

I will discuss the recent research Scott Fay and I conducted on probabilistic goods and probabilistic selling strategy. My talk will focus on the following two papers:

### [Probabilistic Goods: A Creative Way of Selling Products and Services](#)

This paper defines a unique type of product or service offering, termed *probabilistic goods*, and analyzes a novel selling strategy, termed *probabilistic selling* (PS). A probabilistic good is not a concrete product or service but an offer involving a probability of getting any one of a set of multiple distinct items. Under the probabilistic selling strategy, a multi-item seller creates probabilistic goods using the existing distinct products or services and offers such probabilistic goods as additional purchase choices. The probabilistic selling strategy allows sellers to benefit from introducing a new type of buyer uncertainty, i.e., uncertainty in product assignments. First, introducing such uncertainty enables sellers to create a "virtual" product or service (i.e., probabilistic good), which opens up a creative way to segment a market. We find that the probabilistic selling strategy is a general marketing tool that has the potential to benefit sellers in many different industries. Second, this paper shows that creating buyer uncertainty in product assignments is a new way for sellers to deal with their own market uncertainty. We illustrate two such benefits: (a) offering probabilistic goods can reduce the seller's information disadvantage and lessen the negative effect of demand uncertainty on profit, and (b) offering probabilistic goods can solve the mismatch between capacity and demand and enhance efficiency. Emerging technology is creating exciting (previously unfeasible) opportunities to implement PS and to obtain these many advantages.

### [The Economics of Buyer Uncertainty: Advance Selling vs. Probabilistic Selling](#)

Although *Advance Selling* and *Probabilistic Selling* differ in both motivation and implementation, we argue that they share a common characteristic—both offer consumers a choice involving *buyer uncertainty*. We develop a formal model to examine the general economics of purchase options that involve buyer uncertainty, explore the differences in buyer uncertainty created via these two strategies, and derive conditions under which one dominates the other. We show that the seller can address unobservable buyer heterogeneity by inducing sales involving buyer uncertainty via two different mechanisms: (1) Homogenizing heterogeneous consumers, and (2) separating heterogeneous consumers. Offering advance sales encourages customers to purchase while they are uncertain about their consumption states (more homogeneous), but offering probabilistic goods encourages customers to reveal their heterogeneity via self-selecting whether or not to purchase the uncertain product. The relative attractiveness of these two selling strategies depends on the degree of two types of buyer heterogeneity: (1) *Max\_Value-Heterogeneity*, which is the variation in consumers' valuations for their preferred good; and (2) *Strength-Heterogeneity*, which is the variation in the strength of consumers' preferences. Neither strategy is advantageous unless the market exhibits sufficient *Max\_Value-Heterogeneity*. However, while *Strength-Heterogeneity* can destroy the profit advantage of *Advance Selling*, a mid-range of *Strength-Heterogeneity* is necessary for *Probabilistic Selling* to be advantageous.