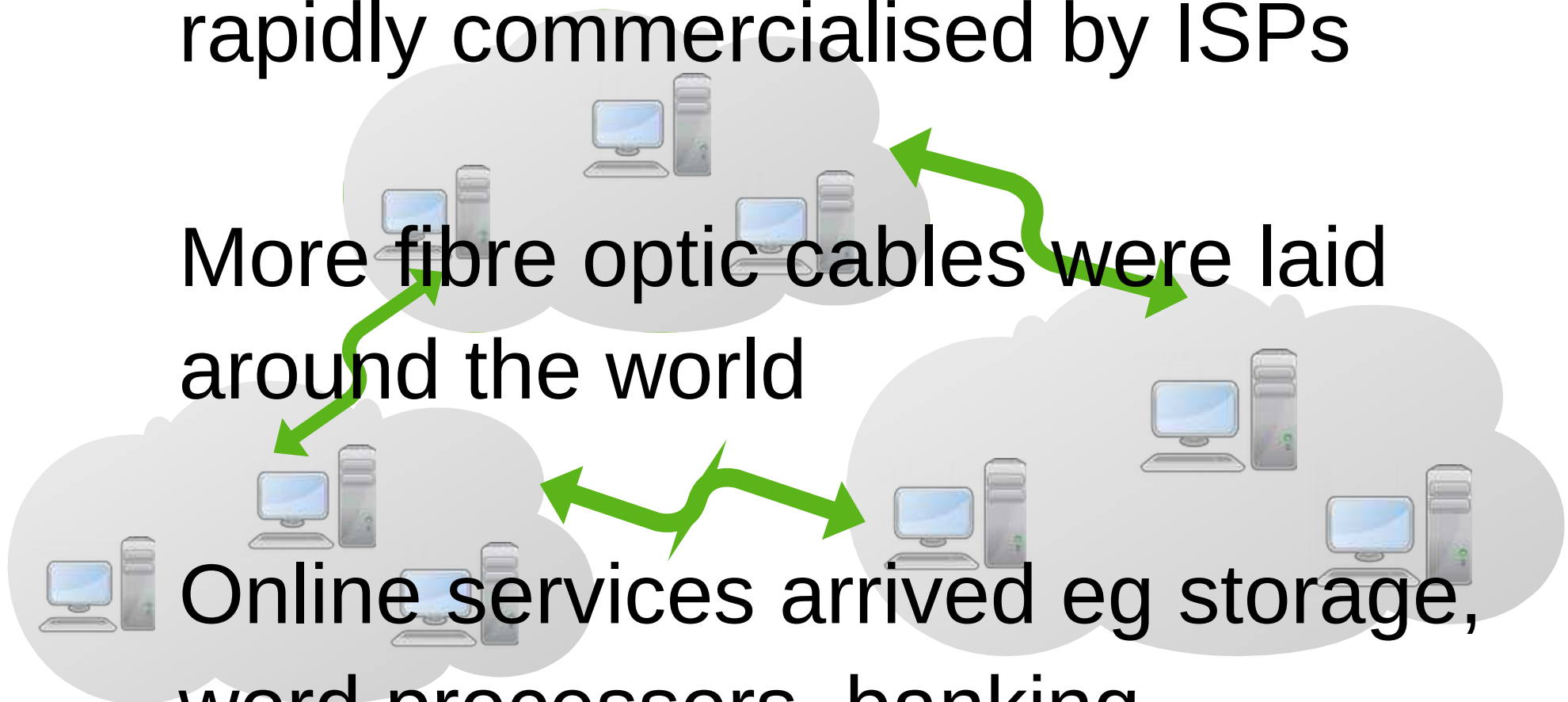
How the Cloud Grew



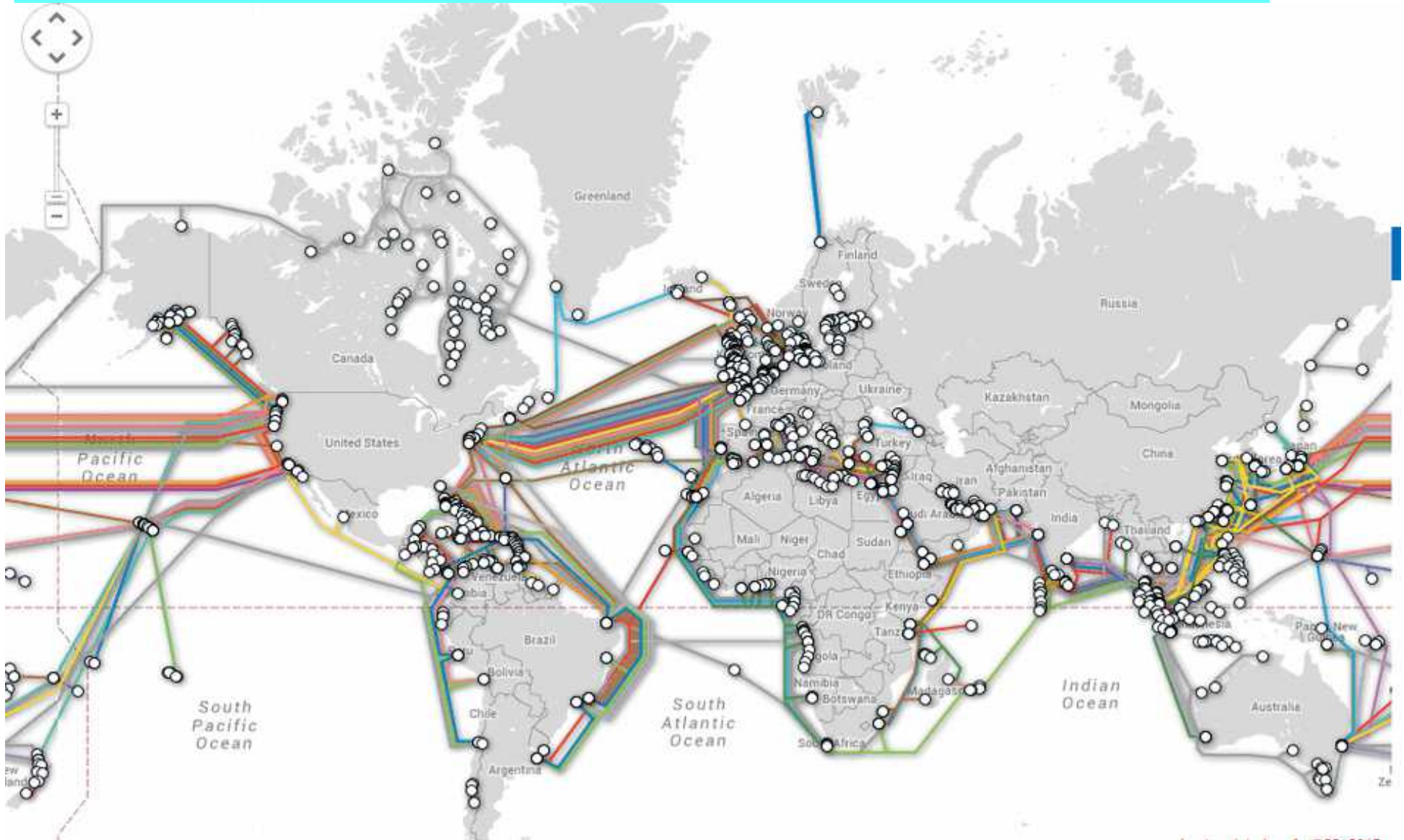
The internet arrived, and was rapidly commercialised by ISPs

More fibre optic cables were laid around the world

Online services arrived eg storage, word processors, banking



How the Cloud Grew



<http://www.submarinecablemap.com/>

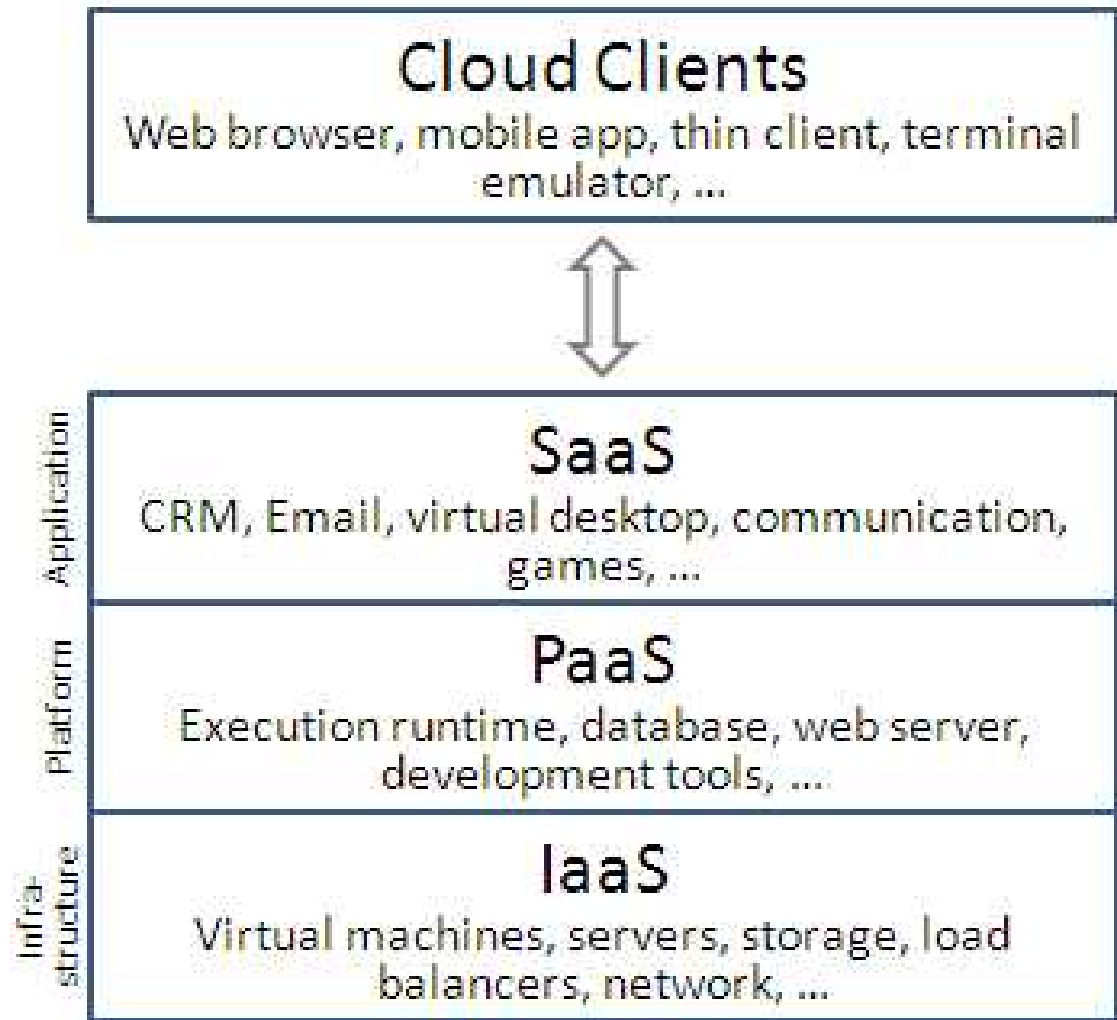


The Cloud has Service Layers

Different users use different levels of resource.

Home users mostly use the top two levels.

Business uses all levels.



Some Data Centres



Two videos that show inside Google data centres:

<https://www.youtube.com/watch?v=XZmGGAbHqa0>

<https://www.youtube.com/watch?v=avP5d16wEp0>

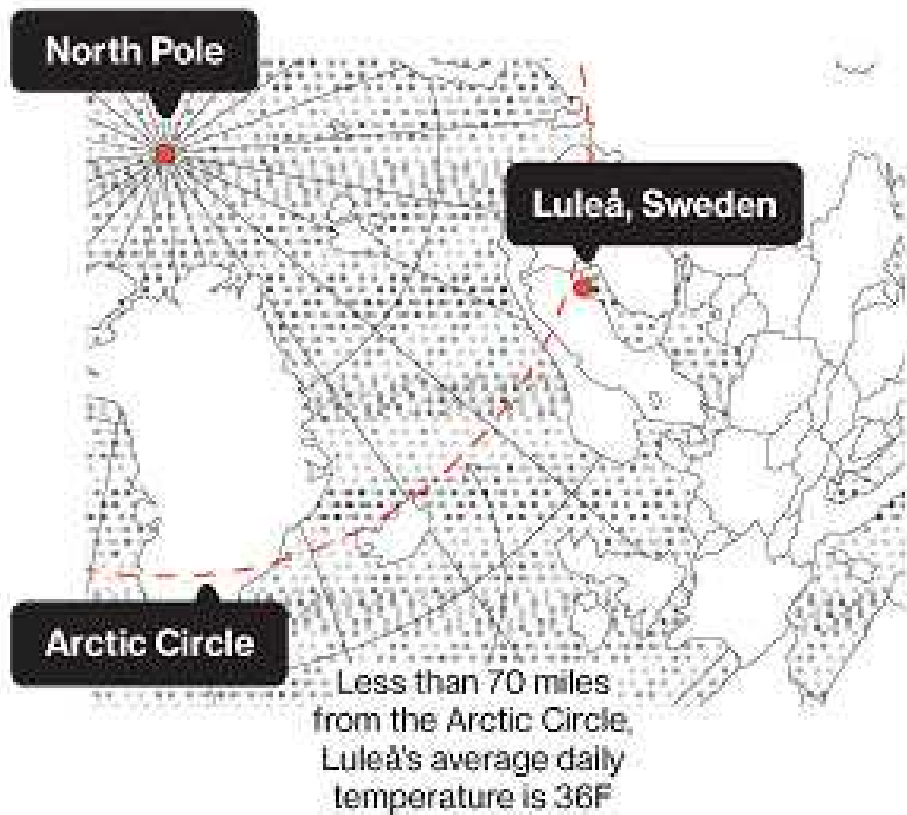
A Hemel Hempstead data centre:

<http://www.kualo.co.uk/home/uk-datacenter>

Facebook



Keeping Things Chill



Luleå

350 million photographs,
4.5 billion likes,
10 billion messages a day.

Normal 3W of cooling for
1W of computing reduced to
1.04 : 1.

Why use the cloud?



It saves money.

- Companies can minimise their computing infrastructure and reduce staff costs.
- Moving all US office workers to the cloud would reduce their power consumption by 87%.
- Businesses that use Gmail (PDF) have decreased the environmental impact of their email service by up to 98% compared to those that run email on local servers.
- Resources can be bought by the hour.

Typical Cloud Applications



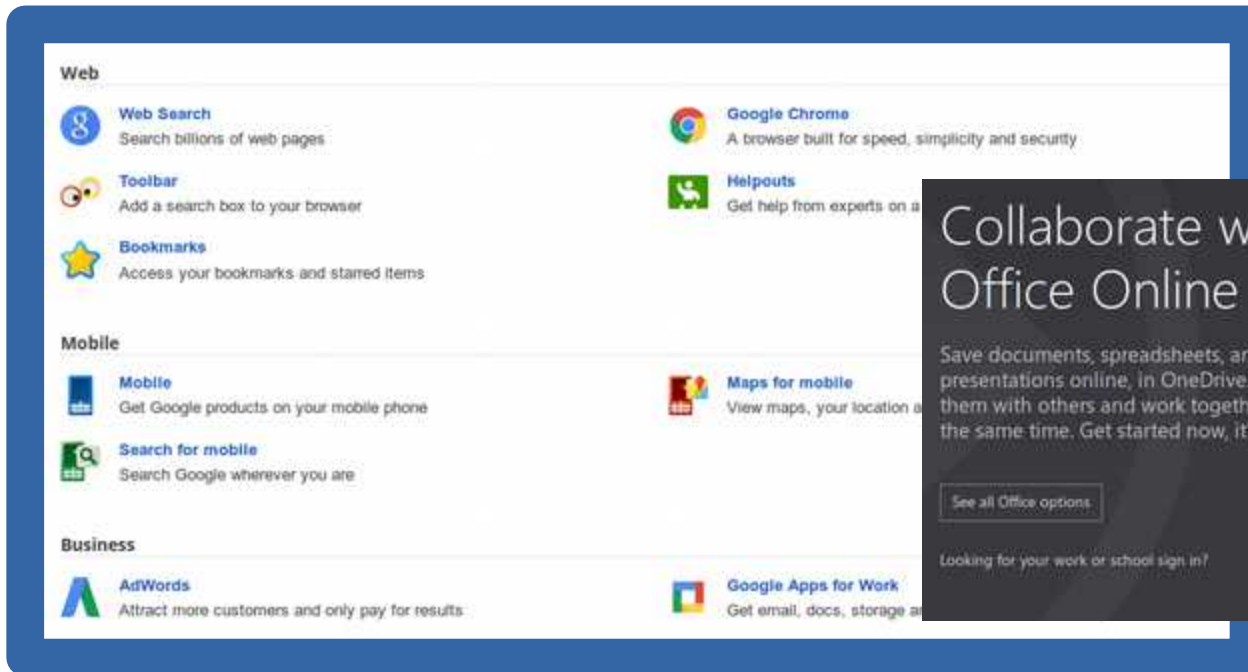
Web pages

Email

Phone Apps

Google <http://www.google.co.uk/intl/en-GB/about/products/>

Microsoft Office <https://office.live.com/start/default.aspx>



Basic Safety



The main considerations:

- Good passwords
- Read before clicking
 - Do not opt in to unwanted downloads
 - Hover and check all links
- Go to the originator or source before downloading
 - Wikipedia can be a good guide
- Set 'Do not track' in your browser
- WiFi – select the networks you join

More Safety



- Use a non-tracking browser – Firefox, Midori, Tor
- Consider anonymous mode
- Choose a non-tracking proxy search engine – Startpage, Duckduckgo, ixquick, Giburu
- More technical steps
 - Use a Virtual Private Network when abroad – provides point to point encryption from your device into the UK
 - Encrypt emails – but you have to give recipients their key separately

The Cloud



The end