Online and Offline Information for Omnichannel Retailing

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Abstract: This paper studies how retailers can effectively deliver online and offline information to omnichannel consumers who strategically choose whether to gather information online/offline and whether to buy products online/offline. Information resolves two types of uncertainty: product value uncertainty (i.e., consumers realize valuations when they inspect the product in store, but may end up returning the product when they purchase online) and availability uncertainty (i.e., store visits are futile when consumers encounter stockouts). We consider three information mechanisms: physical showrooms allow consumers to learn valuations anytime they visit the store, even during stockouts; virtual showrooms give consumers online access to an imperfect signal of their valuations; availability information provides real-time information about whether the store is in stock. Our main results follow. First, physical showrooms may prompt retailers to reduce store inventory, which increases availability risk and discourages store patronage. Second, virtual showrooms may increase online returns and hurt profits, if they induce excessive customer migration from store to online channels. Third, availability information may be redundant when availability risk is low, and may render physical showrooms ineffective when implemented jointly. Finally, when customers are homogeneous, these mechanisms may not exhibit significant complementarities and the optimal information structure may involve choosing only one of the three.

Bio: Fei Gao is a fifth year doctoral student in the Operations, Information and Decisions Department at Wharton School. He is interested in omnichannel management, marketing-OM interface, and behavioral operations. His work has been accepted by Management Science, Manufacturing & Service Operations Management, and Production and Operations Management.