Optimizing a Bank Branch Network in the Presence of Mobile Banking

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In the past consumer financial transactions such as deposits and withdrawals had to be performed at physical bank branches. Technological developments over the past few decades, like automated teller machines (ATM), telephone banking, and online banking, have changed the type and number of transactions that consumers execute at their local bank branches. More recently the introduction of mobile banking, brought about by the adoption of smartphones, has the potential to dramatically change consumer interaction with their bank. Some banks have reported that they may reduce the number of their branch locations by half over the next decade. Using geo-coded transaction data from a large consumer bank, we develop a structural model that represents consumers’ preferences for online and physical channels and in the case of physical branches considers how location affects their choice. This model takes into account changes in banking behavior due to this new mobile channel. For example, consumers are more likely to check their balance and make more frequent, but smaller deposits since the transaction costs are substantially reduced. We use this model to predict the timing and type of transactions, as well as which branch to use for the physical network. We then apply this model to optimize the branch network in terms of capacities, amenities, location and number of branches to efficiently respond to the heterogeneous consumers’ needs not only for today but over the next decade based on mobile adoption projections.

Keywords: Mobile Banking, Channel competition, Dynamic Structural Model, Banks branch network.