Marketing Strategy
Fall 2009
Villas-Boas

Handout on Pricing Problem

Demand in the 12 months before the price change as 329 units, and 265 units after the price change.

One estimate of demand would be the linear function that passes through (Q=329,P=20) and (Q=265,P=30).

Such a linear demand equation Q=a + b P would satisfy 329 = a + 20 b and 265 = a + 30 b. The solution of this system of equations yields a = 457 and b = - 6.4. That is, the estimated demand function is Q = 457 – 6.4 P.

The point demand elasticity with respect to price is - P Q'/Q which is 6.4 P/(457 – 6.4 P). At the price P=20, the point demand elasticity is 0.39, while at the price P=30 the point demand elasticity is 0.72. Note that the point elasticities are different from the arc elasticity computed in class (329-265)/329 / (30-20)/20, because the arc elasticities are always approximations.

In order to maximize profits with this demand function we would maximize (P-10)(457 – 6.4 P) which yields an optimal price P*=40.7, and a profit gross of the fixed costs of 6033.164. Note that the demand elasticity at P=40.7 is 1.325 and the golden rule of pricing is satisfied, (40.7 – 10)/40.7 = 1/1.325.

More importantly note that this is the optimal price if this is the correct demand function, and other factors are not present. As we discussed in class other factors that could affect the optimal price are, for example,

- Other factors affecting demand before and after the price change
- Dynamic effects
- Existence of complementary products

Several of these factors could potentially justify an optimal price of 30.