TILBURG UNIVERSITY

Tilburg University

The Dutch UMTS-auction in retrospect

van Damme, E.E.C.

Published in:
CPB Report

Publication date:
2001

Document Version
Publisher's PDF, also known as Version of record

Link to publication in Tilburg University Research Portal

Citation for published version (APA):
van Damme, E. E. C. (2001). The Dutch UMTS-auction in retrospect. *CPB Report*, *2*, 25-30.

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Download date: 08. Nov. 2024

The Dutch UMTS auction in retrospect

Eric van Damme*

Abstract

When on July 24, 2000, the Dutch UMTS auction suddenly ended in turmoil – and with revenues of less than 2.65 billion euro, while the Minister of Finance had previously announced revenues on the order of 10 billion euro – the entire country was up in arms. The responsible ministers were called to parliament to explain what had gone wrong and, apparently not being completely satisfied, the parliament decided to start an official, independent investigation of the entire process by which licenses were awarded, and of the role of the government, in particular. The goal of the investigation is to provide information on the motivation for using an auction, on the process leading to the specific auction format chosen, and on the auction process – and it has to provide an international perspective. This summer, OCFEB, the Rotterdam-based institution that won the contract to perform the investigation, will publish its results. Now that things have calmed down, many other European countries have also awarded 3G licenses (and stock prices of European telecommunications firms have plummeted to one-third or less of their values from before the auctions), it is a proper time to look back. What can the OCFEB investigation be expected to reveal? What, if anything, has gone wrong? What lessons can be drawn for the future?

Revenues in Europe

As far as complaints about Dutch revenues are concerned, table 1 provides a sobering picture. The table gives revenues (expressed in euro per member of the population) for all of the Western European countries that have allocated their licenses up to now (the countries are listed according to the time at which they awarded the licenses). The clear message is that the Minister of Finance did not do very poorly: he just misses the rostrum! Furthermore, the only reason why Italy "scores" higher than the Netherlands is that it used an instrument, a relatively high minimum price, which apparently could not be used in the Netherlands. I don't know whether imposing a positive minimum price was impossible here, but I do know that, at present, parliament is discussing a change in the law that would make it possible.

Table 1 prompts two questions. What explains the large variability in revenues obtained, and how important are (large) revenues? Concerning the first question, an important explanatory variable is the allocation mechanism that was used. Finland, Spain, Sweden and Norway all used a "beauty contest" (in which the government awards licenses to the parties presenting the best business plans), requiring only marginal fees to be paid. Clearly this mechanism will not produce high revenue. Upon seeing the higher revenues in other countries, Spain has indicated that it regrets that choice, and it is trying to increase the fees now – a move that is being fought by the winners with all the legal means at their disposal. France decided to use a fixed price mechanism: all parties that were willing to pay 4.95 euro bln. could enter a beauty contest for four licenses. It turned out that only two parties were willing to pay that price, which explains the smaller revenues in France. All other countries used variations of the simultaneous multi-round ascending auction. While there were substantial differences in the details of the rules, which certainly could have an influence on final prices, we will not discuss those aspects here (see Klemperer (2000), Jehiel and Moldovanu (2001) and Van Damme (2001)). Similarly, the number of licenses differed in the different countries, as well as the market conditions and the rights associated with the licenses. All these factors might influence the final price, but space limitations require us to confine ourselves to a few remarks.

Competition was fierce in Germany and the UK, resulting in high prices there. In Italy, the auction only lasted 11 rounds and the revenue was high – purely attributable to the high minimum price. The timing of the auction is an important determinant for the revenue generated. Instructive is the case of Belgium, a country that entered very late in the race. Even though it had a relatively low minimum price, only the three incumbent 2G operators were willing to pay it; hence, one license is left unsold. In contrast, the UK was first. It auctioned, in effect, not only UK licenses, but options to create European networks, and this option value may, in part, explain the higher prices there. In my view, the high prices in Germany resulted from the battle (mainly between KPN and Telefonica) as to which party would become the 4th or 5th

* CentER, Tilburg University

Table 1 Revenues of UMTS auctions in Western European countries

Country	Revenue (€/pop)
Finland	0
Spain	15
United Kingdom	650
Netherlands	171
Germany	613
Italy	240
Austria	90
Norway	13
Switzerland	21
Poland	24
Sweden	0
Portugal	48
Belgium	55
France	169

mobile operator in Europe. KPN lost this battle, and this induced Hutchinson to part from KPN. As a consequence of losing, KPN is in a weaker position when negotiating a merger with Telefonica and/or TIM. Returning to the government perspective, we note that the Dutch revenues could have been higher if the government had delayed less in preparing the auction and would have implemented the original plan of auctioning before the UK. However, how important are large revenues, really?

The goal: efficiency or revenue?

In the evaluation of the auction that the cabinet sent to parliament on September 4, 2000, one reads "In het algemeen verdient het veilinginstrument de voorkeur (...) omdat het economisch efficiënt is en een optimale opbrengst oplevert",[1] a quote that suggests that there is no conflict between efficiency and revenue. There is some support for this view in the literature; after all, there is the "revenue equivalence theorem," which states that, given certain conditions, all efficient auctions that give zero utility to the lowest type, generate the same expected utility for all players involved, including the seller. Furthermore, we know from auction theory that (again given certain assumptions) all standard auction forms produce an efficient outcome.[2] However, one important assumption underlying these theorems is symmetry, and exactly this assumption is violated when allocating 3G licenses. After all, there are incumbents (those that already have a 2G license, a network and customers) and newcomers. Second, the standard framework expresses efficiency in terms of the bidders, but obviously an allocation that maximises the revenues for the telecom firms need not maximise total welfare or consumer surplus. For these reasons the standard auction model does not apply when allocating 3G licenses, and there may well be a conflict between efficiency and revenue. Consequently, the government needs to think about which objective it wants to pursue and what instrument it wants to use to obtain that objective.

A reading of the parliamentary texts with respect to auctions and telecommunications policy shows that the Dutch objectives are vaguely described ("creating a competitive and innovating market"), and that a broad class of instruments ("the use of the market mechanism") is allowed. One thing, at least, is clear: revenue generation has not been an official objective; indeed, the cabinet has claimed, and parliament has accepted, that revenue generation will not and should not be an objective. In retrospect, it is strange, and to the discredit of Dutch economists, that this objective was accepted without there being much debate about what exactly the objective should be. To be sure, a competitive telecommunications market contributes to the overall Dutch welfare, but so might a high auction revenue. An auction price, after all, is a sunk cost without distortions (contrasted to regular taxation). Hence, auction revenues might be used to reduce other taxes and might contribute to higher welfare in this way. In this year's Central Economic Plan CPB mentions the cost of public funds and the need to generate public funds as cheaply as possible.[3] Certainly, this is a discussion that has to be continued in the future; the UMTS auction was an expensive occasion to learn this lesson.

Efficiency and asymmetry

In his seminal auction paper, William Vickrey already showed that, when players are in asymmetric positions, a standard auction need not necessarily produce an efficient outcome—and the first and second price auctions need not generate the same revenue. Gilbert and Newbery (1988) have stressed that differences between incumbents and entrants pose special problems for auctions. The intuition is easily conveyed. Consider a monopolistic market, and suppose a second license is auctioned. The value to the license of the incumbent monopolist is his future monopoly

profit; the value to an entrant is the profit that he can obtain when competing with the monopolist. As the latter is smaller than the former in an ordinary ascending auction, the monopolist will win the second license, the monopoly will remain and the benefits of competition will not be realised. Furthermore, the higher the potential benefits of competition, the lower the value to the entrant, and hence, the lower the auction price. In this situation, if the government really wants to act in the public interest, it must discriminate against the monopolist: if the playing field is not level, the rules of the game must favour the weaker players in order to create an interesting game.

A simple back-of-the-envelope calculation may provide an indication about how large the value differences between incumbents and entrants are in the context of 3G licenses. Assume, for example, that the ARPU (average 3G revenues per subscriber) is 40 euro per month, and that the discount rate (WACC) is 1% per month. If it thus takes two years to roll out the network before revenue starts to flow in, then total discounted revenue is about 3000 euro per subscriber. If one counts on 6 million subscribers, each with a market share, then one arrives at expected revenue of 6 bln euro. From this, one has to subtract the cost of actually building and maintaining the network (say 1 bln euro) in order to get to the value of 5 bln euro. The value is lower for an entrant, as he can expect only a smaller market share, can start later and has higher costs for constructing the network. Fortis Bank estimates network costs for an entrant to be one-third higher. Then, assuming an expected market share of 10% (which is on the high side), one can calculate the value to be 0.5 bln euro. One notices how large the difference is: it is an order of magnitude less! One might well question why there were any entrants at all participating in the Dutch auction – an issue that we discuss below.

In another context, the Dutch government seemed to have gained the insight that one has to bias the playing field in order to correct for asymmetries between firms. The original proposals in the "MDW-project Benzinemarkt" for auctioning licenses for gasoline stations involved an asymmetric auction. However, under pressure of incumbent oil companies, the government quickly backed down, apparently because the European Commission considered asymmetric auctions to be discriminatory, and involving state aid. It can be easily shown, however, that this criticism does not apply. A third lesson, hence, is that we should study in greater detail the possibility of using asymmetric auctions.

Lobbies and rules

Economic theory distinguishes two theories of regulation. According to the public interest theory, regulation is supplied by the government to correct for market failures. The private interest theory holds that incumbents demand regulation in order to protect them against entrants. The equilibrium on this market determines the actual regulations. The appendix to background document "Procesbeschrijving UMTS," mentioned in footnote 1, gives detailed insights of how this market worked in this special case. A summary can easily be given. Based on recommendations of the UMTS forum (an international lobby group of telecommunications firms), the Dutch government proposed the auctioning of four (large) licenses. As this would eliminate one existing player from the market, it is understandable that this proposal was not greeted with great enthusiasm by all. Furthermore, NMa and OPTA were not happy with the prospect of a rather concentrated market. The discussion moved on to whether five or six licenses should be offered. Some incumbents lobbied for six, presumably based on the idea that a larger supply implies a lower price. The better economists, or at least the more experienced ones, were to be found with KPN. They had participated in the preparations and discussion in the UK, and had learned from the experience there that a situation with as many licenses as incumbents was highly unfavourable for newcomers (and, hence, most desirable for incumbents). Consequently, KPN lobbied for five, and got its way.

Interesting is the fact that the UK discussions about the problems associated with a 4-to-4 scenario (4 incumbents, 4 licenses) had taken place almost a year before the Dutch came to discuss the 5-to-5 scenario (which presents equal difficulties). While the UK government and its (academic) advisors had thought long and hard about the problem and had found an ingenious way out (the Anglo-Dutch auction), the Dutch government officials during the preparatory process never showed any awareness of this problem. As a result, the outcome of the lobby game was highly favourable for the Dutch telecommunications incumbents. The lesson to be learned here is that if the government does not want to be putty in the hands of the vested interests, then it should surround itself with strong, qualified independent advisors. The saying "penny wise, pound foolish" seems to apply in this case.[4]

Versatel

Given that the Dutch government decided to auction 5 3G licenses in a situation with 5 2G incumbents by using a simulta-

neous auction (given that such an auction format guarantees that the parties with the highest valuations will win the licenses), why did any entrant take the trouble to participate in the Dutch auction? Why did the auction take place at all? Why wasn't the government forced to give the licenses to the incumbents for free? These are the questions that the government should have been thinking about before the auction. All signs, however, indicate that the government was thinking about exactly the opposite "problem" of how to prevent too high a price (Bennett and Canoy, 2000), even though some academics had tried to push the government in the right direction. (Maasland, 2000)

In the end, there was only one non-incumbent that participated in the auction, Versatel, and fortunately we know why it participated: it had openly displayed its motives on its web-site the day before the auction started.

"We would however not like to see that we end up with nothing whilst other players get their licenses for free. Versatel invites the incumbent mobile operators to immediately start negotiations for access to their existing 2G networks as well as entry to the 3G market either as a part owner of a license or as a mobile virtual network operator."[5]

The message was clear: Versatel was willing to share a license, provided that the terms were right and that access to the existing 2G networks was offered on reasonable terms. Incumbents could expect (or might induce) Versatel to drop out of the auction if an agreement could be reached. On the other hand, Versatel clearly realised that it had bargaining power over the incumbents: by staying in the auction for longer it would raise the price that the incumbents would have to pay. I note that Versatel was well aware of the fact that, under normal conditions, it could not win a license. The arguments are given in the formal legal complaints that Versatel issued both in the Netherlands and at the EU-level. Hence, Versatel participated not to win a license, but rather to get concessions from the incumbents. Note, however, the free-rider problem on the part of the incumbents: all of them would benefit when Versatel dropped out, but only one party had to come to an agreement.

The auction

We now know that Telfort accepted the invitation of Versatel. On July 6, the day the auction started, talks took place between representatives of these companies. Telfort voluntarily revealed this information during a hearing at the Ministry on November 1, 2000. Two days later, on November 3, the Dutch competition authority, the NMa, raided the offices of both companies. A large collection of documents were confiscated, but in the end the competition authority concluded that no evidence was found that these had as aim or effect any influence on competition in the auction. Hence, there was no proof of violation of the competition act, case closed. In other words, even if the case had a strange odour, it is still not clear that it was rotten. What is surprising is that, apparently, the competition authority had not closely monitored the auction process; it became active only four months after the event. Clearly, finding evidence after such a long time is difficult. Given the small number of bidders, the high stakes involved, and the press release of Versatel, the NMa should have monitored the game much more closely. I think the NMa has learned an important lesson.

There is another lesson to be learned as well. Indeed, it is not clear that the behaviour of Telfort and Versatel is a violation of the competition law. To be concrete, suppose Telfort would have made the following proposal to Versatel "I offer you the possibility of becoming an MVNO on my network, as well as access to my 2G network (on certain conditions), provided that the price I pay for my license is not more than 0.1 mln euro". Suppose Versatel decides not to participate in the auction; prices drop to zero and Versatel accepts Telfort's offer. Is this collusion? I don't think so, but then, I am not a lawyer. What the example shows is that the competition law is not sufficiently powerful to prevent all behaviour that one might consider anti-competitive, or undesirable. If one wants to prevent such behaviour, then one must proceed by changing the auction rules. It is at this point that the auction rules were especially weak; they provided almost no possibility of excluding players from the auction in the case of anti-competitive behaviour. In any case, players suspected of such behaviour had to first be given warnings by the state, who obviously would be reluctant to issue such warnings, as eliminating players would reduce revenue. The lesson for the government is that it should commit itself by writing stronger penalty clauses in the auction regulation. A good example is provided by the Italian rules – rules that, had they been applied in the Dutch auction, would have prevented some other types of undesirable behaviour, as well.

For the most part, the Dutch auction was uneventful. An exception has to be made for the beginning and the end of the auction. Acting on its belief that it could not charge a positive

minimum, the government made rules specifying that players could use "pass cards" at the beginning of the auction and that, on lots receiving no bids, the minimum price would be (stepwise) reduced to zero. All players, apart from Libertel, realised that it was sensible (a dominant strategy?) to use these pass cards instead of starting to bid immediately and to drive prices to zero first. In effect, the players were in a kind of prisoners' dilemma; the only effect was that the auction lasted a week longer than it would otherwise have. (Of course this also gave some parties more time to come to an agreement.)

The end of the auction was more surprising. On Friday, July 21, in round 297, Versatel outbid Telfort on lot D with a bid of 862 million euro, after which Telfort's lawyers sent a confidential letter to Versatel stating that Versatel's bidding served only to raise the price; that such behaviour constituted a tort towards Telfort and that Telfort would hold Versatel and its managers liable for all damages resulting from this action. Versatel interpreted the message as a threat, and indicated to Telfort and to the auctioneer that it would no longer bid. Neither the auctioneer, nor the government, informed the other parties of the fact that Versatel withdrew from the bidding. Hence, on Monday, July 24, when still six rounds were played before Versatel had to move again (and then would quit), Telfort was able to profit from insider information. Indeed, Telfort's bid on lot B in round 301 that day could be interpreted as an attempt to profit from the additional piece of information. Obviously, then, bidding behaviour was distorted on the last day. The auctioneer should have suspended the auction, and should have created a level playing field (as far as information is concerned). It is still very surprising that this particular course of action was not taken. Apparently, the auctioneer and the government were not prepared to deal with this contingency. Market parties suffered considerably from this: on Monday, final total revenue was 857 million euro (22%) higher than it was on Friday at the end of the day. There is an important lesson to be drawn here, and the OCFEB investigation could clarify just exactly what went wrong on the side of the government that Monday morning.

The aftermath

There was a lot of turmoil immediately after the auction, caused by the revenue, which was considered to be disappointingly low at the time, and the chaotic events at the end of the auction. Furthermore, members of parliament, who had initially stated that revenues should not be a goal, complained about the low revenue.[6] Much to the credit of the responsible Ministry, it published an evaluation already at the beginning of September, accompanied by detailed information about the process leading to the auction and about the auction itself. At that time, the main conclusions could already be drawn, and indeed they had already been drawn in articles in *ESB* and *Het Financieele Dagblad* by the author[7] and others such as Boot and Van Wijnbergen. In this respect, it is somewhat disappointing that parliament did not reach conclusions quickly, and instead decided to delay and to start another investigation. With almost all relevant information already being public, there is not much to investigate, and few surprises can be expected in the OCFEB report.

However, we can now benefit from making the international comparison. We see that competition for licenses was intense only in the UK and in Germany. Competition was fierce in the UK because of the "option principle" mentioned above. Also, at that time, companies had not yet learned how expensive competition was, and hence, how attractive it was to cooperate. The market learned quickly, and the pace of consolidation was fast. For example, rather than to compete with Ben in the Dutch market, DT found it more attractive to take over that company. It is noteworthy that in almost all countries that auctioned later than the Netherlands there were some problems, with noticeable attempts to collude in Germany, Austria, Switzerland and Italy. Furthermore, in many of these countries (including Germany), the auction design received the criticism of academics. The lesson learned here is that auction design is an art in itself, and its complexity should not be underestimated.

The main lesson

It is perhaps this last lesson that still seems least appreciated in the Netherlands, and one hopes that it will be stressed in the OCFEB report. Just as constructing physical infrastructure is professional work that takes time, so is market engineering and the construction of proper auction rules to obtain desirable outcomes. The latter, however, does not yet seem to be appreciated in the Netherlands, as the recent experience with the planned auction of frequencies for commercial radio stations has clearly shown. This case shows how powerful the lobbies of vested interests can be and how easy it is to influence the Dutch parliament. The Wagenaar motion, which was unanimously accepted by the second chamber of parliament, instructed the government to investigate possibilities to favour the incumbents, and to allow them to maintain their

positions. This demand was clearly against the public interest, and is something every inhabitant of the Netherlands should be ashamed of. The cabinet gave in to the demand, and the Bouw committee was given a couple of weeks to come up with another design. This time period, however, was much too short to arrive at a well-thought out design, and indeed, the Bouw proposal is incomplete and suffers from severe shortcomings. Even though markets crash in other ways than bridges and tunnels do, and such crashes are not always visible to the public, markets do sometimes crash. Some things simply cannot be done.

References

Bennett, M. and M. Canoy, 2000, Auctions and precautions: Overbidding in spectrum auctions and its possible impact, working paper 127, CPB, June 2000.

CPB Netherlands Bureau for Economic Policy Analysis, 2001, Centraal Economisch Plan 2001, http://www.cpb.nl

Damme, E. van, 2000, Afspraken en voorkennis in UMTS-veiling, *ESB*, 8 September 2000, p. 680-683.

Damme, E. van, 2001, Marktwerking vereist Maatwerk; Ontwerpkeuzes bij veiling-ontwerp, to appear in *Maandschrift Accountancy en Bedrijfseconomie*.

Gilbert, R. and D. Newbery (1982) Preemptive patenting and the persistence of monopoly, *American Economic Review* 72, 514-526.

Jehiel, P. and B. Moldovanu, 2001, The European UMTS/IMT-2000 license auctions, discussion paper, University of Mannheim.

Klemperer, P., 1999, Auction theory: A guide to the literature, *Journal of Economic Surveys* 13, 227-286.

Klemperer, P., 2000, What really matters in auction design, mimeo, Oxford University.

Maasland, E., 2000, Veilingmiljarden zijn een fictie, *ESB*, 9 juni 2000, 479.

Notes

[1] Ministry of Public Works and Transport, "Procesbeschrijving en verantwoording UMTS", September 4, 2000.

[2] See Klemperer (1999) for a recent survey.

[3] CPB, CEP 2001 (downloadable from www.cpb.nl); On page 23 we read "minstens zo belangrijk is de constatering dat belastinggeld niet gratis is", but an estimate of the cost is not provided.

[4] In all fairness to the government officials, it has to be said that, if revenue is no objective and if it is true that the existing market structure is efficient, then there is no special problem—but then no auction would have been called for, either.

[5] An MVNO is a mobile operator that does not have its own network, but that in all other respects appears to the consumer to be a regular operator.

[6] See " Kamer laat UMTS-veiling onderzoeken", de Volkskrant, August, 25, 2000.

[7] For example, see Van Damme (2000)