

Maximizing Profitability Through Smart Pricing Presentation



Agenda

Introduction

Objectives:

- Step 1 Model development
- Step 2 Finding the best Model
- Step 3 Calculate absolute percent error
- Step 4 Model the business using Power model

Summarize

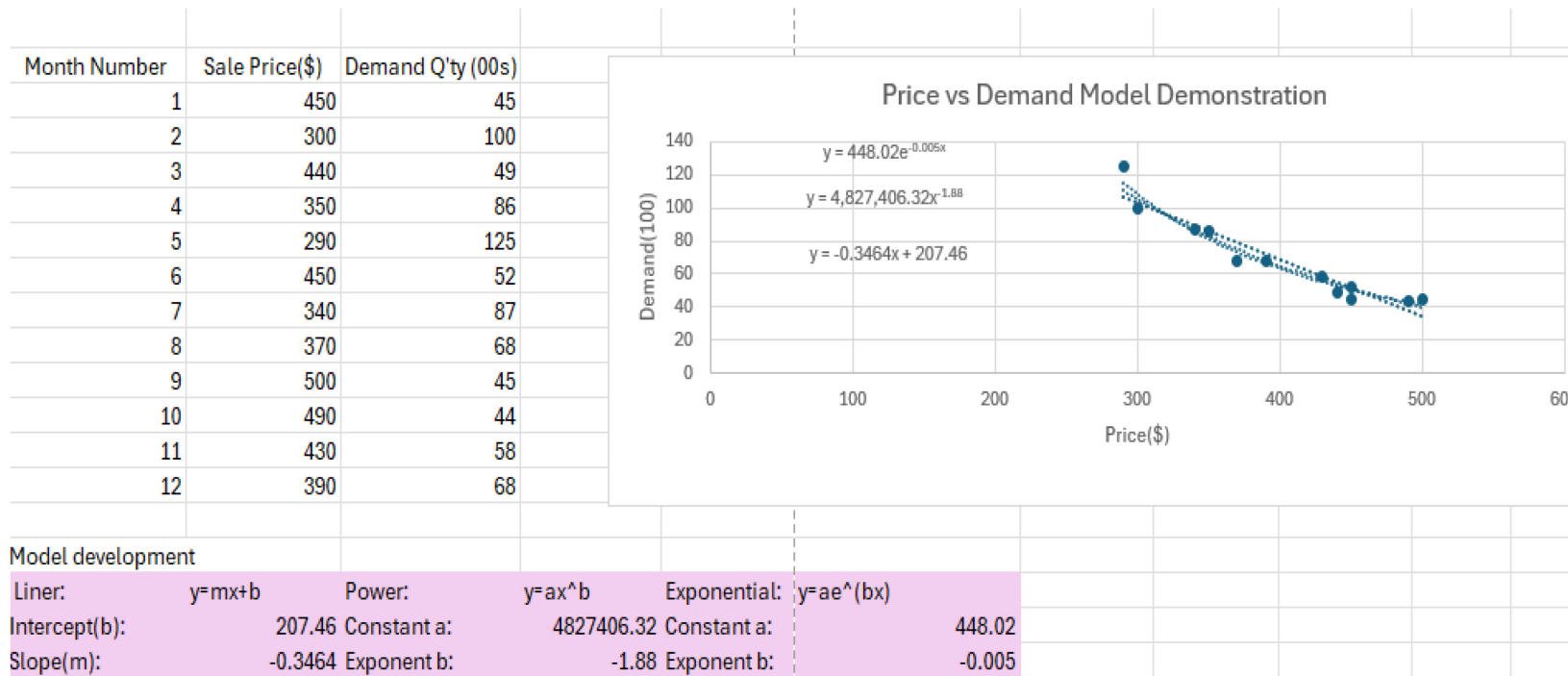
Final conclusion

Introduction

Business problem:

Top Good Pest Zapper is company that manufactures electric pest zapper. This year, they are going to market and sell their product by themselves instead of through a partner. Due to highly competitive market, Top Good wants to use statistical model to navigate their pricing and marketing strategies.

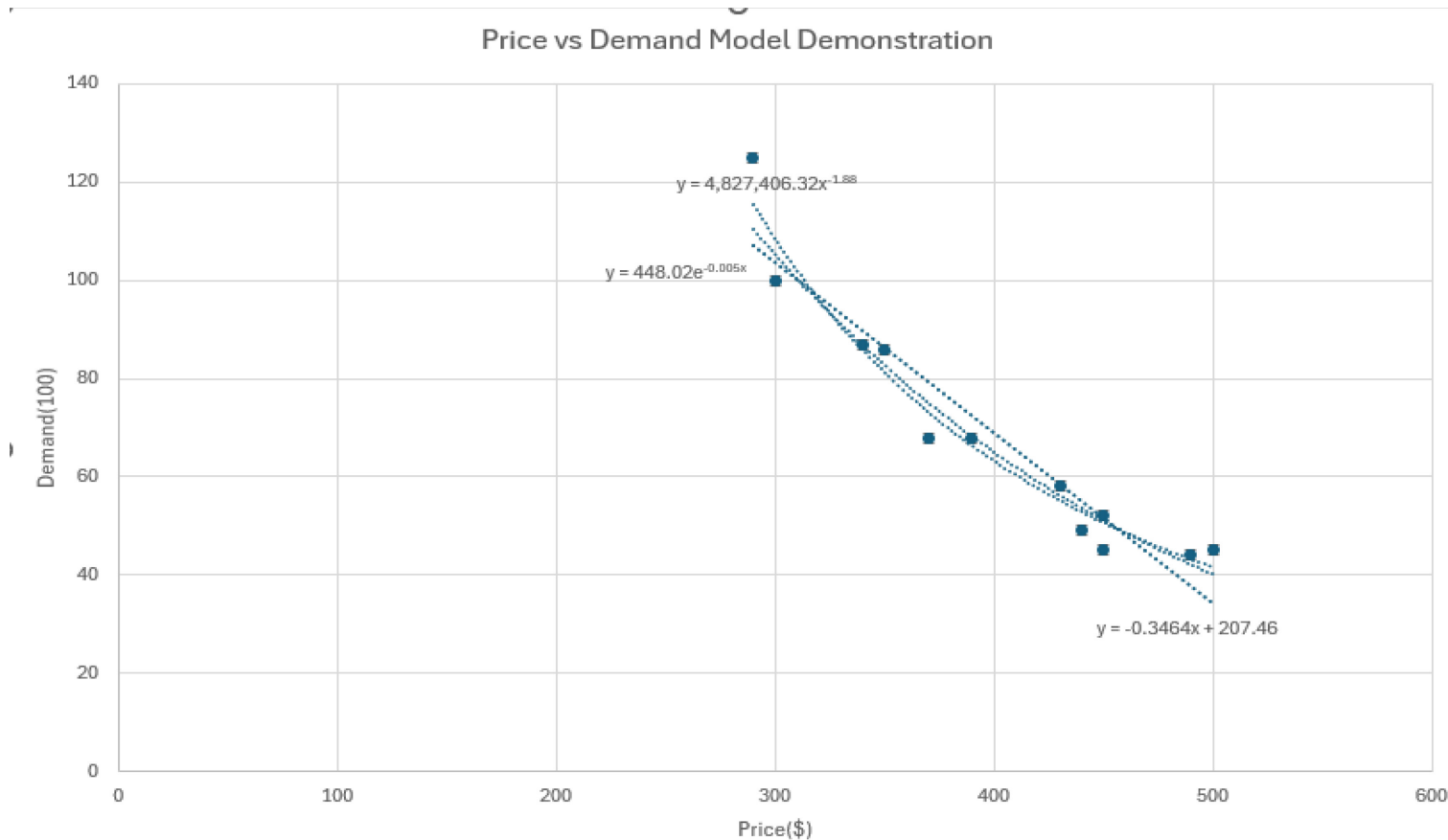
Step 1 Model development



Based on historical data of sale prices and demand throughout last year, the market team develop three predicting models to compare and select the best model.

Models: Linear, power, exponential

Step 2 Finding the best model



Findings:

The left chart shows the line graphs from Linear, Power, and Exponential Models.

It seems Power model is more accurate align with the actual demand.

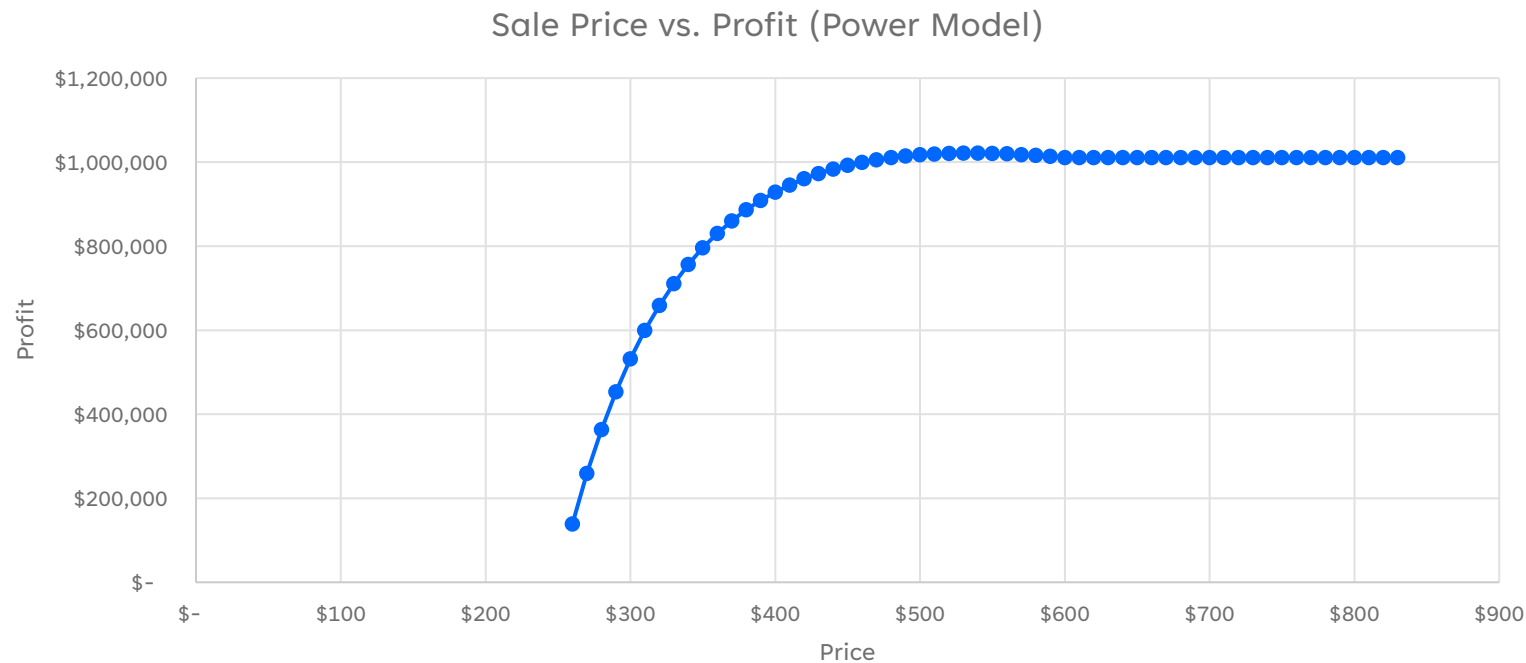
Step 3 Calculate Abs Percent Error

Calculate absolute percent error					Absolute Percent Error			
Sale Price	Linear	Power	Exponential	Demand(00s)	Linear	Power	Exponential	
450	51.6	49.6	47.2	45	14.6%	10.3%	4.9%	
300	103.5	106.3	100.0	100	3.5%	6.3%	0.0%	
440	55.0	51.8	49.6	49	12.3%	5.6%	1.3%	
350	86.2	79.6	77.9	86	0.3%	7.5%	9.5%	
290	107.0	113.3	105.1	125	14.4%	9.3%	15.9%	
450	51.6	49.6	47.2	52	0.8%	4.6%	9.2%	
340	89.7	84.0	81.8	87	3.1%	3.4%	5.9%	
370	79.3	71.7	70.4	68	16.6%	5.4%	3.6%	
500	34.3	40.7	36.8	45	23.9%	9.5%	18.3%	
490	37.7	42.3	38.7	44	14.3%	3.9%	12.1%	
430	58.5	54.0	52.2	58	0.9%	6.8%	10.0%	
390	72.4	64.9	63.7	68	6.4%	4.5%	6.3%	
				Avg:	9.3%	6.4%	8.1%	<-us

Findings:

Among the three regression models, Power model has the smallest absolute percent error, meaning we can rely on this model for further actions.

Step 4 Model the Business(Power model)



$$y = ax^b$$

$$a = 4827406.32$$

$$b = -1.88$$

x = price

Findings:

The graph shows profit change over the price range from \$250 to \$850 and a fixed cost \$250.

Summarize

- Used techniques: MS Excel (graph, VLOOKUP), PowerPoint
- Best predictive model: power model
- Selling unit of 3640 (demand) will maximize profit, too less or too more is not recommended.
- Pricing the product at \$530 per unit will maximize annual profit.
- Constrain: optimal pricing and demand quantity subject to change if the cost of unit changes.



Thank you

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