

Presentation to IIC Asia Forum

A perspective on spectrum auctions: when and when
not to use auctions?

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Analysys Mason is a globally trusted adviser on telecoms, media and technology

- Analysys Mason is a trusted adviser on telecoms, technology and media. We work with our clients, including operators, regulators and end users, to:
 - design winning strategies that deliver measurable results
 - make informed decisions based on market intelligence and analytical rigour
 - develop innovative propositions to gain competitive advantage
 - implement operational solutions to improve business efficiency
- With around 235 staff in 12 offices, we are respected worldwide for our exceptional quality of work, independence and flexibility in responding to client needs
- For 25 years, we have been helping clients in more than 100 countries to maximise their opportunities

Assignments completed



Cambridge • Dubai • Dublin • Edinburgh • London • Madrid
Manchester • Milan • New Delhi • Paris • Singapore • Washington DC

We have recently worked on topics that are at the forefront of thinking for leading Asian telecoms and media entities

Mobile

New business opportunities

- Developed a mobile data strategy for a mobile group, assessing big vs. small screen opportunities
- For a retail bank, developed its mobile banking strategy
- Valuation and successful acquisition of LTE licence

Cost rationalisation

- Assisted two operators in developing a network sharing plan
- Bottom-up network cost modelling (including broadband)
- Strategic investor in outsourcing call centre

Fixed and broadband

NGN networks strategy

- Advised an operator on its strategic approach to a new FTTH network
- Technical and procurement review for a large government-supported NGN

Enterprise infrastructure investment and market review

- Assessed the costs and benefits of a lease versus build model for its enterprise fibre network
- Market sizing and growth strategy for managed services

Media and content

New pay TV/OTT business models

- Advised a quad-play operator on the risks from new content business models and strategy to prevent fragmentation of traditional pay-TV distribution
- App store ecosystem development for mobile group

Broadcasting/Content

- For a leading TV broadcaster, defined a vision and strategy to enter content production and distribution
- Business plan development for sports channel for market entry into a large South-East Asian country

Spectrum, policy and regulation

Digital dividend

- Defined the strategy for digital dividend spectrum for a leading regional regulator

National broadband plan policy

- Prepared a national broadband plan to address existing barriers to development of the market – 2 markets

Regulation

- We helped diagnose content exclusivity and its impact on competition for a regulator
- Digital dividend spectrum lobbying support for operator

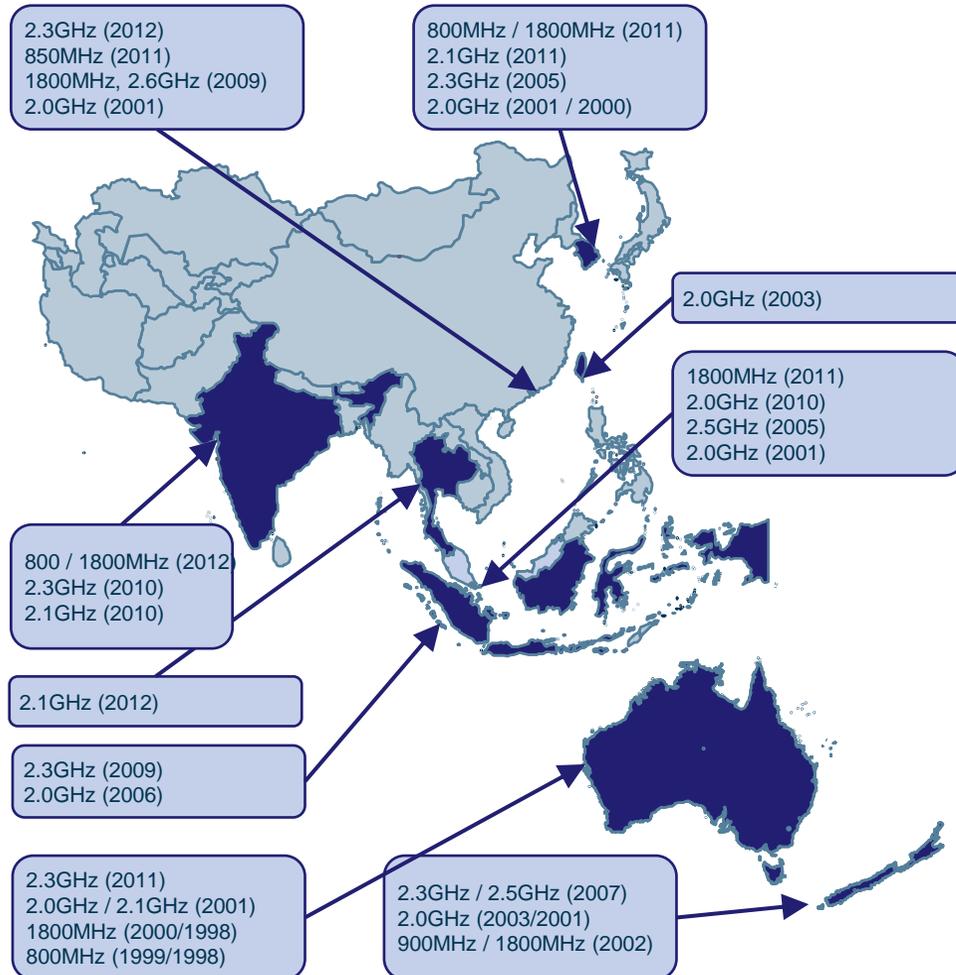
Auctions are a relatively recent way to assign spectrum, but are in many cases superior to alternative options if complexities can be mastered

- Policy makers and spectrum managers are responsible for ensuring that radio spectrum, as a scarce public resource, is used in a way that optimises the public’s requirements and best interests
- A few core principles are now widely agreed upon: transparency, fairness, economic efficiency
- Policy objectives can vary: raising revenue, promoting competition or contestability (entry), service quality and ubiquity

	Administrative assignments	Beauty contest	Auctions
Pros	<ul style="list-style-type: none"> ▪ Easy to implement policy objectives / obligations ▪ Simple / fast / low cost process for the spectrum management entity 	<ul style="list-style-type: none"> ▪ Easy to implement policy objectives / obligations ▪ Can enable competition on non-monetary dimensions (e.g. coverage, pricing) ▪ Process transparency 	<ul style="list-style-type: none"> ▪ Transparent ▪ Fair and economically efficient, if well designed ▪ Can raise significant revenue ▪ Compatible with non-price conditions
Cons	<ul style="list-style-type: none"> ▪ Lack of transparency ▪ Potential for unfair practices ▪ Does not necessarily promote economic efficiency ▪ Spectrum pricing can be contentious 	<ul style="list-style-type: none"> ▪ Criteria may not be transparent / fair ▪ Potential windfall gains for successful applicants ▪ Does not necessarily promote economic efficiency 	<ul style="list-style-type: none"> ▪ Difficult to implement contestability in mature market ▪ Complexity in designing the process and rules of auction ▪ ‘Winner’s curse’, spectrum price can be passed onto consumers if competition is insufficient

In Asia-Pacific, auctions are gaining traction, but recent examples highlight the difficulty to balance competing objectives

Spectrum auctions in Asia-Pacific



Two recent contentious auctions



Thailand

- Oct 2012, 2x45MHz in the 2.1GHz band
- New entry unlikely given the indirect value for existing concession-holders
- Spectrum caps initially set at 2x20MHz, guaranteeing at least three licensees
- Changed at the last minute to 2x15MHz, essentially determining the outcome
- Bid value ended up very close to the reserve price
- In the end, was it really an auction?**



India

- Nov 2012, ca. 2x5MHz in the 800MHz band and ca. 2x15MHz in the 1800 MHz band in most areas
- Designed to remedy issues with the “first come first serve” assignments in 2008, which were considered riddled with unfair practices
- The auction was scuppered by excessive reserve prices, concerns about the regulatory environment, and much of the spectrum remained unsold
- Auctions must be carefully designed and cannot in themselves guarantee a level playing-field**

Well-designed auctions enable price discovery and efficient assignments between bidders where there is excess demand

Objectives

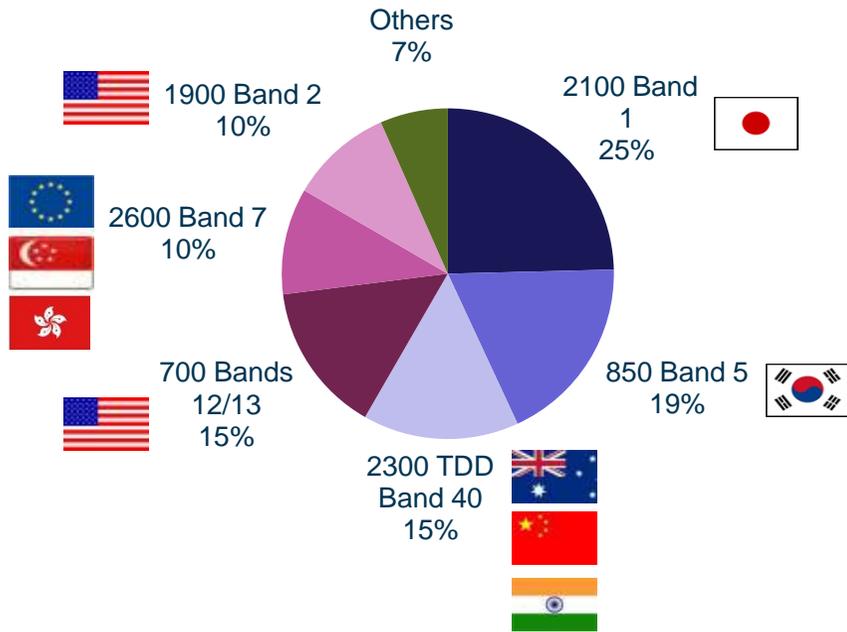
- **Transparency and fairness**
 - Remove connections and political power from the equation (as much as possible)
- **Economic efficiency**
 - Ensure that the spectrum is assigned to the party that values it most
- **Price discovery / managing information asymmetry**
 - Takes the view that economic value is best assessed by market participants

Challenges

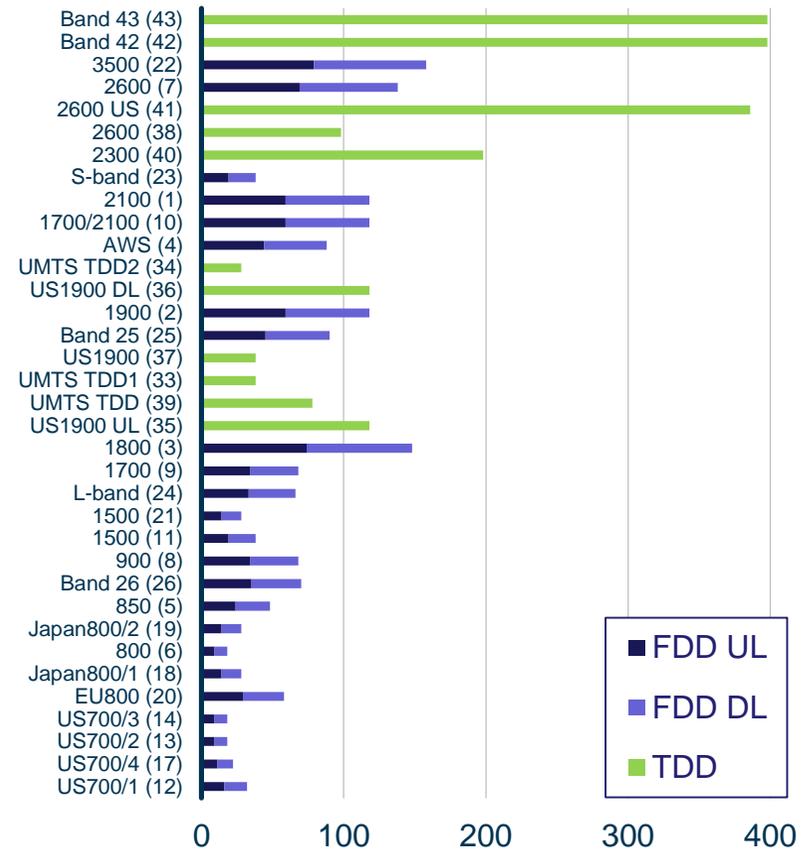
- **Resist lobbying from incumbents**
 - Who (understandably) want to protect their existing business
- **Design the auction well**
 - Ensure that all objectives are fulfilled
- **Ensure all parties understand the rules**
 - To avoid clearly sub-optimal outcomes in complex auction processes (e.g. Swiss big-band auction)

The complexity of LTE-A spectrum provides a useful illustration of how auctions are essential to managing information asymmetry

Today: 6 bands are ~90% of LTE deployments, limited multi-band deployments in each country – still manageable



Tomorrow: LTE-A (3GPP Rel. 11) will use 35 different bands, complementary or overlapping in different ways – not easy!



The two examples mentioned earlier unfortunately failed to fulfil these criteria, and their shortcomings were predictable (and widely predicted!)



Thailand

- Specific situation where the concession regime for 2G made it hugely valuable for incumbent to acquire the spectrum
 - Limited scope for new entry, given this + market maturity
- Spectrum caps:
 - Initially conceived to guarantee three-player market (2 × 20MHz out of 20 × 45MHz total)
 - Later changed to 2 × 15MHz further to lobbying
- Outcome: no new entry, spectrum acquired at (or very close to) reserve price
- This illustrates how auction design and market conditions influence the result
 - **Limited scope for entry + caps guaranteed no excess demand, and therefore pre-determined the outcome**



India

- India recently auctioned 2G spectrum licenses, after the Supreme Court cancelled several Telco licenses in 2012
- The reserve price was set at too high a level (higher than final prices of last auctioned 2G and 3G licenses), discouraging operators from participating
 - Only five operators won spectrum – including three who aimed to protect their existing investments in India
 - Only two operators – Bharti and Vodafone – were investing to improve their quality of service
- Outcome: only 42% of all blocks put up for sale were auctioned
 - The government fetched less than a quarter of its revenue targets from the auction
 - **Government focused on revenue maximisation (high reserve price – few bidders), instead of price discovery through efficient auction design (low reserve price – many bidders)**

What the focus on results show is the underlying assumption that bidders' valuations are aligned with the auctioneer's objective – not always true!

- As we have seen, auctions can help fulfil two core objectives in a transparent way:
 - Information asymmetry is managed – i.e. the auctioneer does not have to know the exact value of the spectrum and can elicit valuations through the auction process
 - The outcome is economically efficient – i.e. the party that values the spectrum most will get it
- However, what if economic efficiency is not the core objective of the auctioneer?
 - Some uses (e.g. emergency communications, defense) are not intended to produce output
 - There may be overriding objectives around dynamic efficiencies that are unlikely to be satisfied at auction (e.g. market entry which would in the long-run be efficient)
- In many cases, auctions can still be used if well-designed
 - One idea: could emergency services spectrum be pre-empted at auction in the same way as works of art are?

Example: PPDR / emergency services

- Emergency services are often confronted with communications difficulties in case of large scale accidents, weather phenomena or other disasters
 - Narrowband requirements (voice and messaging) are generally well-served
 - Broadband requirements are not catered for in a systematic way, however, and evidence shows real-time video is highly effective
- There are two key issues:
 - Can broadband requirements be catered for with existing PPDR spectrum / spectrum that can be rationalised?
 - What is the opportunity cost of assigning commercially interesting spectrum?
- In some cases, value is monetary (if there is a higher cost alternative); sometimes it is human and social (if there is no alternative)
 - This is a key case of tension between market-led mechanisms and non-monetary value, and other speakers will explore it in more details today
- *Note that Hurricane Sandy will provide a wealth of evidence on how emergency services can use commercial LTE networks!*

Auctions are here to stay as a core tool for assigning radio spectrum; they must be used judiciously and designed appropriately

1

Well-designed auctions enable spectrum managers to carry out economically efficient, fair and transparent assignments, in a way that they cannot hope to do on their own because of information asymmetry and complexity (especially with LTE-A)

2

Badly-designed auctions may fail to satisfy each and all of these objectives – careful and professional preparation in a transparent regulatory context remains essential, and auctions are no substitute for good governance

3

In some cases, auctions will remain unsuited to assignments – but we believe the principles behind auctions could be applied more broadly than they are today

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