The Hong Kong Polytechnic University
Department of Applied Mathematics

Seminar
On

Airline Network Revenue Management with Buy-up

by

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Abstract

It has long been recognized that many traditional RM models are based on some rigid and unrealistic assumptions. One of these is that passengers who do not get the fare they want book and travel on other airlines or do not travel at all. In reality many are not necessarily lost to the airline but buy up, i.e., buy a more expensive ticket. We model network revenue management which incorporates buy-up using dynamic programming (DP). The resulting DP model is unlikely to be solved optimally due to the curse of dimensionality and hence is solved approximately by various simpler models. Policies based on partitioned booking limits and bid prices in conjunction with some approximate models are proposed to control capacity. We show that the partitioned booking-limit policies for several models are asymptotically optimal. The bid-price policy is also shown to be asymptotically optimal provided that correct bid prices are used. Numerical results show that a significant increase in revenue is obtainable even when the buy-up probability is relatively small.

Date : **30 March, 2007 (Friday)**

Time : **2:30 – 3:30 p.m.**

Venue : **Departmental Conference Room HJ610**
The Hong Kong Polytechnic University

*** * * ALL ARE WELCOME * * ***