SPECTRUM NEWSLETTER

Spectrum auctions must be designed with clear policy goals in mind to avoid undesirable outcomes

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Auctions have become the most popular means of assigning spectrum licences, especially for spectrum that is used for services with high economic and societal value, such as those in the mobile sector. However, a badly designed auction can lead to undesirable outcomes, either from the perspective of governments or national regulatory authorities (NRAs), or for one or more winners of spectrum licences (for example, mobile operators). To avoid these pitfalls, spectrum auctions need to be carefully designed.

NRAs must establish clear policy objectives as a starting point for designing a successful auction

Several auction mechanisms have commonly been used to assign spectrum, ranging from simple, single-round auctions to more complicated multiple-round auctions. Well-designed auctions are considered to be allocatively efficient if they incentivise bidders to bid according to their true valuation. Auctions can also help NRAs to achieve varying policy objectives and tend to be more-transparent than alternative options when assigning high-value spectrum, and therefore less open to post-award dispute.

When designing an auction, NRAs should begin by establishing policy objectives that relate to the award. These could include the following goals.

- achieve allocative efficiency of assignment (ensuring that those with the highest value for the spectrum can use it)
- achieve efficient use of spectrum
- preserve or enhance the competitiveness of the telecoms market (for example, through low barriers to entry and by avoiding excessive spectrum concentration)
- create investment incentives
- ensure service continuity
- achieve universal service considerations and/or increase service coverage
- facilitate transparency and fairness (all potential parties should have an equal opportunity to acquire spectrum)
- avoid complexity and costs associated with the award mechanism
- ensure a fair price is paid for public assets.

Various spectrum management considerations will also need to be built into each spectrum auction, including technology-neutral licensing and management of interference. Each NRA will need to undertake market analysis, spectrum valuation and auction design work (sometimes involving technical considerations relating to assigning spectrum rights of use to avoid interference). Auction design parameters that need to be specified include, for example, the detailed auction format, lot structure, bidding and closing rules, reserve prices, spectrum caps and floors. It is usually the case that the NRA will hold at least one consultation with industry on its proposals prior to publishing the final auction rules.

Auctions must be carefully designed to avoid undesirable post-award outcomes for some stakeholders

Failure to follow this process can result in a range of outcomes that might be considered undesirable to some stakeholders, or that may conflict with policy objectives, including the following effects.

- **Unbalanced spectrum assignments.** Exceptionally asymmetric spectrum assignments may leave some operators struggling to compete effectively, or at least not able to improve the quality of their services as quickly as other players can. Concerns about this type of spectrum assignment need to be balanced against the potential consumer benefits associated with some operators holding large amounts of (contiguous) spectrum.
- **Unsold spectrum**. This may arise, for example, when reserve prices are set above the market value of the spectrum. Where it does arise, this can result in an inefficiency because scarce resources are not fully utilised, which potentially hinders market development and ultimately harming consumers.
- **Excessively low prices.** Low prices (relative to the value that an independent assessment of business case valuations might indicate) may not provide value-for-money for the taxpayer, and may potentially go hand-in-hand with an inefficient assignment (for instance, where demand has been strategically reduced).
- **Spectrum loss.** Auctions that result in an operator failing to secure renewed licences for spectrum may put service continuity at risk, as well as the stability of the operator, with the likely result in both cases being a negative short-term impact on end users.
- **Long or complex process.** This may result in both operators and NRAs dedicating resources to the auction for a long period, which incurs substantial costs, whilst also delaying service deployment and using that spectrum in a way that harms consumers and potentially some operators.
- **Spectrum awarded inefficiently.** Some auctions have resulted in spectrum being awarded to companies that are not yet in a position to make efficient use of it, leading either to spectrum being handed back to the NRA or causing a considerable delay in rolling out networks and launching services.

Spectrum auctions need to be carefully designed to avoid these undesirable outcomes to the greatest extent possible. Analysys Mason works for both operators and regulators on all major spectrum management topics, including licence awards and renewals, auctions, spectrum valuation, pricing and spectrum trading. Analysys Mason has been instrumental in shaping spectrum policy around the world through our wide-ranging studies that help regulators and operators to develop spectrum strategy, determine spectrum policy, formulate spectrum licence conditions, value spectrum and prepare for spectrum awards. Our advice encompasses technical, regulatory, market and economic aspects of spectrum management and spectrum valuation, which sets us apart from our competitors. For further details please contact Samer Mourad, Janette Stewart or Mark Colville.