

## Spoke-entry and airline network reformation

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### **Abstract**

A major carrier initially operates a hub-spoke network where its hub H links two destination cities A and B. The two spoke markets have a larger traffic density than the rim market AB. In response to a regional carrier entering the AH spoke, the network carrier is considering to reform its network by (i) continuing to offer the AH flight while starting to operate the AB flight (to form a fully-connected network); (ii) withdrawing the AH while operating the AB flight (to form another hub-spoke network with a new hub B). The analysis show that, based on a schedule competition model, if the hub-through time cost for connecting passengers is not sufficiently large, then continuing to operate the initial hub-spoke network is a reasonable strategy. Interestingly, if the time cost is small enough, then shifting its hub from H to B is profitable, even if the traffic density of the new route AB is smaller. These findings provide meaningful managerial implications for network carriers.

**Keywords:** airline network, spoke-entry, hub shifting

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