

Rights Management

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Consider a purely digital good, such as an online newspaper, so we don't have to worry about marginal cost of production. Let $p(y)$ be the inverse the demand function for this good under some default set of terms and conditions. The owner of the digital good will choose a price and, implicitly, quantity to sell so as to maximize profit:

$$\max_y p(y)y$$

This yields some optimal (p^*, y^*) as shown in the diagram.

Now the seller of the good contemplates liberalizing terms and conditions: let's say extending a trial period of free use from 1 week to 1 month. This has two effects on the demand curve. First, it increase the value of the product to each of the potential users, shifting the demand curve up. But it also may easily result in less of the item being sold, since some users will find the longer trial period enough to meet their needs.

Let us model this by defining the new amount consumed by $Y = \beta y$, where $\beta > 1$, and the new demand curve by $P(Y) = \alpha p(Y)$, where $\alpha > 1$. The new profit-maximization problem now becomes

$$\max_Y P(Y)y.$$

*Notes to accompany *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, 1998. Adopted from Hal R. Varian, *Intermediate Microeconomics*, 5th edition, W. W. Norton & Co., 1999. © 1998, Carl Shapiro and Hal R. Varian. All rights reserved.

Note that we multiply price times the amount sold, y , not the amount consumed, Y .

Applying the definitions $Y = \beta y$ and $P(Y) = \alpha p(Y)$, we can write this as

$$\max_Y \alpha p(Y) \frac{Y}{\beta} = \max_Y \frac{\alpha}{\beta} p(Y) Y.$$

This maximization problem looks like problem (Å) except for the constant α/β in front of the max. This will not affect the optimal choice, so we can conclude that $Y^* = y^*$.

This simple analysis allows us to make several conclusions:

- The amount of the good consumed, Y^* is independent of the terms and conditions.
- The amount of the good produced is y^*/β which is less than y^* .
- The profits could go up or down depending on whether α/β is greater or less than 1. Profits go up if the increase in value to the consumers who buy the product compensates for the reduced number of buyers.