

Controlling Cultivation of Taste

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Abstract

Consumer taste for certain products develop over time. Moreover the path of taste development depends on the quantity/quality of consumptions of such goods. One example is any cultural good (ex. art, design, literature, movie...), which require some sophistication on the consumer's side to appreciate their "true" values. Another example would be a really innovative good that consumers have never seen hence have no idea how much they would like it. Any addictive good (ex. cigarette, addictive substance...) may be another example.

In this paper, I consider a dynamic model in which a buyer's taste for a good changes qualitatively/discontinuously once and only once based upon their consumption activities over time. The buyer's value is initially low, then may jump up (or down) once. So initially there is no asymmetric information, but asymmetric information is generated endogenously over time. The timing in which the taste change occurs follow a poisson process. The current period consumption may affect both the rate of change and the distribution of new values when the change occurs today. The goal of this paper is to understand how such goods would be traded between buyers and sellers in various settings.

Since the change of taste occurs only once, buyers may not form a correct expectation about how their taste would be affected by their consumptions. So I allow buyers to have an incorrect belief about the development of their taste. In particular, I assume that the buyers may underestimate the extent of taste shock in the sense that (1) they believe that the taste change happens less often than it actually does and (2) they believe that the new value is going to be closer to the initial value than it actually is. On the other hand, the producer/seller has a correct belief about how the buyer's taste is going to develop, because they have interacted with many buyers and collected many data in the past. Formally this is modeled using heterogeneous priors about the stochastic process of taste change.

First I consider a model with one buyer and one seller who can provide a high quality good or a low quality good (with high cost and low cost respectively) at each point of time, and derive the optimal dynamic mechanism for the seller. The seller needs to

address multiple issues when designing the optimal dynamic mechanism. First, the seller needs to screen the buyer with changing taste dynamically. This is done by providing a menu of (continuation) contracts at each point of time. Secondly, the seller needs to induce the buyer to make “more investment” (i.e. consume goods with higher quality) for the cultivation of her taste. Since the buyer may be “biased” and underestimate the effect of current consumption on her taste, the seller needs to provide a high-quality good with low price initially.

When there is no bias, the optimal mechanism is simple: the first best allocation is implemented and the entire surplus is extracted by the buyer using a front-loaded payment. This is because there is no asymmetric information in the beginning of the game. When the buyer is biased, the allocation is inefficient in the optimal mechanism: the seller commits not to provide/produce any good (i.e. terminate the relationship) after certain periods. This is because a biased buyer underestimates the dynamic rent she would acquire upon her taste change, hence the seller fails to extract the true surplus of the buyer fully.

I show that the optimal allocation can be implemented by following simple contract. The seller sets up a trial period during which the buyer can enjoy a high quality good with low price. During the trial period, the buyer always has an option to switch to a permanent plan that provides a high quality good forever but with a higher price. Later the buyer switches to the permanent plan, more the buyer needs to pay for high quality goods. If the buyer does not switch to a permanent plan until the end of the trial period, then the seller will leave.

I also consider a simple model of competitive market where many buyers and sellers match dynamically, then compare the allocation in the competitive equilibrium to the above optimal allocation in one seller - one buyer model.