
Spectrum Management Reform — International Developments

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Why have spectrum reform?

- Pressures on traditional command and control regulation
 - Pace of change in both market and technology
 - Growing demand puts pressure on spectrum
 - Growing commercial importance of radiocommunications services
 - Convergence
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The 'twin peaks' of reform

2 main spectrum reform themes :

- Liberalisation
 - Introducing market mechanisms into spectrum management
 - Flexibility
 - Relaxation of constraints on spectrum use
 - Europe talks about twin themes of harmonisation and flexibility
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LIBERALISATION

- Auctions the harbingers of liberalisation
 - More recently focus has been on:
 - Pricing;
 - Trading; and
 - bringing government spectrum within the market system
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FLEXIBILITY

- Command and control regulation locked in particular uses in particular bands
 - This is largely incompatible with spectrum liberalisation
 - New technologies mean that it is no longer necessary to dedicate specific bands to specific technologies
 - Key issues: spectrum commons; new interference protection paradigms; greater spectrum sharing
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Key issues in spectrum reform

- Commons versus market approaches
 - How much spectrum to allocate to the commons?
 - Spectrum sharing
 - New licensing techniques to facilitate sharing
 - Government spectrum
 - Digital dividend: how to get it and what to do with it
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The market paradigm

- Major reform theme has been recognition that market forces need to play major role
 - UK “strong preference” towards market forces
 - US move to more flexible and market-oriented regulation models
 - Canada relying on market forces to the maximum extent feasible
 - H K inclination to use a market-based approach
 - NZ underlying assumption that market mechanisms will ensure spectrum is allocated to highest value use
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Spectrum Pricing

- UK the leader in Administrative Incentive Pricing (AIP)
 - Singapore: IDA looking at setting fees in congested bands on opportunity cost
 - Hong Kong spectrum utilisation fee may be set to reflect opportunity cost
 - Japan introduced radio usage fee based on economic value of the radio waves
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Spectrum Trading

- Spectrum trading of remains a difficult issue for spectrum managers
- US Secondary markets initiative to facilitate spectrum leasing and transfers
- UK falling behind aim of implementing spectrum trading in 72% of the spectrum. Ofcom plans to investigate how to facilitate trading in 08/09
- Hong Kong, Singapore reluctant
- European debate and recommendations slow to lead to action to free up markets

Government spectrum

- Government is largest spectrum user, but reform effort has been patchy
- UK radical recommendations of (Cave) Independent Audit of Spectrum Holdings accepted by government
 - Presumption that new public spectrum needs should be met through the market; push to greater sharing
- US: significant re-allocation of spectrum to private use, but government spectrum management retains command and control approach
- Few countries yet charge for government spectrum or allow it to be traded.

FLEXIBILITY

- UK developing technology neutral approach (Spectrum Usage Rights)
 - NZ management rights
 - US moves to free up licensees (e.g. Personal Communications Services)
 - Europe: WAPECS framework for technology and service neutral provision of services
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New concepts

- US: private commons approach (spectrum managers); interference temperature metric
- Underlay and overlay rights
 - Underlay very low power level devices
 - Overlay devices operating when spectrum is not used
- How to regulate for new technologies such as software defined and cognitive radio
- FCC considering spectrum sharing innovation test bed

How does Australia compare?

- Australia holds up quite well (market mechanisms, flexibility of spectrum licences)
 - Lags behind in commons debate, planning for digital dividend, underlay/overlay issue, new auction techniques, spectrum managers
 - Lack of progress on freeing up licensing/interference management and opportunity cost pricing, government spectrum
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