

3G Spectrum Auctions

Richer governments; Poorer consumers?

The recent auctions of third generation (3G) mobile licences have generated surprisingly large sums for the UK and German Governments. Other countries have rejected auctions in favour of “beauty contests” because they fear that consumers will ultimately pay higher prices. This, in turn, has led to vast differences in the cost of 3G licences across the EU. Here some of the issues relevant to evaluating the comparative efficiency of auctions are examined.

What auctions do

Economists have long advocated spectrum auctions. They are seen as fairer, more transparent, result in a realistic commercial price for a valuable asset, and generate revenue for taxpayers, thus avoiding future embarrassment when the original shareholders reap large windfall gains. It is also claimed that auctions promote economic efficiency by ensuring that the most efficient operator secures the licence.

Country	Total Price (M Euro)	Total Spectrum (MHz)	Price (Euro)	
			per population	M per MHz
Netherlands	2,685	135	173	19.9
United Kingdom	36,576	140	621	261.3
Germany	50,811	85	619	597.8

Are auctions efficient?

The claim that auctions generate economic efficiency is exaggerated. First, an auction does not decide on the eventual operator. It merely decides the winner of a licence which can then be traded usually through acquisition of the winning company. That is the market for corporate control provides the incentive for efficiency rather than an one off auction. After the UK and German auctions the successful bidders changed identity - Orange owned by Mannesmann was acquired by France Telecom, KPN and DoCoMo acquired a stake in TIW which was successful in gaining the fifth UK licence, and Hutchinson withdrew from the consortium for a German UMTS licence.

Furthermore, incentives to make efficient use the spectrum exist whether or not there is an auction, since pressures to maximise profits would be sufficient.

Can auctions over-price spectrum

The major consideration in assessing the desirability of an auction is whether it generates the competitive price for spectrum bandwidth. This is critical since the goal of public policy is to ensure, whether through market forces or regulation, that the price of services are similar to those that would be competitively generated.

There are reasons to suspect that the spectrum price generated by auctions has been excessive. While most spectrum auctions have been accompanied by an increase in the number of mobile licences, they typically involve the sale of limited bandwidth to a few firms arbitrarily determined by Governments not market forces. Hence there is no reason to believe that the licensing process has exhausted the potential for full competition in the provision of mobile services. The amount of spectrum released for UMTS and number of licences may be insufficient. In short, auctions may overprice spectrum because monopoly rents flow into the Government’s coffers rather than being passed onto consumers in the form of lower prices.

Second, there is the possibility of “winners’ curse”. This arises when an auction for a small number of licences encourages bidders to offer excessive amounts. The type of multiple ascending bid auction used does, however, minimise this perverse effect. Auctions may also give rise to gaming to raise rival’s costs. That is strong applicants may bid large sums in an effort to deter others, or if this is unsuccessful, burden their weaker competitors.

Third, part of the auction price will be “ransom tax” which gouges existing operators. Without a 3G licence an existing 2G operator would have no long-term future. They have in effect been forced not only to bid for new spectrum, but their survival. Thus a proportion of the licence fee takes the form of a “survival” or “ransom” tax arising from the Government’s limitation on the number of 3G licences and threat to take away existing 2G spectrum for other uses. It is no coincidence that all existing 3G operators were the successful bidders for the UK, Dutch and German 3G licences.

Will the consumer pay

Many have claimed that high licence fees will eventually be paid for by consumers. This has been roundly rejected by those in favour of auctions as scare mongering and back to front economics. The auction price is a fixed sunk cost that will not affect future mobile tariffs, which market forces will force down to longrun (incremental) costs. That is, future mobile prices determine the bids, and not the other way around.

This analysis is a simplistic response to a complex issue. The claim that the auction will not affect prices is based on the belief that prices are always set at marginal cost. While this may be the case in a perfectly competitive widget industry, it is not for network industries with high infrastructure costs. Quite simply if prices were set at marginal costs, all mobile operators would go bankrupt overnight.

In the real world, prices would be set to recover both marginal and fixed costs, the latter arising from building the network and securing the licence. There is an inverse relationship between fixed costs and the (optimal) number of operators. The higher these costs the fewer operators the market can sustain, and if there has been overbidding there will inevitably be consolidation in the industry. That is one must have regard to both marginal and total conditions.

High licence fees will have a differential impact. Given that each 3G operator will not be equally successful in the sense that their market share and revenue per customer will differ, the smaller and newer operators may not survive. This is more than a theoretical possibility since many of the later 2G entrants have yet to break even. In New Zealand which auctioned 2G licences, the successful third licence holder has yet to build a network a decade after its award!

Second, high licence fees will, in an oligopolistic market, greatly influence pricing decisions and competitive behaviour. The licence fee is borne by all mobile operators and provides a benchmark from which competition takes place. Each operator will seek to recoup all its costs and if these are large, then there will be pressures to maintain high prices.

High licence fees can also reduce service competition, and reduce the effectiveness of developing a wholesale airtime market. This is because the price of wholesale airtime will be affected since the price of access will be influenced by total costs including amortisation of the licence fee. Since this necessarily implies higher access and wholesale airtime charges, the implication is less service competition.

Backboard economics

As already indicated many economists are sceptical of the arguments advanced above. However, there is a danger that simplistic economics is being applied to design revenue maximising auctions without much attention to the competitive aspects. For example, it has been claimed that the UK auction was pro-competitive because a fifth licence was issued. However, a beauty contest with an additional licence would have resulted in the same level of enhanced competition.

Textbook economics may not provide solid guidance as to what the future holds. The architect of the UK auction has criticised the German auction for allowing the bidders to decide how much spectrum they could bid for, as inevitably leading to *"too few winners each gaining too much spectrum"* (Klemperer, *Financial Times*, July 25, 2000). The outcome was the opposite - six not the predicted four licence winners, with Hutchinson withdrawing, claiming that this would be an unsustainable level of competition.

Conclusions

Auctions have attractions but it is doubtful whether they are as flawless as their advocates suggest, or that they appropriately price spectrum. They have certainly increased the initial funding requirements, raised the costs of introducing service competition, and reduced the credit rating of mobile operators and their share prices. These factors have raised costs and risks in the mobile sector, and inevitably increased pressures to maximise profits.

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Case Associates have assisted a number of mobile operators on issues related to UMTS licensing and valuation. The views expressed above do not necessarily represent those of our clients, past or present. An expanded version of this Casenote appears in the December 2000 issue of Global Competition Review.

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