On Factors Affecting the Usage and Adoption of a Nation-wide TV Streaming Service

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CD-GAIN: EPSRC project in collaboration with BBC R&D, http://bit.ly/cd-gain

Some Figures

CISCO Visual Networking Index

- **Video traffic** is predicted to reach 79% by 2018

- Three-fourths of **mobile traffic** will be video by 2019

…which Raise Some Issues

User Experience

Infrastructural Support

Business Models

Data-driven Analysis

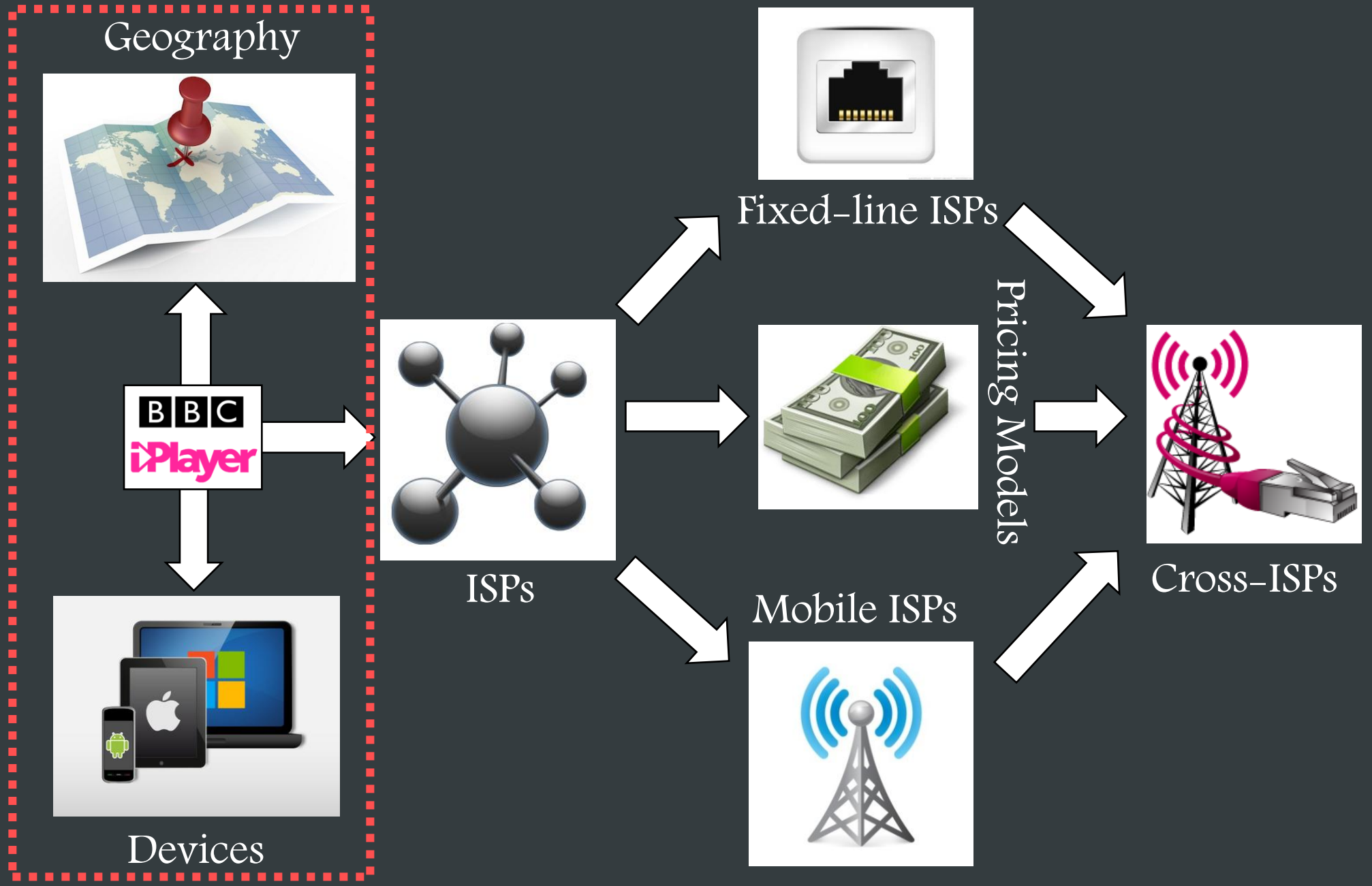
BBC iPlayer

2 x [INFOCOM'2015], [WWW'2013]
2 x [Under Submission]

- Sessions – 1.9 Billion
- May 2013 – Jan 2014
- Users – 32 M/month
- IP address – 20 M/month

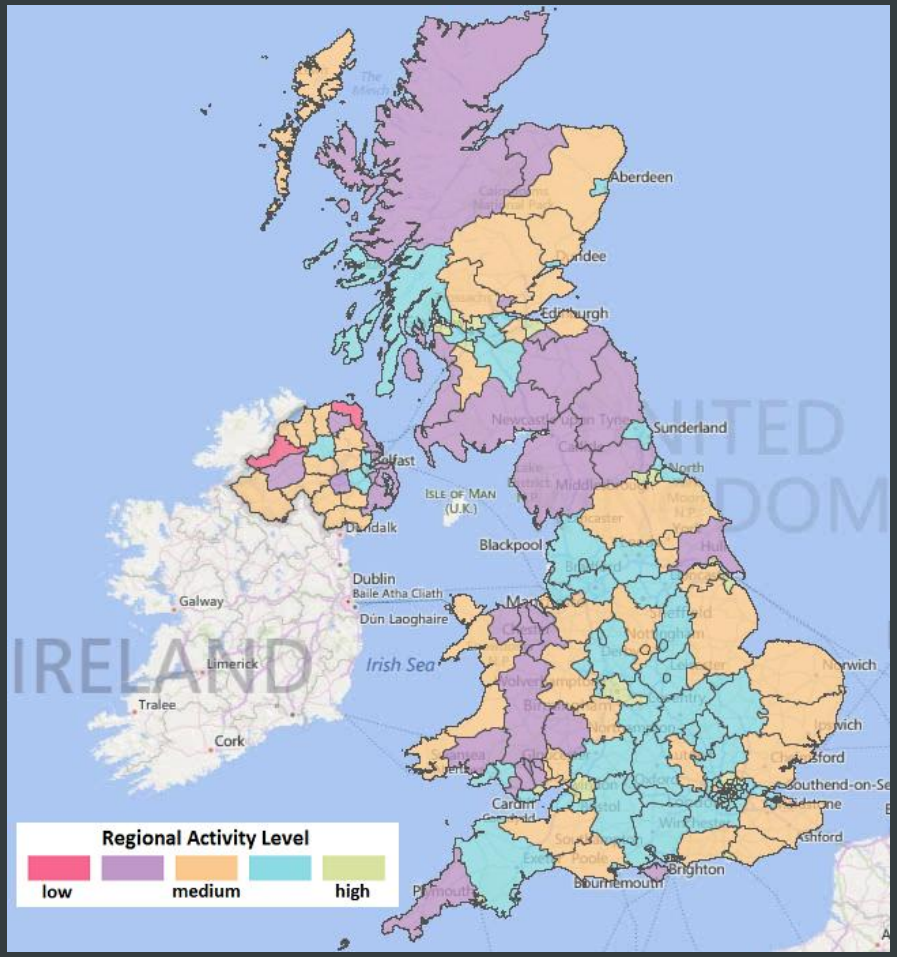
≈ 50% of the UK population

Roadmap

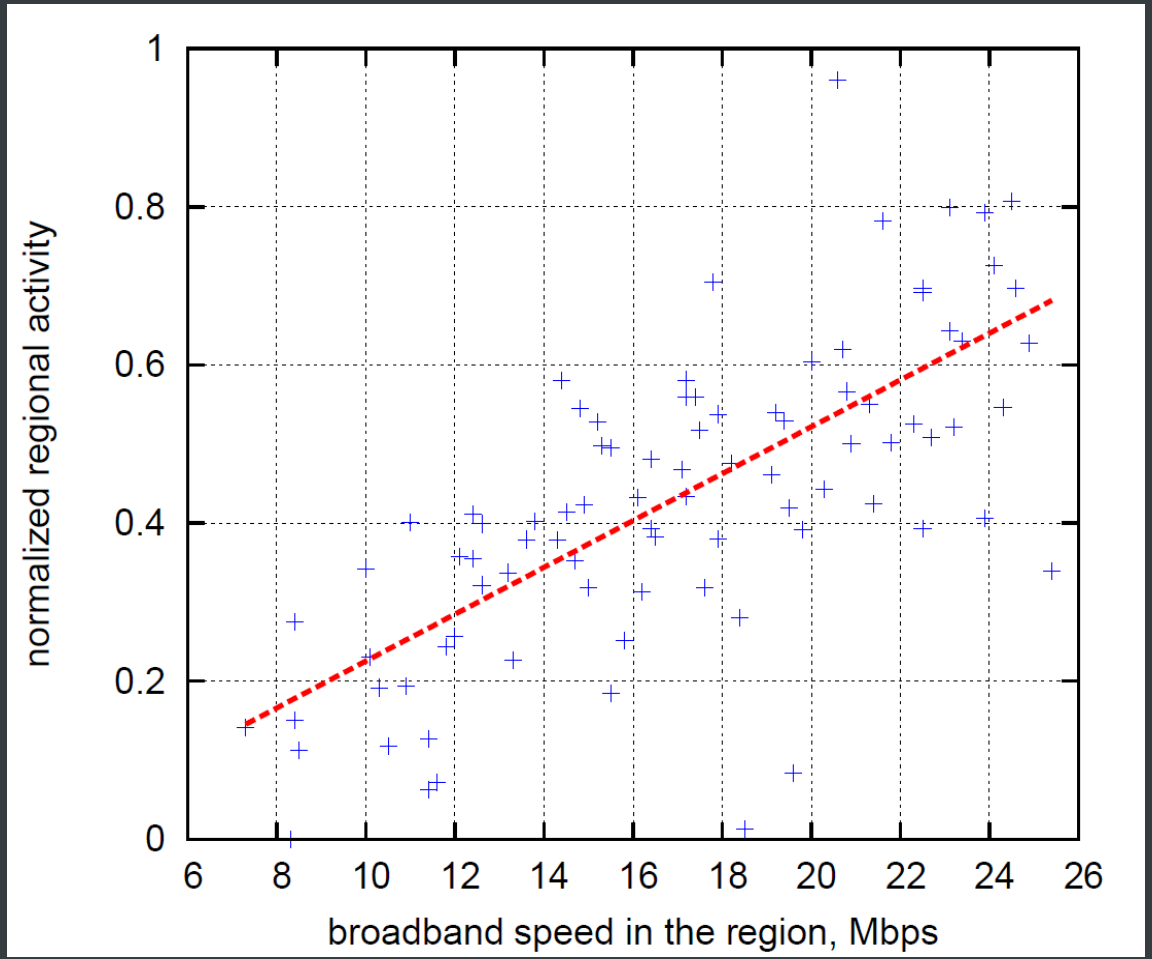

Geography
BBC iPlayer
Devices
ISPs
Fixed-line ISPs
Mobile ISPs
Pricing Models
Cross-ISPs

Geographic differences

Average per-user # sessions



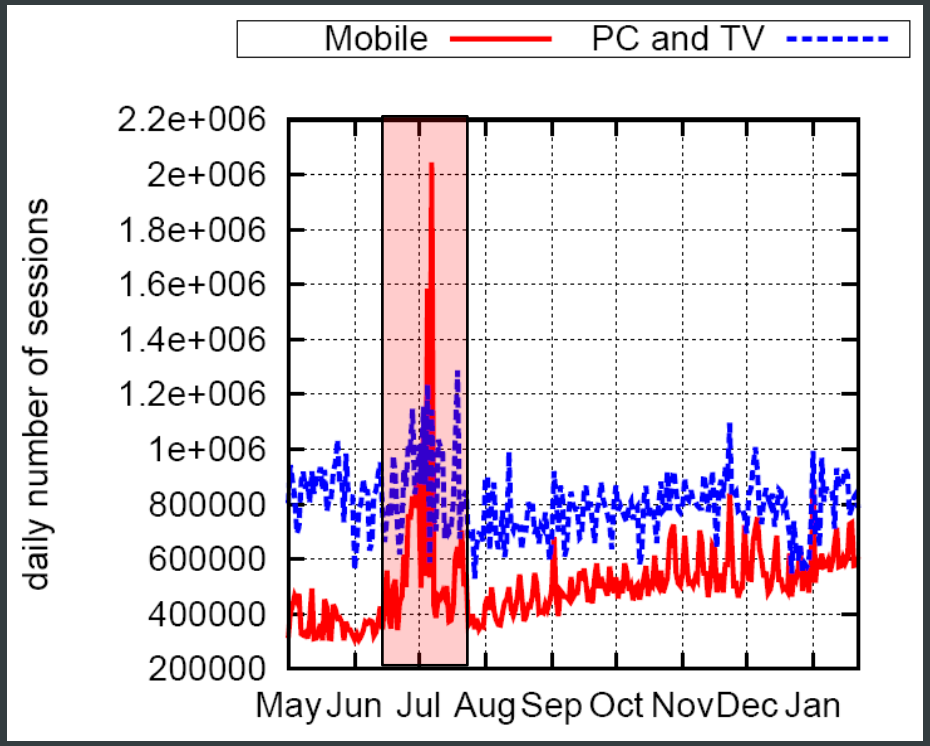
Correlation with Ofcom statistics



Infrastructural support is important

Device-specific differences

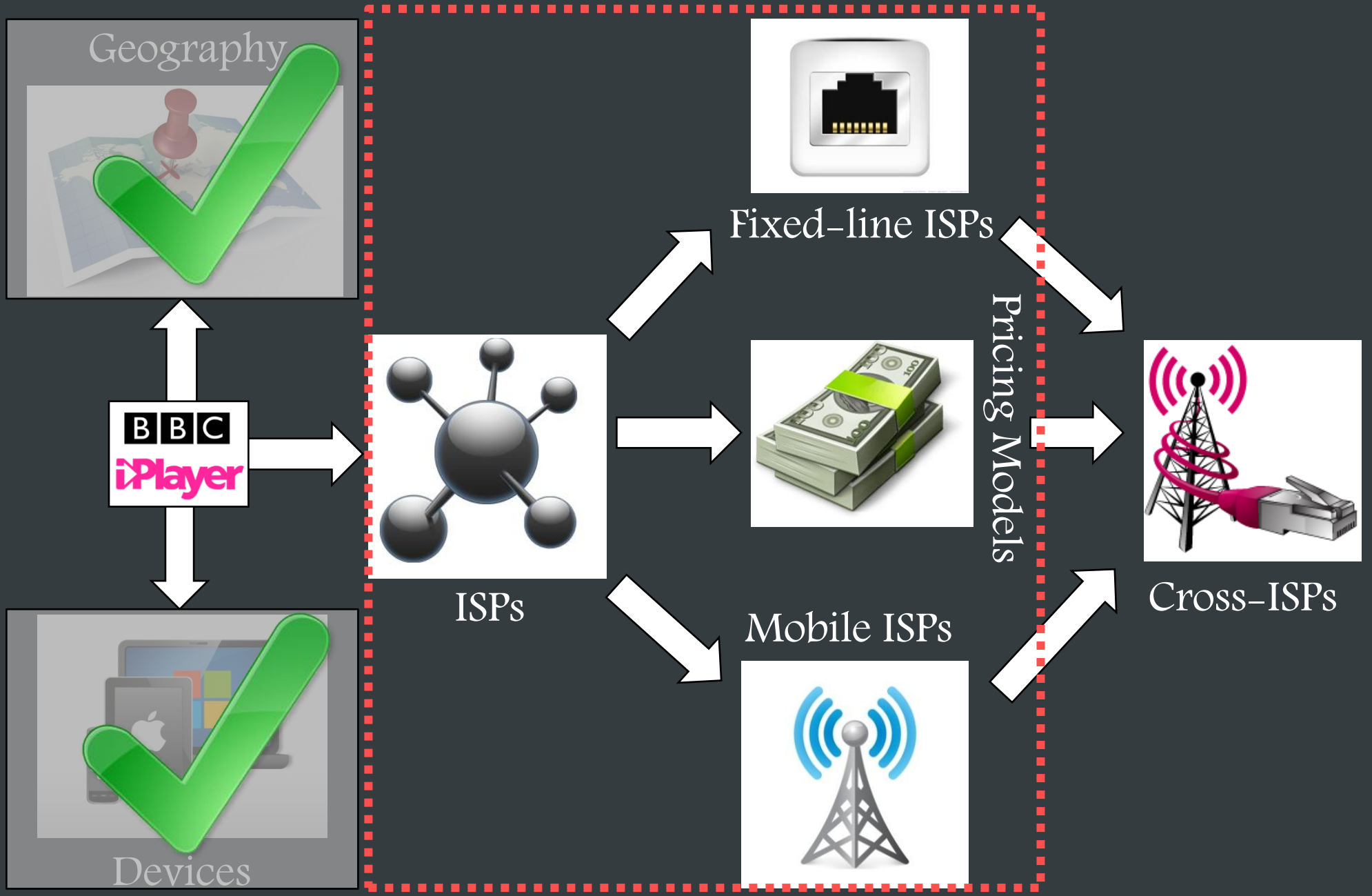
Daily volume of Live accesses



… jumps for mobiles during Wimbledon

Mobile consumption is affected by external events

Roadmap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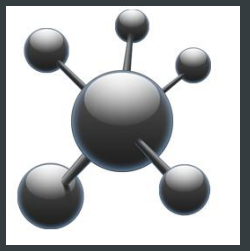
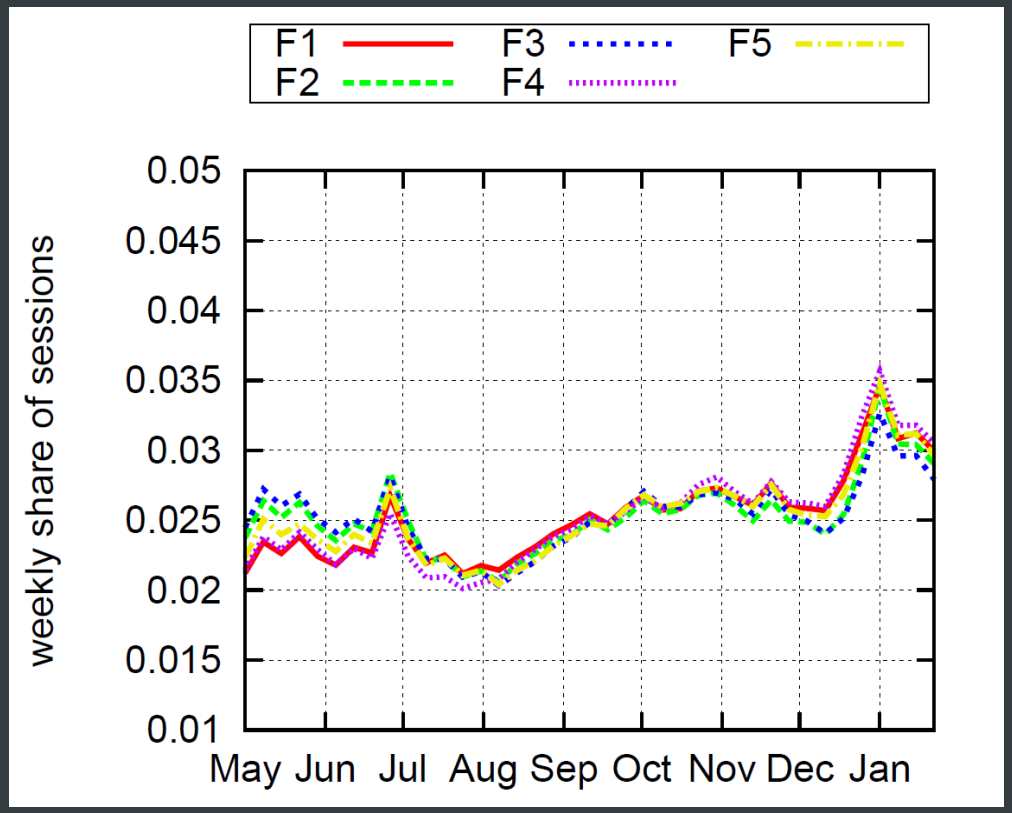
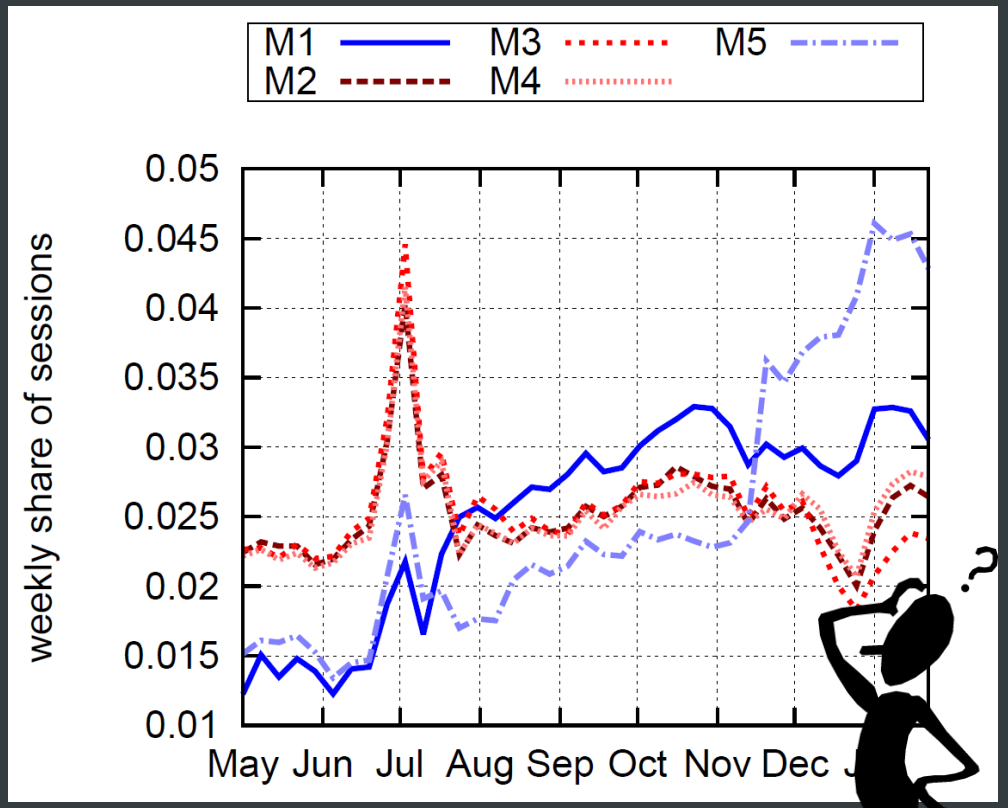
ISP-level view



Fixed-line Internet market (5 representative providers)



Mobile Internet market (5 representative providers)

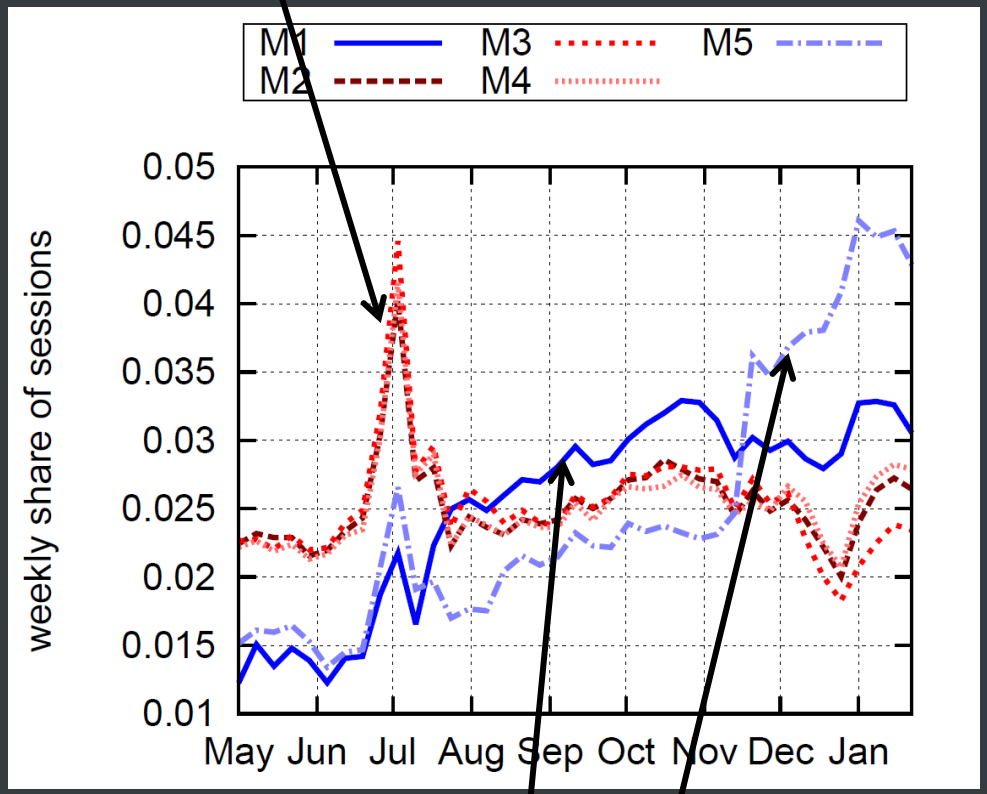


Mobile market is more dynamic than the fixed-line Internet market

Pricing Models

Limited-cap data packages

(M2 – M4)

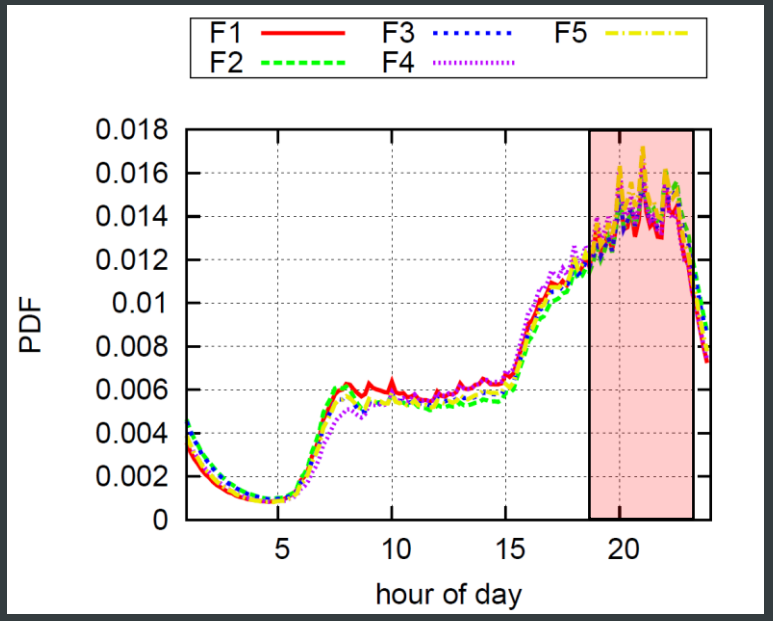


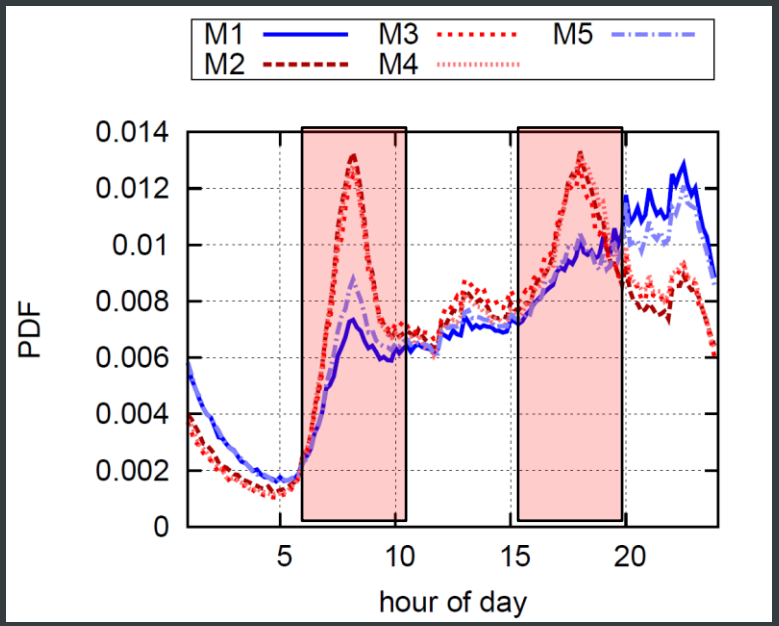
All-you-can-eat data

(M1, M5)

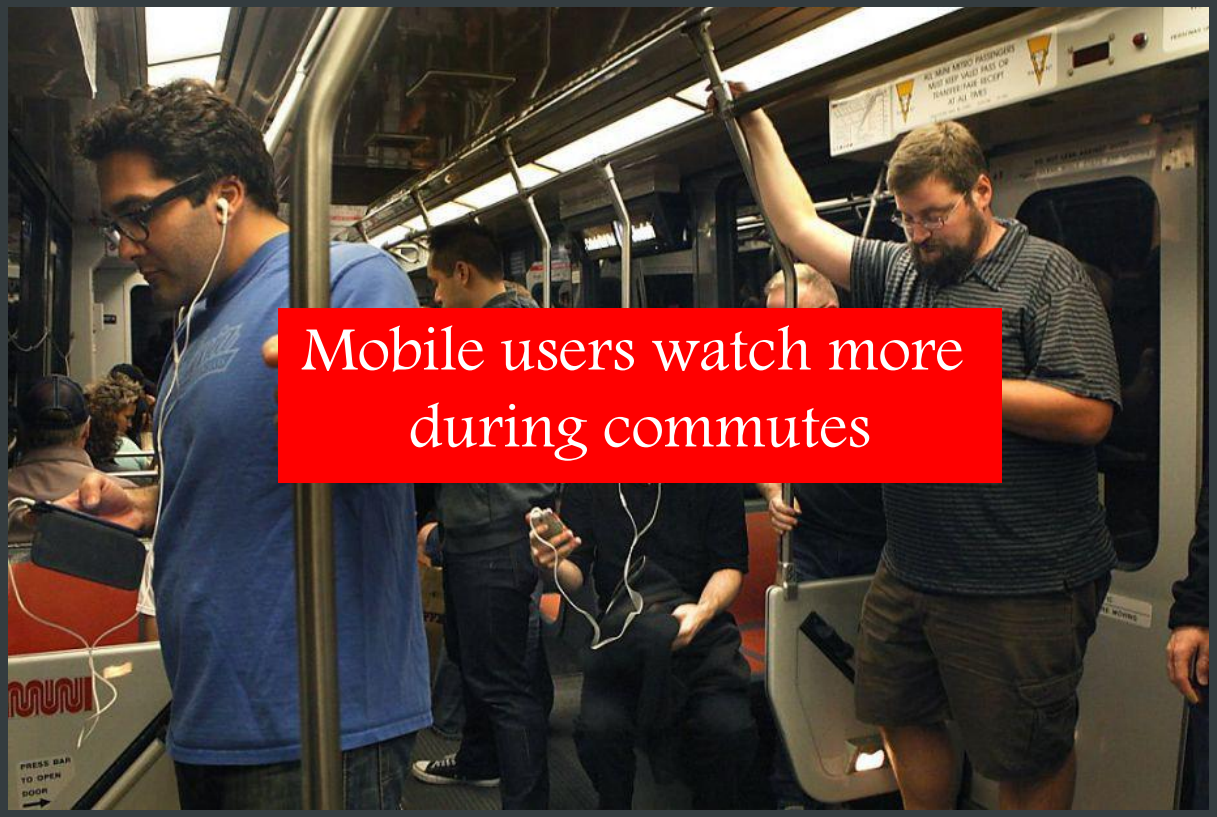
All-you-can-eat plans boost users' consumption

Behavioral Shift



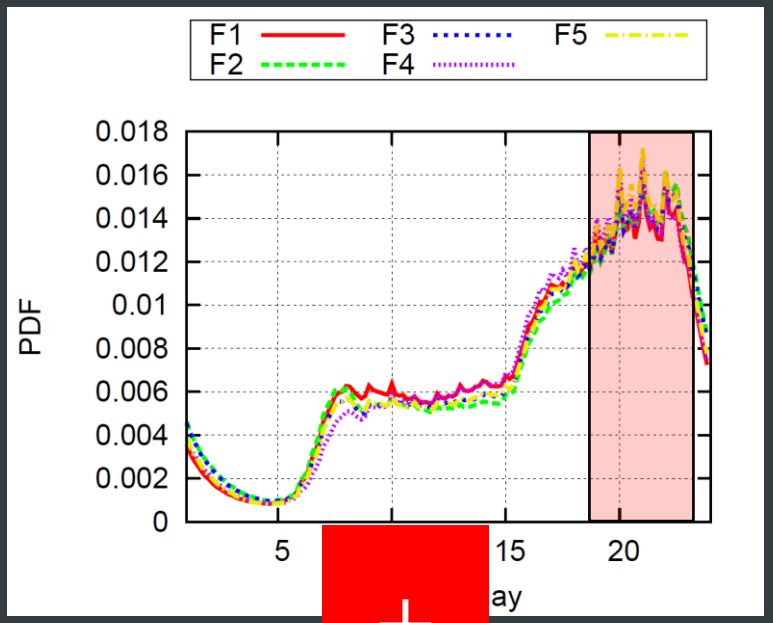


- Fixed-line accesses (F1-F5) peaks in the evening



- Limited data caps (M2-M4) peak in commute hours

Behavioral Shift



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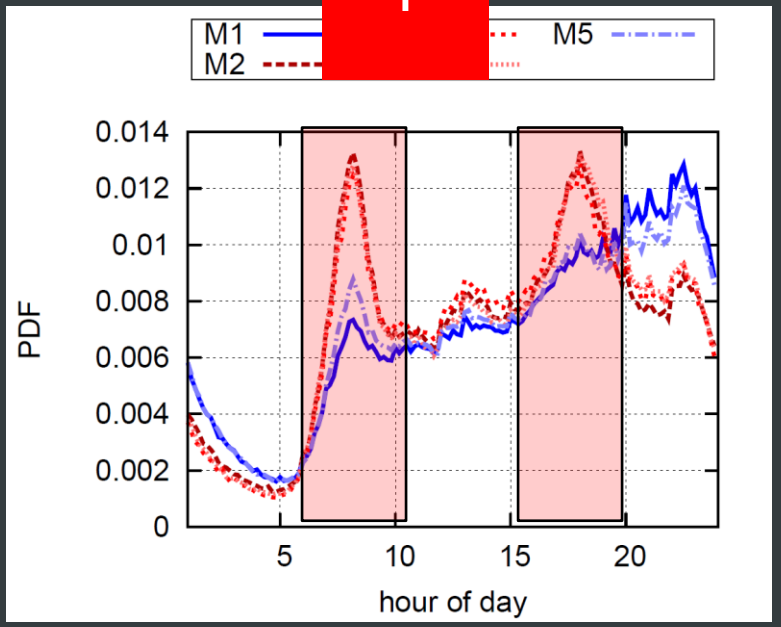

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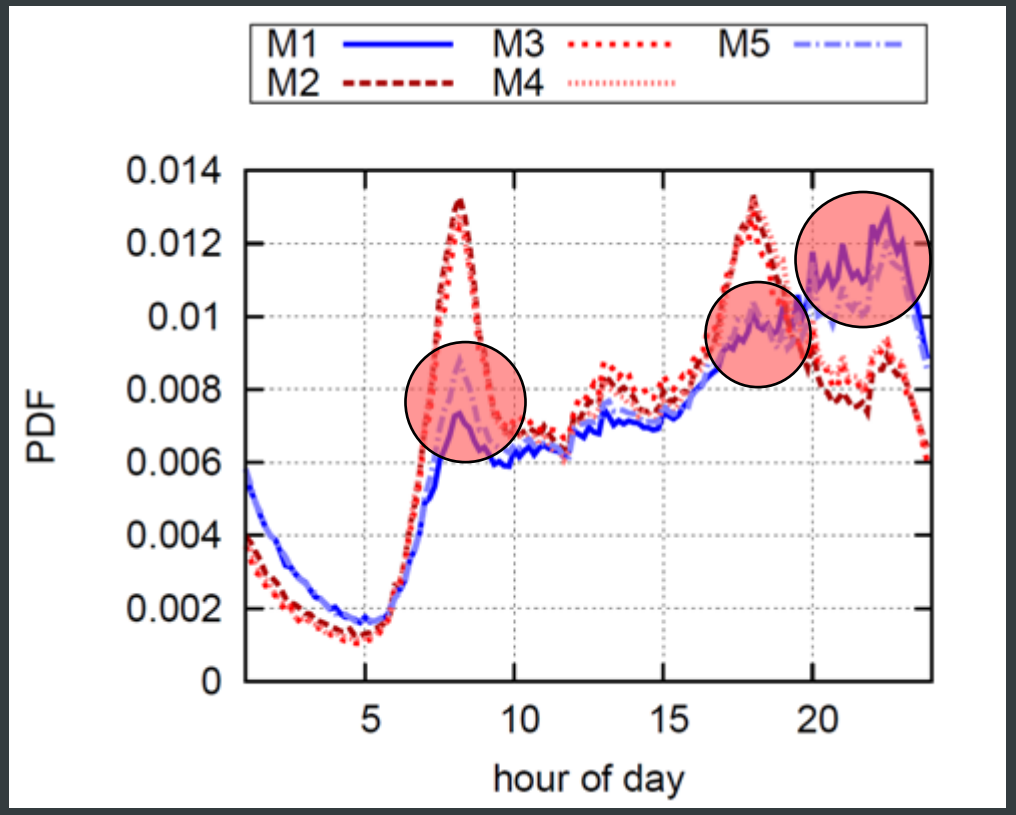
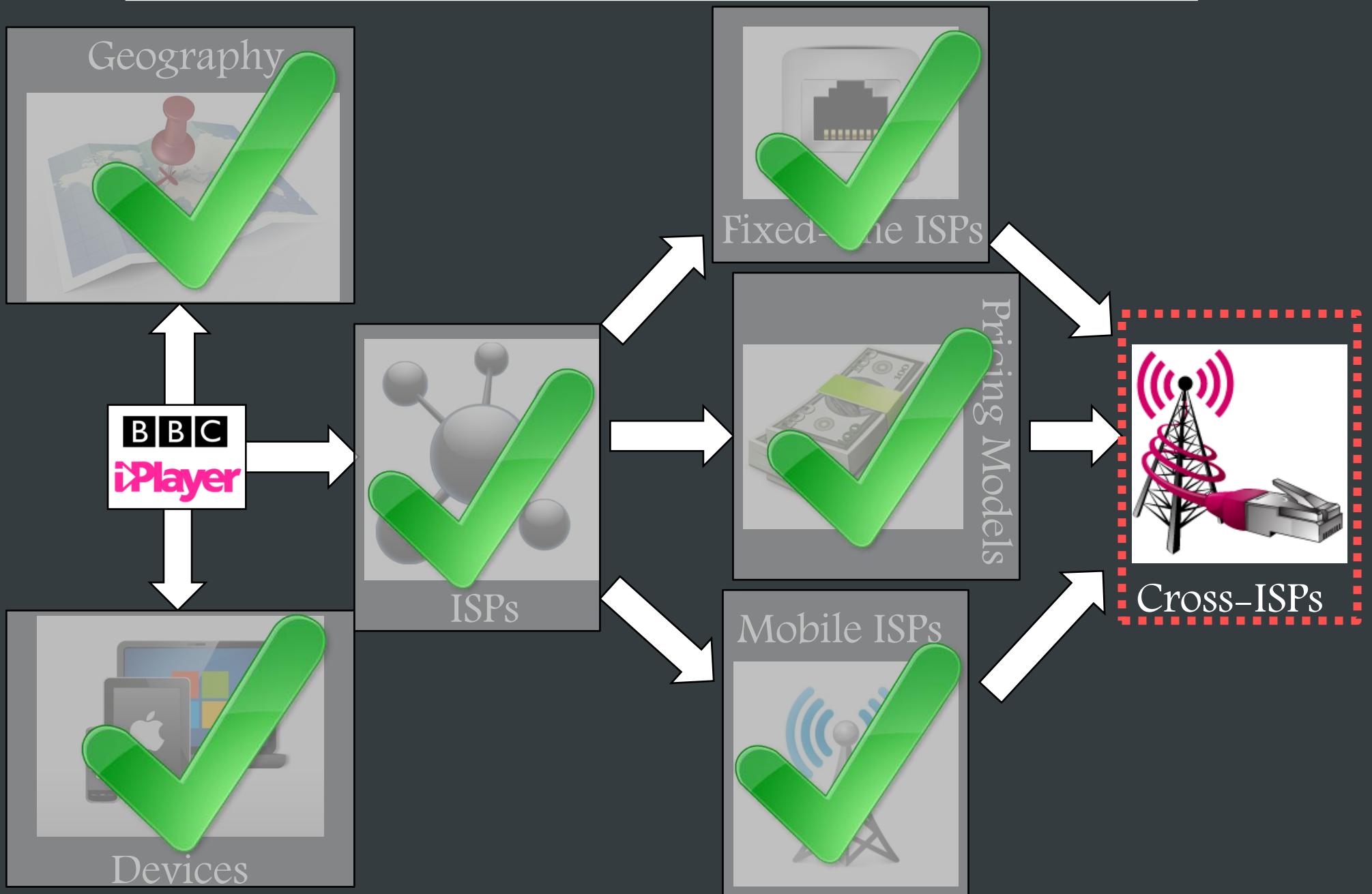


Unlimited data plans (M1, M5) is a superposition of both

Roadmap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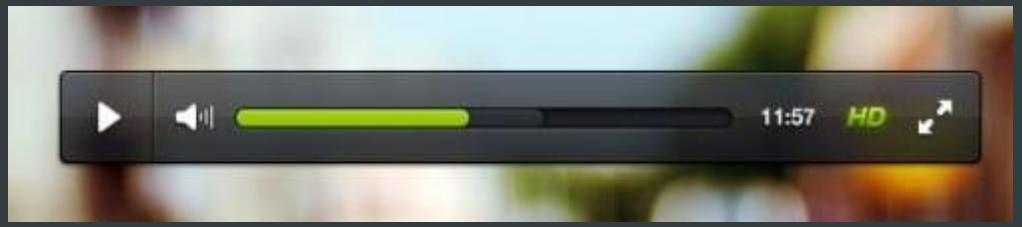
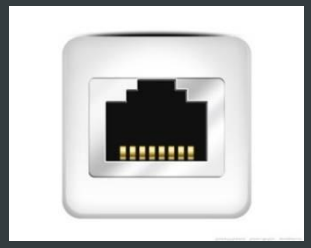
Cross-ISPs watching patterns

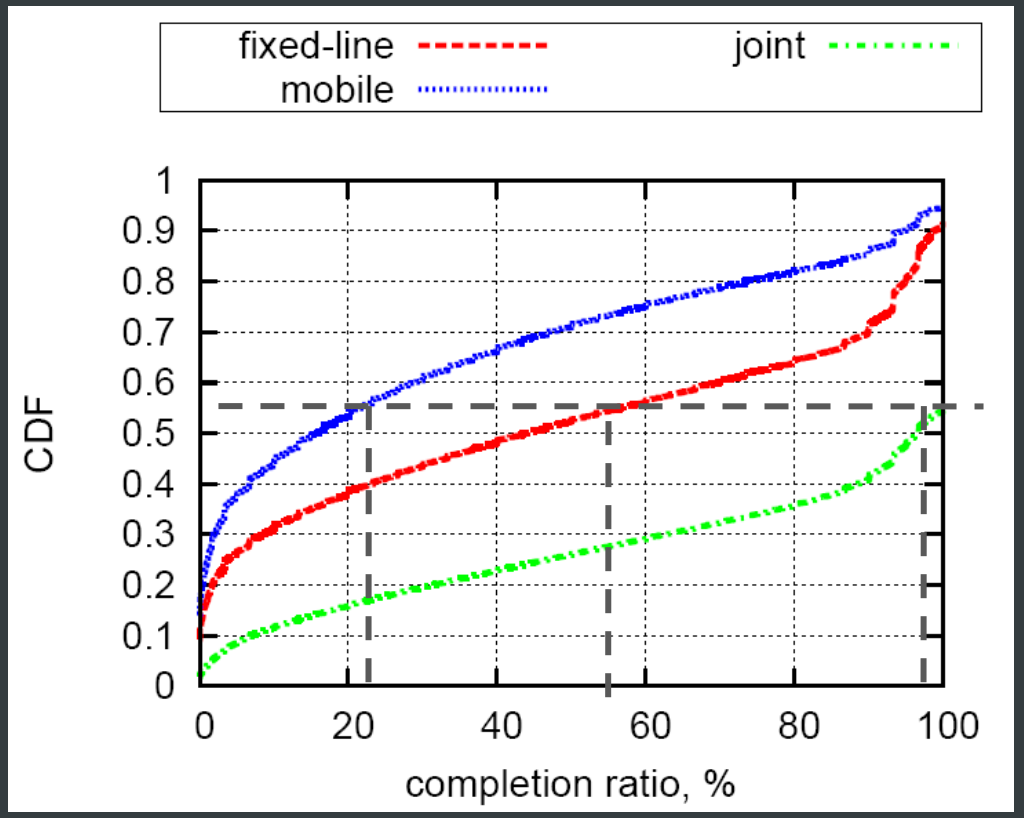




Fixed-line ISPs

Mobile ISPs

Completion across different ISPs

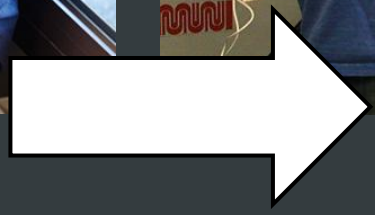


Users complete watching across different sessions and networks

Speculative Content Pre-fetching

Pre-fetch at home

Watch during commutes



Speculative pre-fetching can save up to 50% of mobile traffic

Conclusion

Infrastructural Support

Business Models

User Experience

- user engagement depends on the level of infrastructural support
- … as well as on pricing models
- and there is a lot potential for mobile content pre-fetching

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UKNOF

Our website:

http://bit.ly/cd-gain

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