The Content Crunch!

The impact of the iPlayer on UK Broadband Networks

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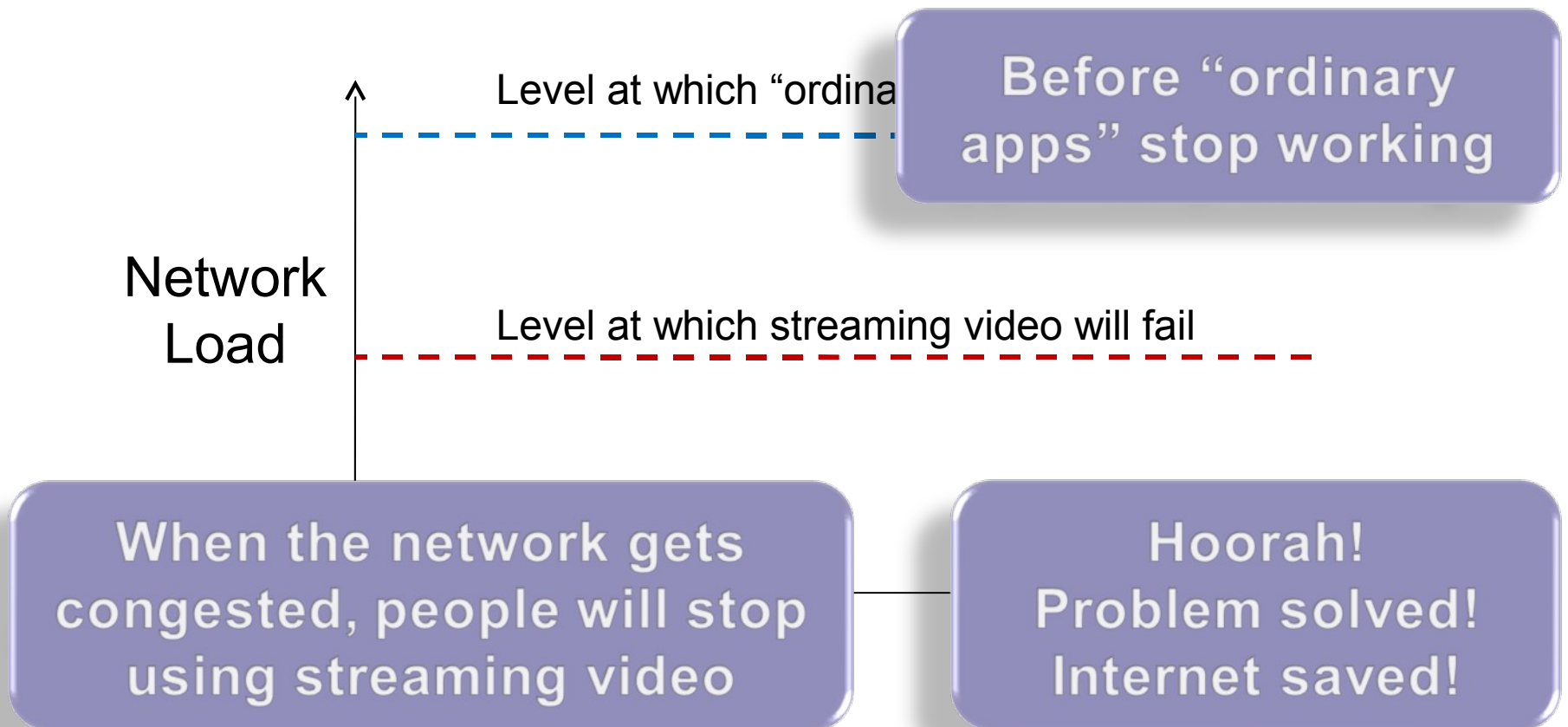
What is today's discussion about?

- The launch of the BBC iPlayer is (allegedly) placing a strain of UK broadband networks

- In my short introduction I'll explain:
  - Is this is really true?
  - Why might it be happening?
  - Who is to blame?
  - What are the potential solutions?

- Then we'll pass over to the panel for discussion

On the panel today…

Is the iPlayer killing the Internet?

Will iPlayer cause Internet meltdown?

- Consider the behaviour of IP traffic

Network Load

Level at which "ordina...

Before "ordinary apps" stop working

Level at which streaming video will fail

When the network gets congested, people will stop using streaming video
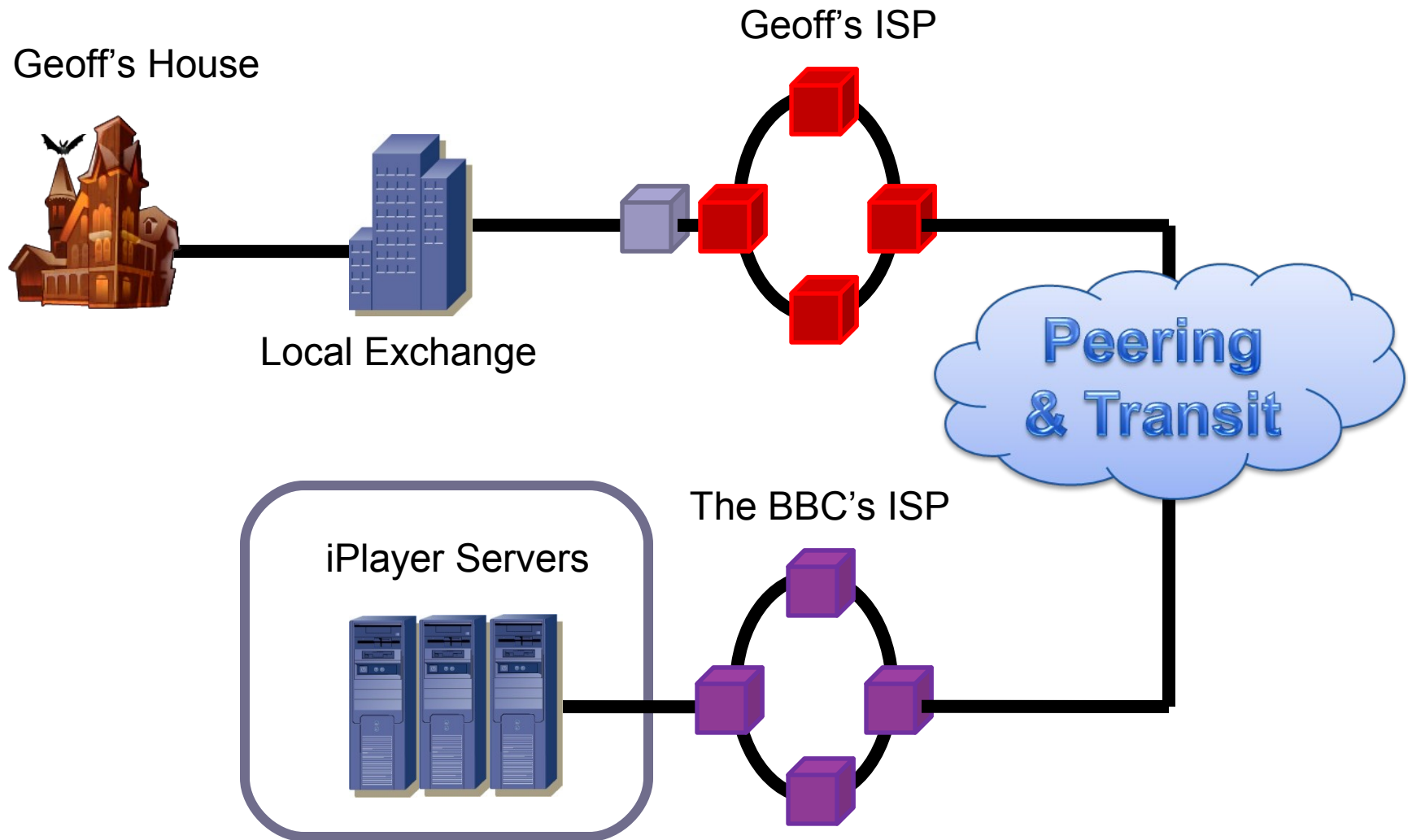
Hoorah! Problem solved! Internet saved!

Perhaps this isn't the point…

- Do we really want to build a UK Internet that is engineered to discourage innovative applications?

- The answer is clearly "no", but who will pay for a truly 21st Century broadband network?

Why is this happening?

So where is the iPlayer bottleneck?

Geoff's House

Geoff's ISP

Local Exchange

Peering & Transit
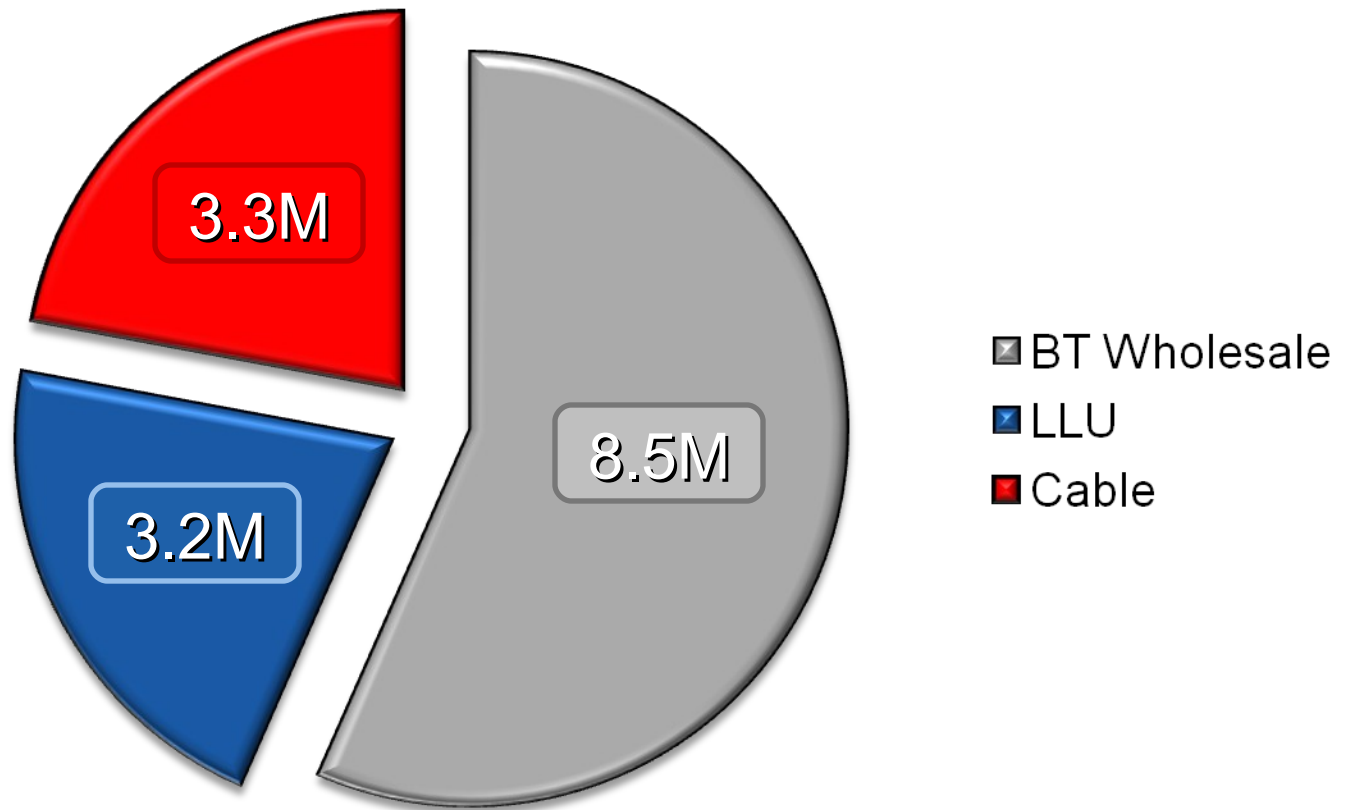
iPlayer Servers

The BBC's ISP

My local loop performance

- My exchange is not unbundled
    - I am about 1 mile from the exchange
    - Copper cable, apparently 6Mbit/s is possible

- The line card in the DSLAM will run up to 2Mbit/s

- I receive, and even slightly exceed this figure

It works sometimes, so it can't be the local loop

There are plenty more like me…

How people get their broadband

3.3M

8.5M

3.2M

- ■ BT Wholesale
- ■ LLU
- ■ Cable

Source: Telco 2.0

Total: 15 Million Subs

What about the backhaul?

- **Most likely culprit**
- Unfortunately no way for me to know for certain
  - ISPs are not required to publish actual backhaul contention rates, either average (which would be meaningless) or per-exchange (very useful)

Business Broadband 20:1

Residential Broadband 50:1

iPlayer: The "Perfect Storm"?

- iPlayer is a bit of a problem for Britain's current broadband infrastructure…

High demand **Long duration** **Very popular**

50:1 contention is not sustainable for this kind of application
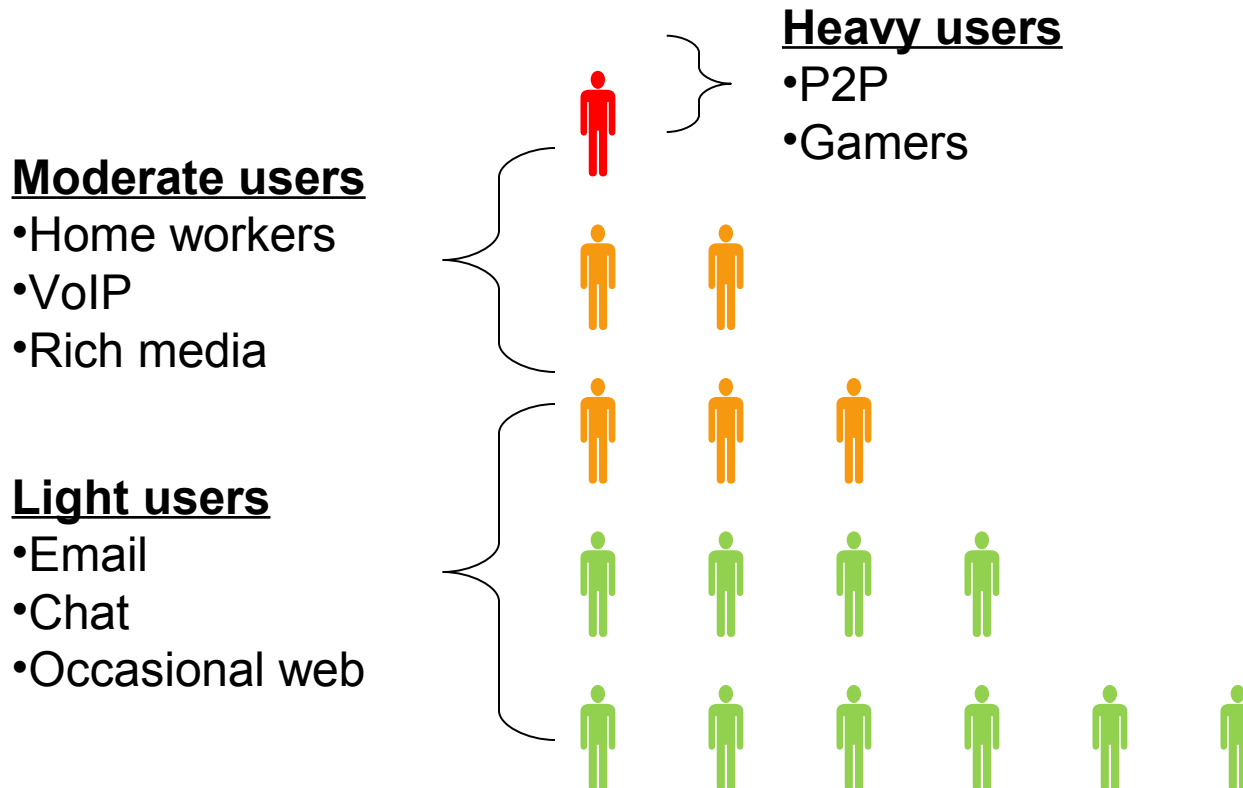
Who's fault is it?

Many potential culprits…

- UK Government
  - For creating a broadband policy that favours quantity over quality

- Ofcom
  - For not encouraging greater competition in the backhaul
  - For not requiring ISPs to publish per-exchange contention rates

- ISPs
  - For using 50:1 contention rates in the backhaul

- BT Wholesale
  - For making backhaul capacity so expensive

- BT Openreach
  - For not rolling out a better local loop

- Content providers
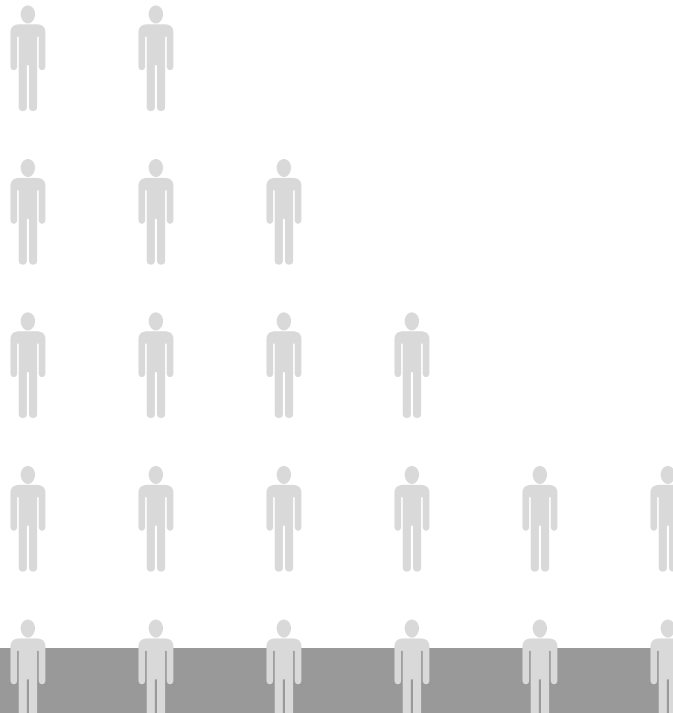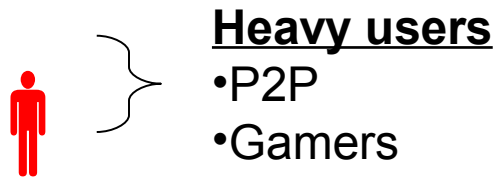 - For clogging up the Internet with interesting applications

In the ISPs' defence…

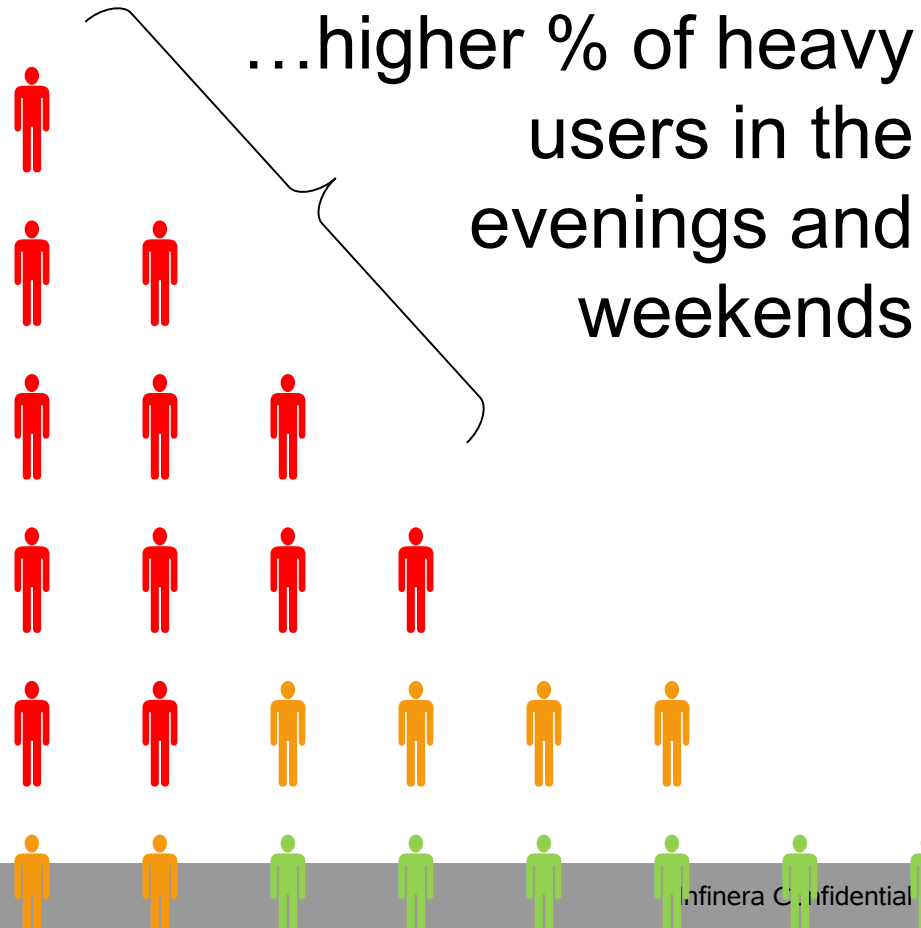- Early broadband adoption tended to create a spectrum of broadband users

Heavy users
- P2P
- Gamers

Moderate users
- Home workers
- VoIP
- Rich media

Light users
- Email
- Chat
- Occasional web

In the ISPs' defence…

- It would be commercial suicide to engineer the network for a tiny minority of heavy users

Heavy users
- P2P
- Gamers

The problem with the iPlayer…

- …and other popular, high-demand apps…

…higher % of heavy users in the evenings and weekends

They shift the general pattern of Internet use…

infinera

How can we fix the problem?