Overcoming the challenges of delivering high-quality television over IP networks: Guaranteed

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Richard Griffiths
Director of Technology
Strategy and Development
BT Vision

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Delivering television over IP

iTunes movie store

Google Video

BBC iMP

Joost

YouTube

Lovefilm.com

Tiscali TV

BT Vision

**Currently, almost as popular as UGC**

What's the problem?

- Consumer broadband networks are not designed, built or priced for the guaranteed delivery of large files in real time

- Wholesale prices for bandwidth make the delivery of large files uneconomic and unscalable

- Customers believe that things on the internet are free

- Perception that streaming video over the internet is easy, had been around for ages and it works

- Viewers have picture quality and technical expectations of entertainment that they watch on their TV

- Viewers have ease-of-use expectations of entertainment that they watch on their TV

Delivering mass-market TV over IP is not the same as streaming video to a PC

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The three-headed beast
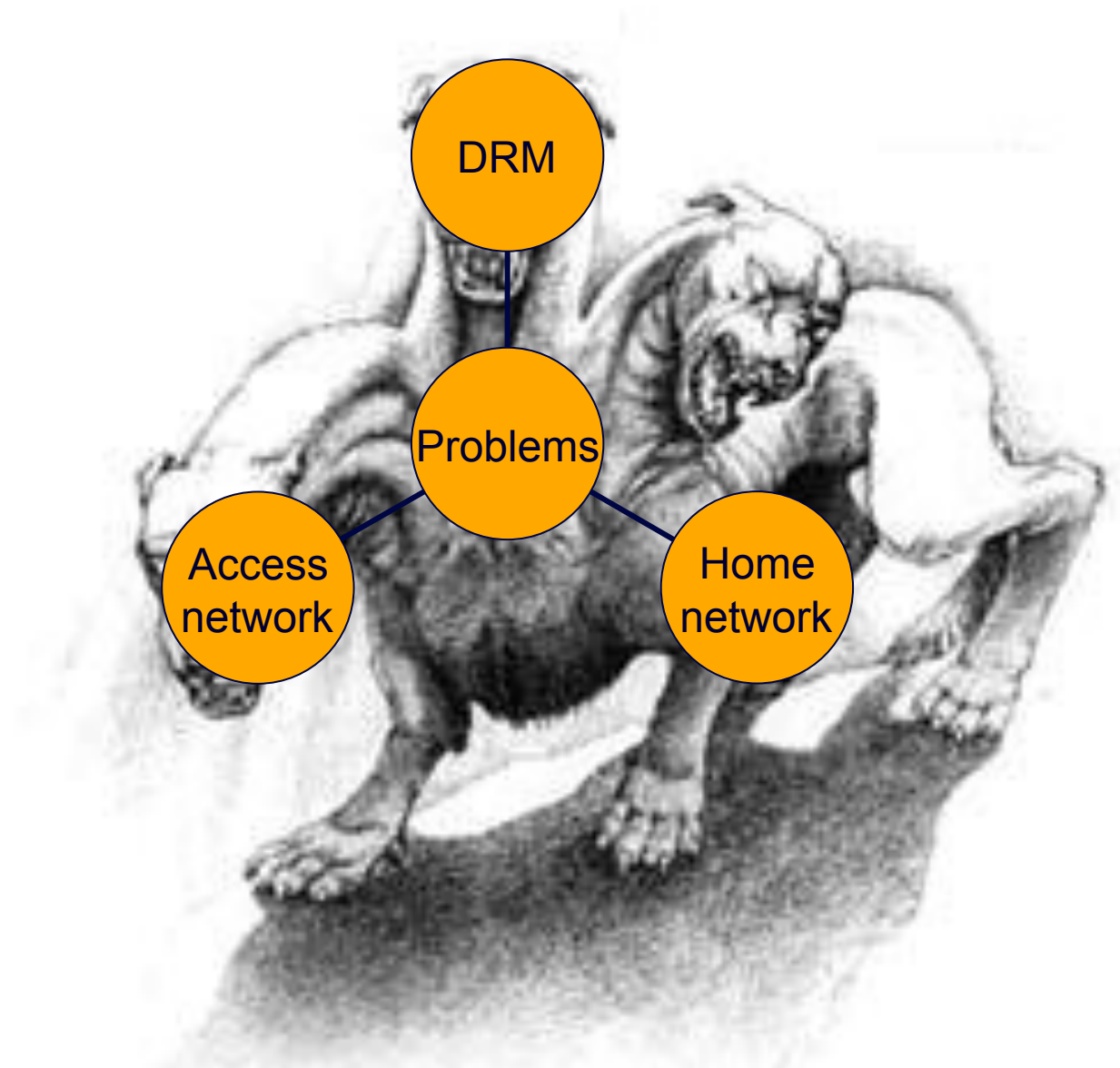
DRM

- Macrovision cracked long ago
- iTunes Fairplay cracked
- WM-DRM cracked
- Nature will find a way

What are we actually trying to achieve?

1. Is the task to create an electronic way to prevent people from copying and distributing copyrighted content?
2. Is the task to stop the behaviour of copying and distributing copyrighted content?

- DRM is a speedbump to make it a decision to break the law
- It will only gain the public's acceptance when it allows interoperation between devices and operating systems
- More effort should be put to raise public understanding that copying and sharing commercial movies, TV shows and music is the same as shoplifting – make it socially unacceptable

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Home networking: the issues

- Phone socket / DSL hub is not where broadband is required (the main TV)

- People now have more than one use of broadband (PC, Mac, XBox360, STB, home monitoring etc.)

- UK homes have few internal networks already

- Home network must be secure from neighbours

- Video requires high bandwidth and it needs to be guaranteed (at least 2M for SD and around 10M for HD)

- The cost of bandwidth into the home: to the viewer, the ISP and the content distributor

- Technologies avilable include: wired ethernet, HPNA (phone line), MoCA (coax), WiFi 802.11n, Ruckus (smart antenna) and powerline (DS2, Intellon)

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Access network: it's all about bandwidth

**Which is the cheapest way
to deliver a movie?**

The Access Network Problem

- Peak TV viewing coincides with peak web surfing on consumer broadband networks

- Price to the ISP based on size of pipe needed to meet contended peak demand (6pm to 10pm) for web surfing

- Must offer Quality of Service (QoS) for the delivery of TV over IP at peak

- Customers believe they bought up to 8M or 16M or 24M when in reality they bought a peak throughput of around 300-400Kbps

Solution number 1
Reduce picture quality to lower the bitrate

Solution number 2
Implement a network QoS mechanism to guarantee throughput for television quality

If you are a third party service provider then should you care?

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The solutions at BT Vision

DRM
- We are managing customer identity and content rights at the server while each device has its own encode and DRM
- Not the target customer experience but as good as it gets today…

Home networking
- Trial of 200Mbps powerline proved great plug and play customer experience
- Currently the best cost vs technical reliability solution

Access Network
- Content Distribution Network (CDN) located at the edge of the access network at ten locations around the UK broadband network so traffic stays on net
- Control of the viewing device (the STB) gives us the opportunity to manage the Access Network bandwidth charges by downloading using best efforts in advance
- "NP-ADQ" is Advanced Services – a productised service from BT Wholesale
- Creates a fixed bandwidth pipe (1.6M) across the Access Network for the duration of the movie

Questions?