

1. Executive Summary

The EU is the most advanced area in terms of mobile phone penetration in the world. By January 2001, telecommunication services in the EU were worth an estimate of €200 billion. In order to discourage monopolisation and centralisation in this market and encourage competition and new entry, the Member States of the EU and other European countries have chosen between auctions and beauty contests to allocate their licences.

In the year 2000-2001, the European 3G telecom auctions took place. There were of high importance at the time because; third-generation, or 3G, wireless technologies were expected to enable innovative multimedia services such as high-speed Internet, always-on Internet connections for a number of devices including mobile phones, handheld computers and laptops within the next few years, and other Internet Protocol-based services, beyond the capability of second-generation (“2G”) systems such as GSM. This technology is a considerable leap from the existing 2G technology.

2. Introduction

Auction is defined as a method for selling an asset to the highest bidder. An auction is a public sale in which the price is determined by bidding, and the item is sold to the highest bidder. To participate in an auction means to bid to obtain an item. The person who offers the highest bid wins the right to purchase the item at that price. In other words, auction sale works by just connecting buyer and seller on the one market place. Internet technology has enabled people from all around the world to be in any market place they wish through the Internet.

Auction is really a unique idea, because everything is done by person to person. Auctions have a number of benefits like, ‘they raise substantial amounts of money for the government, giving government good information about the value of different uses spectrum, may help to better allocate spectrum allotment in the future, tend to be quick and cost effective’.¹ In contrast, a beauty contest, or comparative hearing, has government regulators selecting a winner based on its own determination of the potential pros and cons of the candidates.

3. How Auctions Work

Auctions can generally be divided into two basic frameworks; ascending auction and Sealed-bid auction. In the seal-bid (closed) auction, bidders are only allowed to place a bid once. In a first price sealed auction, the highest bidder prevails of the bid. Here it is not likely for competitors to collude because, it is not easy to respond to other bidders signals. In addition it makes it easier for other bidders to enter into the auction because weaker firms find that they have better chances to win the auction. However,

¹ R. Preston McAfee & John McMillan, *Auctions and Bidding*, 25 J. ECON. LITERATURE 699, 701 (1987).

using the sealed bid auction does not necessarily guarantee the most efficient outcome.

Unlike the sealed-bid auction, the ascending (open) auction, the bid initially starts with a low price and goes up to higher prices until no new bids are made. Generally it is believed that choosing an ascending auction is a mistake. Because they 'allow bidders to use early rounds to signal to each other how they might "collusively" divide the spoils and, if necessary, use later rounds to punish rivals who fail to cooperate. Ascending auctions can also deter entry into the bidding since a weaker potential bidder knows that a stronger bidder can always rebid to top any bid he makes.'²

3.1 Auctions Design

Always when designing an auction there, is two traditional concerns of competition policy these are:

- Preventing collusion: firms may decide to collude to keep the bidding prices as low as possible. This actually happened in the Swiss auction when, two firms merged leaving four bidders for four licences. Therefore, the bidders just had to pay the reverse price of one-thirtieth per capita of the UK and German Prices, and one-fiftieth of what the government once hoped for.
- Attracting entry: when there is only a few bidders in an auction there is a risk of being unprofitable for the auctioneer. Sealed-bid auctions are good for attracting new entrants. The Netherlands, Italy and, Switzerland had entry concerns, nevertheless they decided to use Ascending Auctions, which lead them all to be unsuccessful.

In addition, a poorly designed auction results in a number of different problems: 'the wrong firms might receive licenses; the government might not receive as much revenue as it could have; or the design might encourage firms to overbid to the extent that it ultimately affects the quality of service that the firm would provide to consumers'.³

4. The 3G Telecom Auctions

When the 3G auctions took place, there was there was a large discrepancies in prices, which ranged from €20 per capita in Switzerland to €560 per capita in the United Kingdom.

² An ascending auction is the kind of auction typically used to sell an art object or antique. The price starts low and competing bidders raise the price until nobody is prepared to bid any higher, and the final bidder wins the prize at the final price he bid. Mobile-phone licenses are sold in simultaneous ascending auctions which much the same except that several licences are sold at the same time with the price rising on each of them independently, and none of the licences is finally sold until no-one wishes to bid again on any of them.

³ Richard H. Thaler, *The Winner's Curse: Paradoxes And Anomalies Of Economic Life* (1992).

Analysts assumed that centrally located countries would be worth more than small countries due to the possibilities of expansion to neighbours and cost savings from sharing fixed costs with them, and richer countries would be worth much more. However it did not quite work the way analysts thought it would.

4.1 The UK Auction (March-April 2000)

The UK was the first to run the 3G auction. Originally, the UK intended to sell only 4 licences, but there was already the exact same number of 2G mobile-phone operators who had advantages over other existing 2G brand names and customer basis. The UK government was afraid that the ascending auction would discourage firms from entering with a good bet or even entering in the first place. Thus, the UK government decided to run an “Anglo-Dutch” auction which combines a hybrid of the ascending “English” and sealed-bid “Dutch” auction. Apparently this method worked very nicely, revenues were almost seven times more than expected⁴. This led the Netherlands, Italy and Switzerland to follow the UK by using the ascending design.

4.2 The Netherlands Auction (July 2000)

The Netherlands followed the UK auction design while the Netherlands had completely different circumstances. There were five licences and five incumbents who already had an advantage over the pre-existing 2G networks. This discouraged new entrants, and indeed, potential entrants had strong incentives to partner with incumbents, which is what happened.⁵

4.3 The Italian Auction (October 2000)

Italy again copied the UK auction design, but with an additional rule. If the number of serious bidders (as tested by various prequalification conditions) are less than the number of licenses, then the number of licenses for sale could be reduced. Yet, such a policy does not necessarily guarantee a successful auction, because it does not properly allocate demand with capacity of spectrum. [ref the article]. As Italy has the largest mobile market in the EU it hoped to get the same results as the UK auction. However, just before the auction took place one bidder withdrew from the auction. Leading the auction to take place with only five bidders for five licenses. In an attempt to solve the problem and avoid getting the same embarrassing results as the Netherlands, the Italian Prime Minister Giuliano Amato, tried to postpone the auction. Unfortunately it was not possible legal wise.

4.4 The Swiss Auction (November/December 2000)

Switzerland, also copied the UK auction design. According to the analysts' assumptions the proceeds from the Swiss auction would be €1000 per capita since it is a centrally located country and it is one of the richer countries. Similar to what

⁴ *3G Country Information*, FIN. TIMES, Aug.15,2001.

⁵ Peter Crampton, *Spectrum Auctions*, in HANDBOOK OF TELECOM ECON. I (Martin Cave et al, eds, forthcoming 2001)

happened in Italy four out of nine qualified bidders withdrew from the auction, at the same time two of the remaining bidders announced plans to merge. Leading the auction to take place with only four bidders for four Licences. The government postponed the auction for one month hoping to be able to change the rules, but the bidders argued that the government is legally obliged to stick to the original rules. 'So the bidders had just to pay the reverse price one-thirtieth per capita of the UK and German prices, and one fiftieth of what the government had once hoped for.

4.5 Conclusion & Recommendations

From the above we can see what Klemmerer meant by "flawed methods of allocation". The Netherlands, Italy and, Switzerland had entry concerns, thus, they would have done better if they used a sealed-bid auction. Because, 'sealed-bid auction provides no opportunity for either signalling or punishment to support collusion. Furthermore, entry is promoted because a weaker bidder knows he has a better chance of victory'⁶.

Nevertheless, that does not mean that, the sealed bid auction is the best for all situations. Sealed bid auctions also has its disadvantages 'the biggest disadvantage of the sealed-bid auction is the flipside of one of its advantages- because it allows bidders with lower values to sometimes beat opponents with higher values (and so encourages entry) it is more likely to lead to inefficient outcomes than the ascending auction'.⁷

From the above we can see that there is no auction design that can be suitable for all situations. 'So an auction design must be tailored both to its environment, and to the designer's objective.'⁸ Auction design has a significant effect on the outcome.

5. Auction VS Beauty Contests

Past experience shows that both auctions and beauty contests could go wrong. However, there is an argument that 'a well-designed auction is the method most likely to allocate resources to those who can use them most valuably'.⁹ In addition, the merits of competing firms can be extracted during the bidding. 'An auction can therefore extract and use information otherwise unavailable to the government'. Also, auctions can help to raise a substantial amount of money that can be used to support public finances. For example, two and a half percent of GNP, in the year 2000 came from the 3G auctions.

Beauty contests, by their nature, are tacit attempts by the government to provide state aid.¹⁰ Beauty contests may have destructive secondary effects. First, the lack of transparency; which means that governments are likely to give the assets to favoured firms rather than the firms that can provide better service. Second, those favoured

⁶ In a first-price sealed-bid auction every bidder makes a single "best-and-final" bid, and the winner pays the price he bid.

⁷ Cai, 1997; Myerson and Satterthwaite, 1983; Cramton, Gibbons and Klemperer, 1987).

⁸ Binmore and Klemperer, 2000; Wolfstetter, 2001.

⁹ Allowing resale is not a perfect substitute for an efficient initial allocation, because resale is itself generally inefficient. See Myerson and Satterthwaite (1983) and Cramton, Gibbons, and Klemperer (1987).

¹⁰ They could not do so actively because it violates current EU rules.

firms (nearly always incumbents) can use the cost savings from the beauty licenses in one market to subsidise their entry into other markets.

Beauty contests have also proven that they have some advantages over auctions. According to a research conducted by the Teleconmy group, a research and consultancy company. 'Our findings indicate that the regulatory authorities who awarded 3G licences via the beauty contest procedure are proving faster at rolling out infrastructure in comparison to auction countries' Qmars Safikhani, managing consultant for the technology group argued that 'This is because the regulators in beauty contest markets awarded the licences to mobile operators under the stipulation that they meet certain and strict criteria'. Such as the QoS of the 3G network services, timing and population coverage etc.

5.1 Conclusion

"Klemperer believes that auctions are superior to beauty contests". From the above we can see that both auctions and beauty contests have their advantages and disadvantages. However, I would agree with Klemperer, because auctions have more advantages. Auctions allocate resources better, provide government with valuable information, and raise substantial amounts of money. While in beauty contests, government tend to give assets to favourable firms at a fraction of what it is really worth, which dose not guarantee that they will provide customer with cheaper prices or better service.

6. Auctions & Telecom Problems

Since the year 2000, some telecom companies who are experiencing financial difficulties are blaming the 3G telecom auctions for that. For example, British Telecom ("BT") claimed that it has been crippled by a \$43 billion debt because of the cost of the UMTS auctions. BT actually admitted that they have overpaid for their licences. One of BT spokespersons elaborated on this point, he said that 'BT paid £10 billion more than it should have...especially in auctions in the UK and Germany,' adding that, "spending had a huge impact on the industry [landing BT with] debts of £30 billion." A consequence of BT's overpayment is that its interest payments on debt tripled in the third quarter of fiscal 2000'.¹¹ Today, BT is still financially suffering from the 3g auctions. Although on may 2003 BT reported a 14 percent rise in revenue, and also a pre-tax loss of GBP 10.2 billion. GBP 5.9 billion of this amount was due to the write-down of the cost of the year 2000 UMTS licenses in the UK, Germany and the Netherlands.

Some firms overbid for the 3G auctions. Because it was introduced at a time where the industry was still starry-eyed over the future of the 3g services. However after those auctions and, the burst of the Internet bubble, many companies such as BT realised that they may have paid too much for their licence.

¹¹ BT: We Blew \$14 Billion, CNNfn, Feb. 19, 2001, available at http://www.cnnfn.cnn.com/2001/02/19/europe/British_telecom

This overpayment led to weaken the financial situation of those companies who overpaid for their licences. For example British Telecommunications PLC, invested overseas, but later they had to sell those investments to improve their financial situation.

Although the British auction was very successful, their mishandling of the contributed to make things worse in Europe's technology industry. Yashio Utsumi, secretary general of the International Telecommunication Union (ITU) said that 'it is the same as a very, very heavy targeted tax on industry'.¹² He added that, the auction itself was not bad, but his criticism was targeted on, the way they spent money that was gathered from the auction. The money was spent on sectors other than the IT sector.

In addition, Martin Bouygues, the CEO of French Mobile operator Bouygues, argued that in order for incumbent operators to survive in the market they have to assure that they will take the licence home. Based on that argument he concluded that, mobile auctions presented a choice between "sudden death" and "slow Death". This statement does not apply to all firms, it only applies to those firms that previously received licenses for less than the real cost of the license and therefore got used to higher than usual profit based on these licences. Bouygues, was one of those firms that, received its GSM licence for a relatively small annual payments. Which suggests that, there was a misallocation, and that Bouygues should have never received their at such a low price in the first place. The misallocation can be seen in the share price value of telecom companies. Licences that were granted to firms on the first-come first-served basis achieved supernormal levels of profits at the customer's expense.

6.1 Conclusion

"Many would argue that the auctions were the cause of telecom problems since 2000". From the above we can see that, this statement is can be prove correct. Moreover, the European telecommunications companies are now worth less than they were worth before the UK auction began in the year 2000. Critics assume three things 'that the telecoms companies paid more for the licences were worth; that this expenditure has reduced investment in 3G; and that it destroyed the telecoms companies market value'.¹³

¹² Williams, M. (2002), 3G Auctions Represented Heavy Tax On Telecom, available from <http://www.pcworldmalta.com/news/2002/nov/151.htm>.

¹³ Klemper, P. (2002), *The Wrong Culprit For Telecom Trouble*, Financial Times, Page 21.