

# Spectrum Policy - finding some Middle Earth (or middle ground)

Jon Crowcroft  
The Computer Laboratory  
University of Cambridge  
<http://www.cl.cam.ac.uk/~jac22>



# Licensed and unlicensed spectrum

- Incumbent license owners sunk cost in thin air
  - Associated with use though are a lot of other values
    - Access control, location, billing, backhaul
    - Real estate (masts, base stations, power/resilience)
    - RF propagation map information
- Open WiFi community have viral growth potential
  - Associated are a lot of problems
    - Early adopters cooperate
    - later we add selfish users and miscreants - will need help!
    - Network deployment needs some more design



# Seamless

- Assume we can share RF resource between them,
- there is a lot of synergy in the infrastructure
  - Need Map info (c.f. apple:)
  - Need mint and key distribution
  - Need reference points for location data
  - Need access to backhaul (see results from our work with Intel)
  - And access to content storage (cheap, but needs resilience with provisioning - not something P2P knows how to do yet)
  - [Note assumption that community wireless net and P2P style application design go hand-in-hand]



# Several case studies of inevitable unlicensed radio services

- Taxi Dispatch
  - Replace expensive radio license
- Shopping Mall
  - Share info about shops
  - Similar schemes for tourist info services
- Commuter Gaming
  - Most new portable game consoles have wifi
  - Commuter Service companies (e.g. London Buses) put in Aps (e.g. at stops) and use for other things (driver safety surveillance)
- Traffic Awareness
  - See above - and no one is going to pay for this!



# Business Case/Value Proposition

- So often, I get told by ISP or Cellular operator, “There’s no business case for that”
- Well, let me tell them - they said there was no business case for IP and for SMS, so they know very little about business cases
  - Build it and the business case will come, or
  - If you don’t build it, you won’t have a business at all
- But mainly, like PSTN companies:
- Move up the value chain (like Sky) or you are dead.



# Questions?

- Not about business cases though:-)

