

NYU Stern School of Business
Department of Information, Operations & Management Sciences
OPERATIONS MANAGEMENT RESEARCH SEMINAR

TOPIC: Inclusive Innovation: Broader Market Coverage for Innovative Products with Deliberate Supply Chain Leadership

SPEAKER: Hyoduk Shin (UCSD)

DATE: Wednesday, December 4, 2013

TIME: 11:00 AM-12:00PM

PLACE: KMC 5-75

ABSTRACT

New technological and product innovations, including some life-saving innovations, conventionally traverse a sequentially downward path of gradually lowering cost and prices which limits their availability to the lower-end of the market for a period of time. In this paper, we focus on the central question of how to achieve inclusive innovation or getting broader market coverage for new innovative products. We unearth a new degree of freedom in a multi-tiered supply chain that offers the ability for innovating firms to expand market coverage. Through an analytical model grounded in industrial practice, we show that deliberately choosing who in a multi-tiered supply chain invests in innovation and product development can have a significant impact on the market coverage of the product. Our model deals with products that have non-linear development and production costs and a product lifecycle which is characterized initially by product innovation being most dominant effect followed by a period of process innovation. We show that aligning innovation investments with supply chain decision-making conditionally leads to greater total supply chain profits and market coverage. In addition, we are able to construct a sequence of deliberate leadership handovers such that during the lifecycle of a product, leadership is optimally shifted in an upstream direction during the product innovation phase and shifted back downstream entities during the process innovation phase. These results have important and subtle implications for firms launching innovative products and aspiring for greater market coverage. Specifically, to obtain broader market coverage for its innovations, a supply chain should not only consider the level of investment but also the identity of the investor, carefully aligning it with supply chain leadership. These results seem to parallel the evolution of industries such as automotives and personal computers and also offer opportunities for new industries and firms.

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Bio

Shin's research interests include forecast information sharing and investment in supply chain management, competitive strategies under operational constraints, economics of information technology, software and digital goods, release strategies in the motion picture industry and innovation in supply chains. He won the best paper award of Conference on Information Systems and Technology (2012) for the paper "Cloud Computing: Implications on Software Network

Structure and Security Risks” with his co-authors, Terrence August and Marius Niculescu and he is a recipient of the Lieberman Fellowship from Stanford University. Prior to joining the Rady School, Shin was an Assistant Professor at the Kellogg School of Management at Northwestern University where he won Chairs’ Core Course Teaching Award. Shin earned a Ph.D. from Stanford University, a M.S. in Statistics from the University of Chicago and M.S. and B.S. from the KAIST.