The Biggest Auction Ever: What Happened Next?

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At the turn of this century, licenses to operate 3G wireless communication networks were being sold across Western Europe. Most governments had chosen to use simultaneous ascending auctions (SAA), and the auctions were due to take place between March 2000 and September 2001. Up until the end of 2000 market analysts were estimating that the licenses would sell for €300 - €650 per capita, but just before the Belgian auction began in March 2001, market valuations fell to just 10% of their previous value. Economists held their breath.

- **Switzerland**, **Belgium** and **Greece** all had 3 companies bidding for 4 licenses, but only managed to hit their reserve prices of **€20 per capita, €45 per capita and €45 per capita respectively.**
- Unlike the other countries, the **Danish** government used a sealed-bid uniform-price auction (SBUPA) where the winners of the four licences all paid the fourth-highest bid. This generated around **€95 per capita**.
- **Austria** sold their licenses for **€100 per capita.**
- In the **Dutch** auction one of the incumbent, Telfort, threatened to sue the newcomer Versatel if they continued to bid against them! Three of the five incumbent forms formed partnerships with incumbents in other countries. They sold five licenses for **€170 per capita.**
- The **Italian** auction "ended quickly amid allegations of collusion" (Hild et al 2004) but earned **€240 per capita.**
- The **German** auction earned **€615 per capita**, but demonstrated several interesting things:
    - Vodafone-Mannesman ended a number of its bids with the digit "6", which could be interpreted as a signal to end the auction quickly with six winners" (Hild et al 2004)
    - This type of behaviour was not new to German auctions. In 1999 there were 10 blocks per sale, and one of the rules was that new bids must be at least 10% higher. Mannesman did the following:
        - €18.18m (for blocks 1-5)
        - €20m (for blocks 6-10)
    - Their main competitor, T-Mobile bid 10% more than Mannesman for blocks 1-5, and didn't bid for blocks 6-10. The two firms had effectively decided to split the market in half, pay €20m each, and avoid a bidding war.

However the really interesting outcome occurred in **Great Britain**. The original plan was to have an "Anglo-Dutch" auction, whereby the 1st round would be ascending and the 2nd round sealed bid.[1] But at the last minute the government decided to make 5 licenses available, and switched to a simultaneous ascending auction (SAA). They cut up the spectrum into 5 licenses of different sizes, with license A and B being larger than C, D and E. They were concerned that if there were 6 licenses they would be too small to attract any bidders. In order to guarantee that a new entrant would win at least one large license, incumbent firms were only allowed to bid for licenses B, C, D and E. There were a total of 13 bidders, and ultimately, the revenues reached **€650 per capita**. The media had predicted that it would bring in **£2bn-4bn**, but the price hit £2bn before the first withdrawal. Once the first company backed

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[*] Prof. Anthony J. Evans prepared this note for the purpose of aiding classroom discussion. It is not intended to serve as an endorsement, source of primary data, or illustration of effective or ineffective management.

This note is an updated version of Hild, M., Dwivedy, A., and Raj, A., (2004) "The Biggest Auction Ever: 3G Licensing in Western Europe (B)" Darden Business Publishing, which is in turn based on Binmore, K., and Klemperer, P., (2002) "The Biggest Auction Ever: The Sale of the British 3G Telecom Licenses, *Economic Journal*, 112.

[1] The term "Dutch" auction is being used to refer to a sealed-bid in this situation. Outside of finance circles it's more common to use "Dutch auction" to refer to a descending open outcry.

down, four more immediately followed – suggesting that they either had similar estimates of the underlying value, or simply didn't want to be the first to quit. The gains for the companies were quite large:

- In late April Hutchison had paid £4.4bn for 35% of one of the bidding companies, but after it had won one of the licenses in early July they were able to sell the same stake for £6bn
- France Telecom paid £6bn more for Orange in May than they'd been sold for in the previous October

The gains for the government were even larger – in total they raised **£22.5bn**, which amounted to 2.5% of GNP! The money was used to pay off part of the national debt.

Applications were submitted by the following companies (with new entrants denoted with an asterix (*) and winning bidders, and their bids, **in bold**):[2]

- 3G (UK)*		
- **BT**	**Licence C:**	**£4.03bn**
- Crescent Wireless*		
- Epsilon Tele.com*		
- NTL Mobile*		
- One.Tel Global Wireless*		
- **One2One**	**Licence D:**	**£4.00bn**
- **Orange**	**Licence E:**	**£4.10bn**
- Spectrum Co*		
- **TIW UMTS***	**Licence A:**	**£4.38bn**
- Telefonica*		
- **Vodafone**	**Licence B:**	**£5.96bn**
- WorldCom Wireless*		

It took until 2013 before the UK government auctioned off 4G licenses.

[2] See "UK mobile phone auction nets billions" *BBC News*, April 27th 2000.