

Pricing and referrals in diffusion on networks ^{*}

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When a new product or technology is introduced, potential consumers can learn its quality by trying it, at a risk, or by letting others try it and free-riding on the information that they generate. We propose a dynamic game to study the adoption of technologies of uncertain value, when agents are connected by a network and a monopolist seller chooses a profit-maximizing policy. Consumers with low degree (few friends) have incentives to adopt early, while consumers with high degree have incentives to free ride. The seller can induce high-degree consumers to adopt early by offering referral incentives - rewards to early adopters whose friends buy in the second period. Referral incentives thus lead to a ‘double-threshold strategy’ by which low and high-degree agents adopt the product early while middle-degree agents wait. We show that referral incentives are optimal on certain networks while inter-temporal price discrimination is optimal on others.

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