“...and ask ‘Why not’”? 

Observations on Communications Policy and Economic Growth

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“Some men see things as they are and ask 'Why?' I dream things that never were and ask, 'Why not?'”

Robert F. Kennedy, 1968
Why are these companies American?

These marks are shown for illustration only. MSS has no connections with any of these firms.
Outline

• Macroeconomics of Telecom
• Why Qualcomm is American
• Radio technology is Different
• Lessons from FCC for Ofcom: The good, the bad, and the ugly
• Conclusions
Macroeconomics of Telecom

• Telecom is a large industry in its own right
• Telecom is a basic commodity in today’s economies
  – its cost and efficiency can enhance or decrease national productivity
• New information/telecom services can enable whole new industries
  – If not forbidden by overprotective regulations
Macroeconomics of Telecom

• Unfortunately, spectrum management - a key aspect of telecom policy - remains the closest thing to Soviet economic planning -- this side of Belarus

• Companies and individuals that are bastions of capitalism often believe spectrum needs can be predicted and services planned a decade in advance
Macroeconomics of Telecom

• Some basic laws of spectrum economics:
  – Free spectrum is always cheaper than technology-based efficient spectrum use
  – Existing spectrum users have no incentive to accommodate new users or applications
Qualcomm Case: Why Qualcomm is American

- In the 1980s spread spectrum/CDMA was generally assumed to have no civil applications
- Cellular technology was seen as a consensus standards process
- FCC exploration of removing barriers to CDMA and deregulation of 2G standards enabled creation and growth of Qualcomm
Lands’ End and Gateway:
What does this have to do with telecom?

- Land’s End and Gateway both founded in the 1970s in rural areas
- Both were founded on new business models
- Deregulation in telecom and transportation enabled this job creation
  - Low cost telecom allowed orders to flow to rural areas - at first 800 numbers, then Internet
  - Low cost transport allowed products to flow to customers quickly
Broadband and Economic Growth

• Internet and broadband can enable economic growth in new markets unrelated to telecom by enabling new business models.
• But this can only happen if the underlying economy has enough deregulation to permit such models.
• In highly regulated economies, economic growth potential is much smaller.
  – Why isn’t Amazon Japanese?
Radio technology is Different

• Innovation in technology requires
  – An idea
  – Investment capital to develop it
  – Marketing

• Innovation in radio technology is inhibited by the all pervasive nature of radio regulation in most countries
  – Investors must consider
    Technical risk + Market risk + Regulatory risk
Radio technology is Different

• Alternative high tech markets have fewer risks
• Deregulated environments may be more attractive to investment capital
• Thrust of FCC radio policy in past 2 decades was to “avoid picking winners and losers” in both technologies and companies
  – Get out of the way of progress, don’t dictate it
Unlicensed - The Safety Valve of a Highly Regulated Industry

• Unlicensed systems can provide a way for unrecognized needs to be met without a lengthy planning process
  – FCC Docket 81-413 decision in 1985 spawned Wi-Fi plus a variety of other systems such as 5 GHz point-to-point links for cellular base stations that could be installed quickly
Unlicensed - The Safety Valve of a Highly Regulated Industry

• Role of unlicensed may increase as a growing proportion of radio systems need only short range

• Classic radio regulation is based on long range communications
  – Is licensing really needed for 60 GHz where physics limits range?
White Space Problem
Traditional Spectrum Regulation Results in Lots of Holes

Atlanta
New Orleans
San Diego

Communications Future Program, Cambridge University 6/29/05
Unlicensed
The Promise of Cognitive Radio

- Cognitive radio may permit positive use of white space
- FCC Docket 04-186 - Unlicensed use of TV band
  - Proposes unlicensed low power use of TV band white space
  - Attracting lots of opposition
  - Positive proposal or “A Bridge Too Far”
Lessons from FCC for Ofcom:
The good, the bad, and the ugly

• US is virtually unique in segregating military spectrum management away from FCC and isolating it from such pressures
  – Military organizations always have an insatiable demand for free spectrum even though they pay for other commodities
Lessons from FCC for Ofcom:
The good, the bad, and the ugly

• The real problem with spectrum management in the US
  – NTIA is dominated by the military and defers to IRAC members on most decisions
  – FCC commissioners are selected for their views on broadcasting and telecom rates
    • They select personal staff to deal with these
  – Decision making mechanisms within FCC are designed to deal with highly politicized issues and don’t function well with technical policy issues
Conclusions

• Communications, especially radio, can make a large input to economic growth
• As in other industries, less regulation is really better
• Marketplaces can really work
  – Do not focus on European 3G fiasco, understand why it happened
“...and ask ‘Why not’ ”?

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