

## **Blockbuster or Niche? Competitive Strategy under Network Effects**

by

**Prof. Ming HU**  
**Professor of Operations Management**  
**Rotman School of Management**  
**University of Toronto**

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**(Conducted in English)**

### **Abstract:**

We provide a theory that unifies the long tail and blockbuster phenomena. Specifically, we analyze a three-stage game where, first, a large number of potential firms make entry decisions, then those who stay in the market decide on the investment in its product, and lastly customers with heterogeneous preferences arrive sequentially to make purchase decisions based on product quality and historic sales under the network effect. We show analytically that a growing network effect always contributes to more sales concentration on a small number of products, supporting the blockbuster phenomenon. However, product variety and investments in quality, as an outcome of firms' ex ante competitive decisions, may increase or decrease, as the network effect grows. When a parameter that determines the strength of the network effect is below a particular threshold, an increasing network effect would shift more sales towards the products with higher quality, preventing more products from entering the market ex ante and inducing firms to adopt the blockbuster equilibrium strategy by making high-budget products. When the parameter is above the threshold, the network effect will easily cause the market to be concentrated to a few products; even some low-quality products may have a chance to become a "hit." Interestingly, in this case, when the network effect is growing, the ex-ante equilibrium product variety will be broader and firms adopt the niche equilibrium strategy by making low-budget products, a finding which supports the long tail theory. We test our theory with the movie box office data and find strong supporting evidence.

### **Bio:**

Ming Hu is a Professor of Operations Management at Rotman School of Management, University of Toronto. His research explores strategic interactions among firms and between firms and consumers, in the context of revenue management, supply chain management and service operations management. Most recently, he focuses on operations management in the context of sharing economy, social buying, crowdfunding, crowdsourcing, and two-sided markets, with the goal to exploit operational decisions to the benefit of the society. His research has been featured in media such as Financial Times. He is the recipient of Wickham Skinner Early-Career Research Accomplishments Award by POM Society (2016) and Best Operations Management Paper in *Management Science* Award by INFORMS (2017). He currently serves as the editor-in-chief of *Naval Research Logistics*, co-editor of a special issue of *Manufacturing & Service Operations Management* on sharing economy and innovative marketplace, and associate editor of *Operations Research* and *Manufacturing & Service Operations Management*, and senior editor of *Production and Operations Management*. He received a master's degree in Applied Mathematics from Brown University in 2003, and a Ph.D. in Operations Research from Columbia University in 2009.

Please email to [winnie.wy.tang@polyu.edu.hk](mailto:winnie.wy.tang@polyu.edu.hk) for enquiries.

**All are welcome!**