

Homework on Bass Model

1. A Robot Lawnmower Husqvarna Automower 415X-<https://time.com/collection/best-inventions-2022/6230428/husqvarna-automower-415x/>
2. A similar innovation from the past that comes to mind is the Roomba, an autonomous robotic vacuum cleaner developed by iRobot. The Roomba revolutionized household cleaning by introducing a hands-free, automated solution for vacuuming floors. Just like the Husqvarna Automower 415X.

The Roomba was introduced in 2002. By 2019, iRobot had sold over 25 million units of the Roomba worldwide.

The Husqvarna Automower 415X and the Roomba exemplify the growing trend toward autonomous, robotic solutions in household chores. These innovations reflect a broader shift in consumer preferences toward products that can save time and effort.

3. <https://www.statista.com/statistics/731469/irobot-revenue-worldwide/> This time series is a valuable indicator of the company's financial performance over a specific period. Analyzing revenue trends provides insights into the demand for iRobot's products, including the Roomba.

The data covers multiple years, allowing for a comprehensive examination of iRobot's revenue trends. The consistent upward trajectory in revenue suggests that iRobot has experienced sustained demand for its products, indicating a positive reception among consumers.

4. The estimation is done by python
5. Since we already have the respective percentages of key elements of diffusion (Innovators, Early Adopters, Early Majority, Late Majority, Laggards) Factors influencing diffusion:

Price: The cost of the Automower will significantly influence adoption. As prices drop, more people from each segment will become potential adopters.

Marketing and Awareness: Effective marketing campaigns, highlighting the benefits and ease of use of the Automower, can accelerate diffusion across all segments.

Word of Mouth: Positive experiences and recommendations from early adopters can influence the early and early majority segments.

Product Performance and Reliability: Positive reviews, backed by solid performance and reliability data, will be crucial for winning over the early majority and late majority.

Regulatory and Policy Support: Government incentives or policies supporting eco-friendly lawn care solutions could accelerate adoption across all segments.

6. Using Fermi's estimation-

Total global households: 2.5 billion

Innovators: 2.5% of the total households

Early Adopters: 13.5% of the total households

Early Majority: 34% of the total households

Late Majority: 34% of the total households

Laggards: 16% of the total households

Periods (assuming a one-year period for simplicity):

Innovators (Year 1): $2.5\% \times 2.5 \text{ billion households} = 62.5 \text{ million households}$

Early Adopters (Year 2): $13.5\% \times 2.5 \text{ billion households} = 337.5 \text{ million households}$

Early Majority (Year 3): $34\% \times 2.5 \text{ billion households} = 850 \text{ million households}$

Late Majority (Year 4): $34\% \times 2.5 \text{ billion households} = 850 \text{ million households}$

Laggards (Year 5): $16\% \times 2.5 \text{ billion households} = 400 \text{ million households}$

Total Adopters after Year 5:

Total Adopters = Innovators + Early Adopters + Early Majority + Late Majority + Laggards

Total Adopters = $62.5 \text{ million} + 337.5 \text{ million} + 850 \text{ million} + 850 \text{ million} + 400 \text{ million} = 2.5 \text{ billion households}$

This Fermi estimation provides a starting point for understanding the potential market share of the Husqvarna Automower 415X worldwide.

7. It was chosen worldwide, as you could have noticed from the above information.

