Start-Tech Academy

New Product Forecast

Bass Model

- Business regularly invest large sums of money in new product development.
- It is therefore of critical importance to predict future sales of a product before a product comes to market
- The Bass model is used to forecast product sales before the product comes to market

New Product Forecast

Introduction Bass Model

- The Bass model asserts that diffusion of a new product is driven by two types of people:
  - **Innovators** are people who seek new products without caring if other people have adopted the new product.
  - **Imitators** are people who wait to try a product until other people have successfully used the product.
- The Bass model is used to forecast product sales before the product comes to market

New Product Forecast

Introduction Bass Model

Independent of adopters Dependent on adopters

$$n(t) = P(\overline{N} - N(t-1) + \frac{(\overline{N} - N(t-1))(N(t-1)Q}{\overline{N}}$$

- n(t) = Product sales during period t.
- N(t) = Cumulative product sales through period t.
- N = Total number of customers in market; assume that all of them eventually adopt the product.
- P = Coefficient of innovation or external influence.
- Q = Coefficient of imitation or internal influence

New Product Forecast

Step 1

- Estimate first year sales by sampling and surveying
- Try to find out
  - Total market size (t)
  - Proportion of customers intend to buy (i)
  - Proportion of customers who can afford the product (a)
  - Proportion of customers who have access to the product(c)
- First year sales (s)

$$s = t \times i \times [-0.899 + (a) \times (1.234) + (c) \times (1.203)]$$

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Step 2

- Identify analogous product
- Use past sales data of analogous product to predict value of P and Q
- Assume similar distribution of innovators and imitators for the new product
- Use same P and Q value

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Step 3

- Estimate total customers in the market using first year estimate, P and Q with excel goal seek tool