



Delivering Mainstream Entertainment over IP

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Delivering mainstream entertainment over IP



Who wants to play?

iTunes movie store

Google Video

BBC

YouTube

Lovefilm.com

BT Vision Download Store

What's the problem?

- People think that the internet is free (compare this to mobile services where people expect to pay for services that have value)
- Perception that streaming video over the internet is easy, had been around for ages and it works
- Internet was built for resilience of data services and not for the guaranteed quality of service required by television
- 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



So you are trying to deliver a mass-market commercial product, using high-end technology on a network that was not built for quality to people who expect television to just work

The Cost of Bandwidth

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



The Cost of Bandwidth

- Consumer broadband products provisioned (and priced) for legacy web surfing
- Peak web surfing coincides with peak TV viewing
- Price to the ISP based on size of pipe needed to meet contended peak demand (6pm to 10pm)
- Outside peak, the bandwidth is effectively free for the ISP
- Download limits attempt to manage this... and they are enforced

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

- Your bandwidth bill will be significant
- Your customer's bandwidth bills will be significant
- At peak your customer's download times will be significant

The Cost of Bandwidth

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



Ensuring Quality of Service (QoS)

- Web page is typically 10s of Kilobytes and can be delivered over a few seconds (“best efforts”) hence requires 10Kbps
- Streamed broadcast quality video comes in at a minimum of approximately 1.5Mbps
- QoS means that every frame, each and every one, is received and displayed without glitches, freezes, buffering or delay

“But I bought 2M, up to 8M, up to 16M, up to 22M from my ISP!”

- Yes! From the exchange to your house and only if you live on top of the exchange
- From the exchange to the internet you are **CONTENDED** (at best this is 50:1 for consumer products)
- How is it possible to guarantee the 1.5Mbps you require from your video servers wherever they are to the exchange?

Protecting the content (or whither DRM)

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

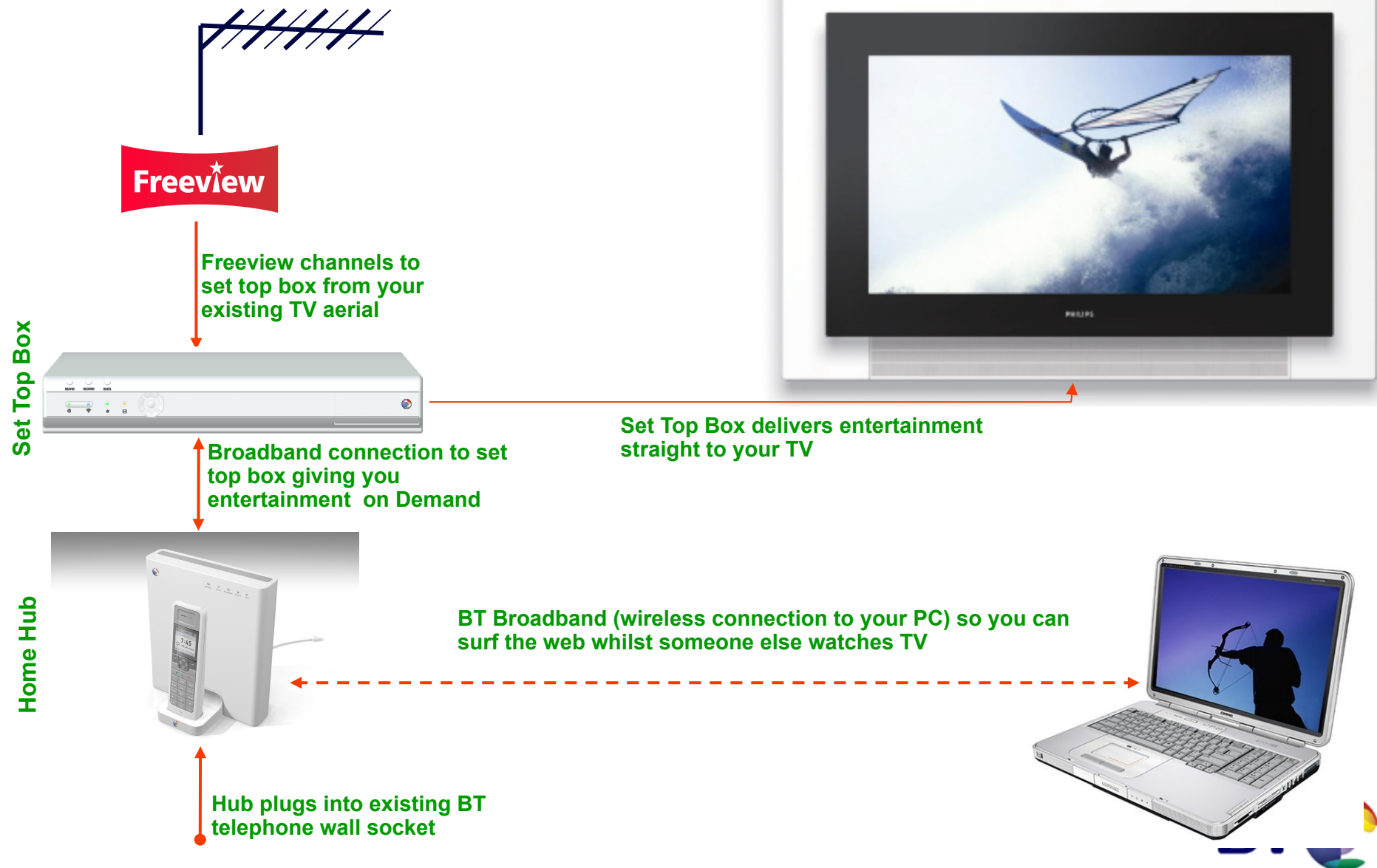
What are we actually trying to achieve?

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
- 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

The solution: BT Vision



The Proposition: Entertainment On Demand

Last 7 Days

- Selection of programmes from the BBC
- *Free of charge* from up to 7 days following their original broadcast e.g. Eastenders, Panorama, Planet Earth

TV

- Huge range of Drama, Comedy, Lifestyle and Documentaries.
- From classics like Porridge to cutting edge drama like the Sopranos.

Music

- Individual songs or playlists e.g. The Best of Madonna, Smooth Soul, Guitar Anthems

Kids

- Educational and entertaining programming from Bob The Builder to curriculum-based learning.

Films

- New blockbusters, world cinema and classics

FA Premier League

Near Live rights for football starting in season 2007/8



The solution: BT Vision

Cost of bandwidth

- Content Distribution Network (CDN) located at the edge of the access network at ten locations around the UK broadband network
- No open internet charges for the distribution of this content
- 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

Quality of Service

- “NP-ADQ” is Advanced Services – a productised service from BT Wholesale
- Creates a fixed bandwidth pipe (1.5M) across the Access Network for the duration of the movie
- Available to all BT Wholesale ISPs over the Access Network

DRM

- STB contains a chip: the SoC
- The SoC contains a security certificate
- The security certificate is validated against the viewer's broadband line
- The viewer's broadband line is validated against their account identity
- The content is validated against the account, the broadband line, the STB, the SoC

The solution: BT Vision



	BT Vision	Third Party
Trusted billing relationship	Existing long-lasting billing relationship	New billing relationship required
Technical Quality of Service (QoS) for the delivery of entertainment	QoS can be guaranteed at a network level	QoS not guaranteed but fakable in software
Customer convenience	Can aggregate content from multiple suppliers in one place	Customer pushed to multiple SPs for breadth of content
Use of technology to make the service simple for the mass market	Can bring together range of technologies to create desired end-to-end customer experience	Often tied into technology IPR which is not necessarily focussed on end-to-end customer experience
Customer support	Existing customer support systems can be reused at lower incremental cost	New SPs must set up new customer support - at high cost

Questions?