

臺灣 WiMAX 執照拍賣設計 及其科技政策背景分析

樊沁萍

東吳大學經濟系教授

因應資通訊產業長期發展規劃之需要，行政院科技顧問組 NICI 小組於 2005 提出 WiMAX 發展藍圖。此科技政策過程展現政府單位跨部會合作的能力，包含國科會、行政院科技顧問組、NICI、經濟部、NCC 等單位接續參與政策制訂及執行。當時技術尚未成熟，也還沒有確定的商業模式，故 WiMAX 釋照拍賣深具特殊性。為配合政府產業政策，NCC 希望鼓勵新廠商加入並且標價不要過高，在此原則下 NCC 設計出十分特殊的拍賣設計。然而在業者競標 4G 門票的心態下，平均得標乘數比值高達 7%，是 2G 執照特許費 2% 的 3.5 倍，似乎並未達成降低廠商負擔之目標。

WiMAX 拍賣包含許多前所未見的特殊設計，其中部分規定尚有改善空間，例如實質審查階段無法避免「選美比賽」的批評，優先執照的選取方法可能有策略操作空間，參與業者對單回合拍賣沒有一致的認知，以及最後一回合的開標方式對暫時得標者較有利等。拍賣設計應以學術理論為基礎並輔以實驗佐證，WiMAX 之拍賣設計與文獻理論略有相關者是對拍賣回合數加以限制。本研究並以實驗方法檢驗外生限制回合數拍賣與國際通用 SMR 拍賣之差異，藉以說明拍賣設計應有的政策流程。

關鍵字：WiMAX 頻譜執照拍賣、實驗經濟學、科技政策、產業政策

WiMAX License Auction in Taiwan —Technology Policy and Auction Design

Chinn-ping Fan

Professor

Department of Economics, Soochow University

ABSTRACT

The government in Taiwan promoted the WiMAX standard in 2005, and leaped boldly into an unknown future. This was a complex policy maneuver, since it required coordinating efforts from many government units. The various branches of the Executive Yuan were responsible for initiating the new technology. The main concern of the Ministry of Economic Affairs was manufacturing and exporting ICT products, and the NCC was responsible for spectrum management and awarding WiMAX licenses. At that time, there were no international standards and no business models for WiMAX technology, so the main policy goal of the license auction was to promote this new technology, and hence the auction design was quite particular.

This paper analyzes the implications of the WiMAX auction design. In order to ease the burdens for new entrants, the bids were placed not in monetary amount but in percentages of sales. However, the average of winning bids was 7%, which was quite high compared with the 2% for 2G licenses. The limited-round design was also quite particular, and there was a crucial proposal review stage eliminating some bidders, so to the surprise of many, the actual auction was a single round.

It is almost an international standard to test auction designs with experimental studies. In order to demonstrate the proper policy formulation procedures, we conducted experiments to compare the efficiency of a standard simultaneous multi-round auction with the limited round design of the WiMAX auction.

Key Words: WiMAX license auction, experimental economics, technology policy, industrial policy