

# ***Pricing and Revenue Forecast Model***

***Multivariate Solutions***

# ***Applications and Goals***

- *This pricing and revenue forecast model is used primarily to determine optimal pricing of a product/service, and market share penetration of a given product at specific price points.*
- *Using that information, a model of revenue projection can be built using simulation methods.*
- *The goal is to give clients the tools to make an informed decision about pricing a given product or service based on the highest likelihood of maximum revenue.*

# ***The Monte Carlo Method***

- *While it is a relatively straightforward matter to develop confidence intervals for each of the revenue parameters taken alone, what is really at issue is the confidence interval for projected differences taken jointly. Such a problem is best addressed through the use of so-called Monte Carlo methods.*
- *In a Monte Carlo simulation, a model in spreadsheet format is set up and the cells whose values come from the survey results are identified (and which are therefore subject to sampling error). For each of these cells, a distribution of possible values using the appropriate means and standard errors is specified. A series of trials is then generated, each one of which represents a possible outcome of the process.*

# ***The Monte Carlo Method*** (cont.)

- *On average, most of the trials will yield values close to the mean, since the distributions are typically bell-shaped and high values for some parameters are likely to be offset by low values for others. Expected revenue represents a best-case outcome given the survey results and confidence intervals associated with the individual parameters. But if the simulation is performed, say, 1,000 times, such a best-case outcome would represent only a small fraction of the total trials.*
- *The 1,000 outcomes of these trials can be arrayed in a cumulative distribution, so that the probability of percentage growth falling into any given interval can be read off as the number of trials with outcomes in that interval.*

# ***The Product / Service***

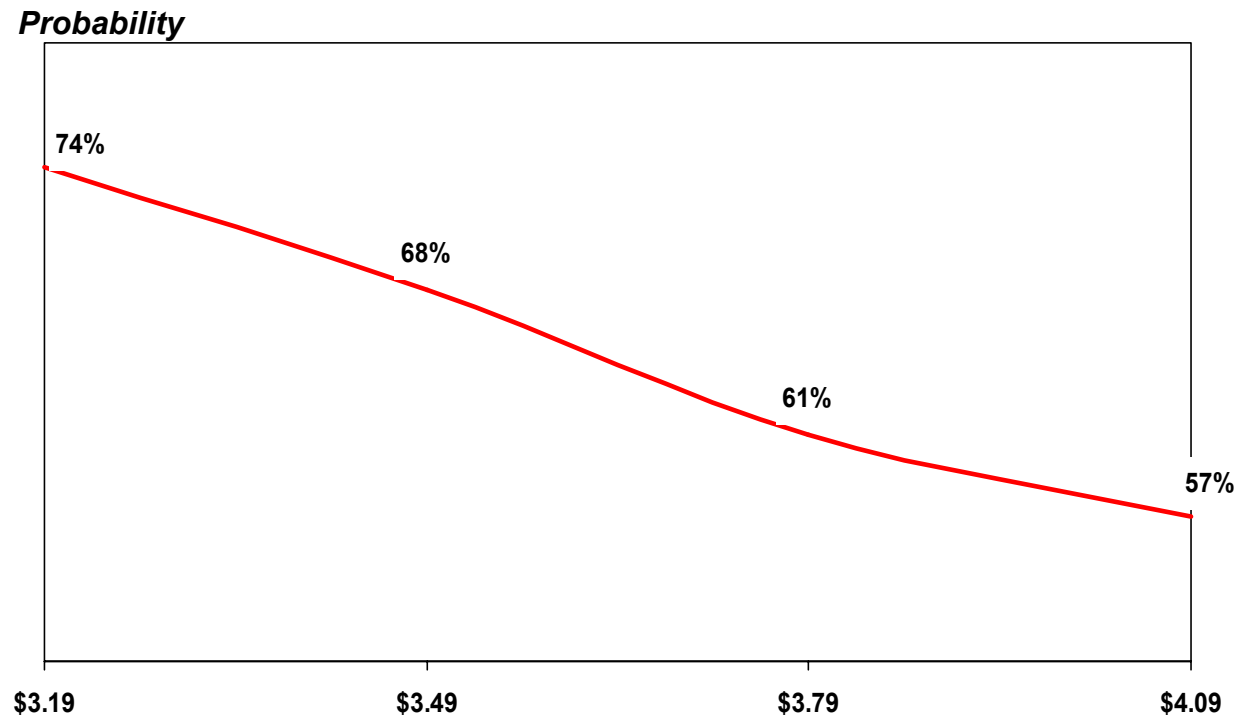
- *The product or service must be defined before the survey is fielded. This model does not test different features for product construction—that is left to tradeoff methodologies.*
- *This example is a cleaning foam that is used in the everyday cleaning of kitchens and bathrooms.*
- *During the survey the product's features and benefits are described in detail to the respondent. Possible sale points are:*
  - \$3.19
  - \$3.49
  - \$3.79
  - \$4.09

# ***Constructing the Pricing Module***

- *Read the product/concept description.*
- *The pricing module on the questionnaire is constructed as follows:*
  - *‘Given the features of this product, would be willing to pay \$3.49 for it?’*
  - *If yes, then ask, “Would you pay \$3.79 for it?”*
  - *If no, then ask , “Would you pay \$3.19 for it?”*
  - *Continue with Yes until the respondent says, ‘No.’ Record the highest Yes.*
  - *Continue with No until the respondent says, ‘Yes.’ Record that Yes.*
  - *If Yes at top price (\$4.09), record top price.*
  - *If No at bottom price, (\$3.19), record No Answer.*
- *Rotate the starting points so that all price points begin equally.*

# Predicted Market Penetration

- *Cumulative line chart*
  - *The assumption is that if a respondent is willing to purchase the product at \$4.09, he/she will be willing to purchase that product at \$3.79 and all lower price levels.*



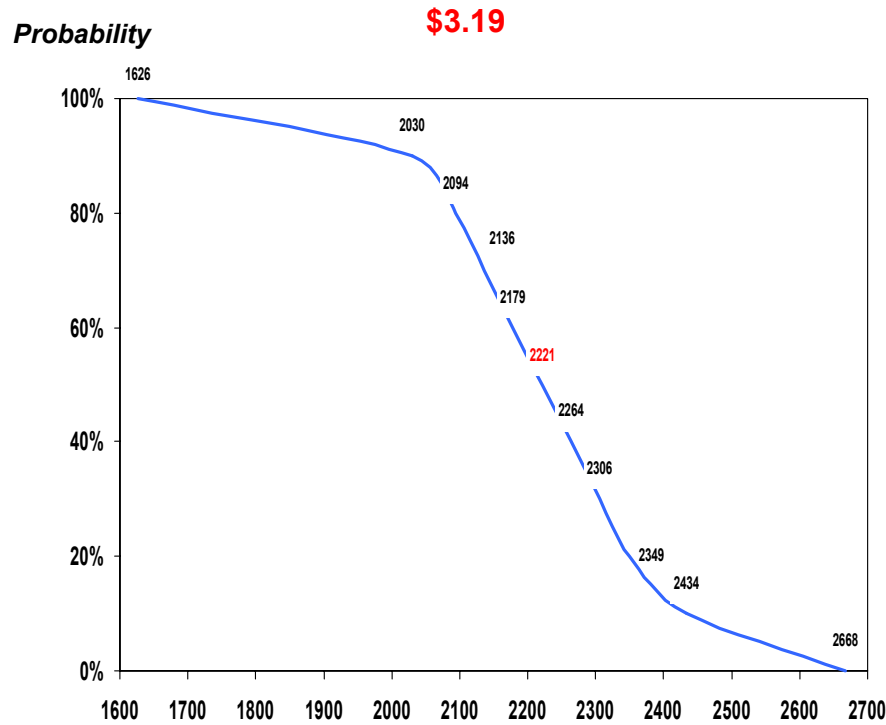
# *Input for Revenue Forecast*

- *Input based on market penetration estimates taken from survey.*
- *To project revenue, information must be supplied by the client:*
  - **Size of potential market (range OK)**
    - *Our market is said to be 2 million foam-using households, +-10%*
  - **Fixed costs, e.g. production, marketing, dist., etc. (range OK)**
    - *Fixed costs are said to be \$2.5 million, +-10%*

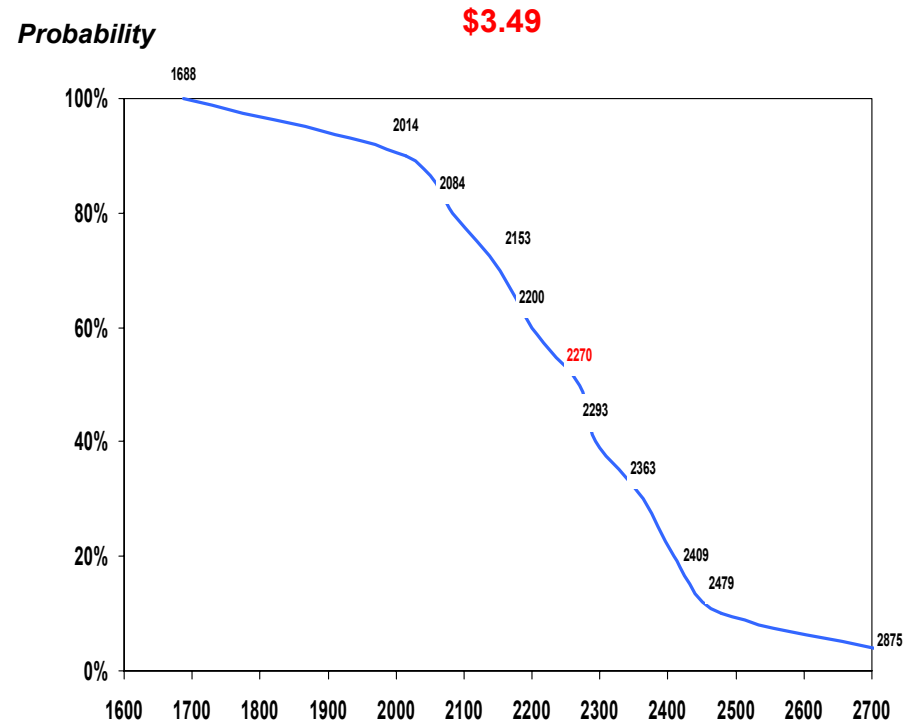
<i>Revenue Forecast</i>	
Projected Size of Target Market (Households)	2,000,000
Projected Fixed Costs	\$2,500,000
Price Point	\$3.19
Market Penetration	74%
Number of Interviews	300
<b>Projected Revenue</b>	<b>\$2,221,200.00</b>

# Revenue Forecast

**Probability That Revenue Is Greater Than or Equal to Forecast**



**Forecast Revenue=\$2,221,000**



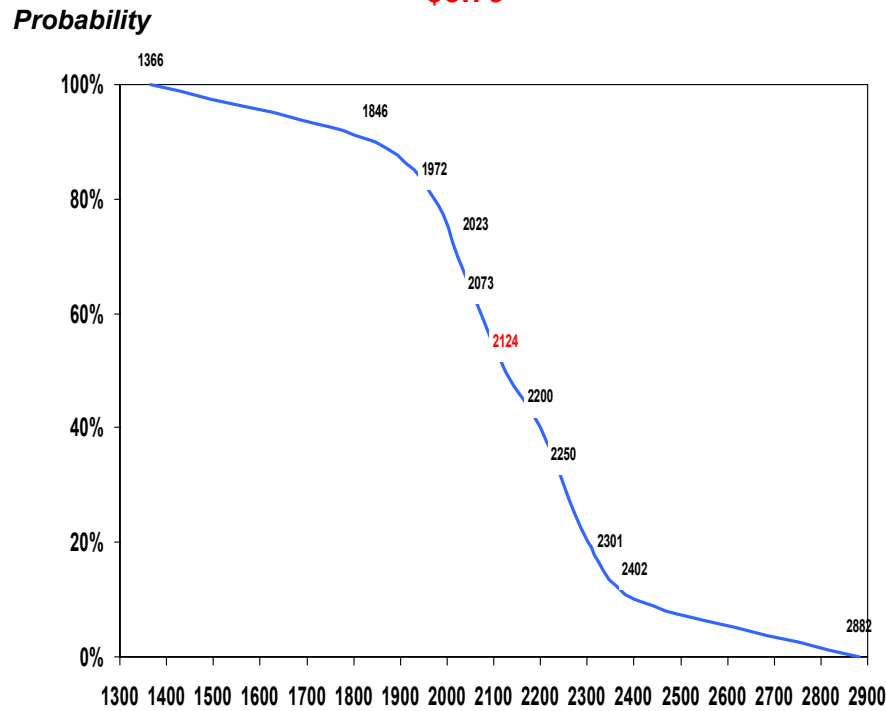
**Forecast Revenue=\$2,270,000**

**Estimated Revenue for Cleaning Foam Sales at \$3.19 and \$3.49 Price Points**

# Revenue Forecast

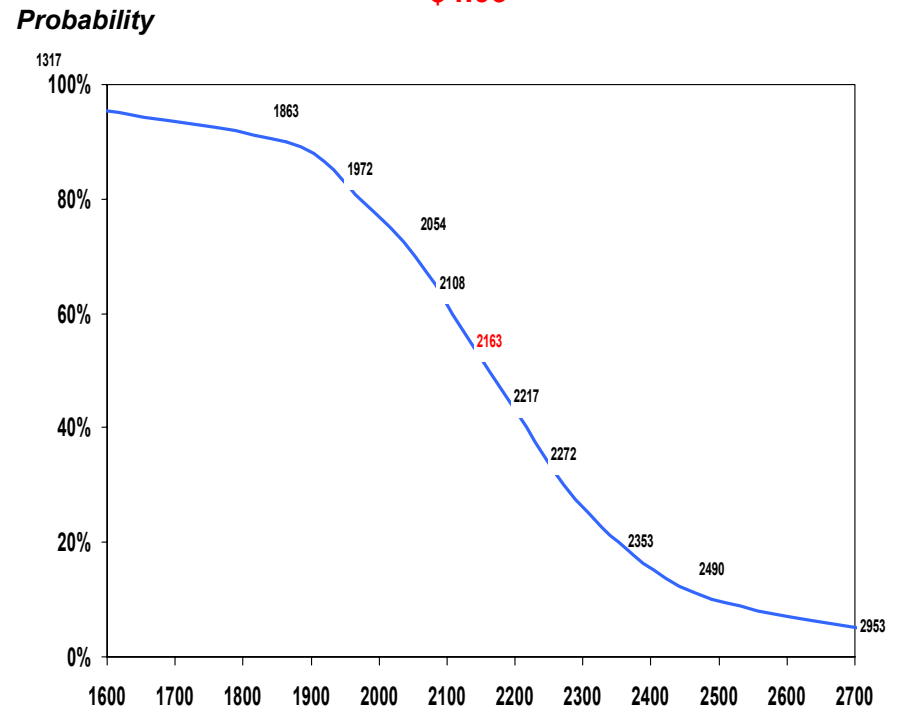
Probability That Revenue Is Greater Than or Equal to Forecast

**\$3.79**



**Forecast Revenue=\$2,124,000**

**\$4.09**



**Forecast Revenue=\$2,163,000**

**Estimated Revenue for Cleaning Foam Sales at \$3.79 and \$4.09 Price Points**

# Revenue Projection Results

- At **\$3.19**, mean expected revenue is \$2,221,220. One can be 90% sure that revenue will exceed \$2,029,800, but only 10% sure that it will exceed the higher amount of \$2,433,867.
- At **\$3.49**, the expected revenue is \$2,269,667. The chances of exceeding the revenue at \$3.19 are 59%.
- At **\$3.79**, expected revenue is \$2,123,800. At this price the chances of exceeding the revenue at \$3.19 are 36%, and at \$3.49, 27%.
- At **\$4.09**, expected revenue is \$2,162,600. One can be 90% sure this revenue will exceed \$1,862,667, but only 10% sure it will exceed \$2,489,800. The chances of exceeding the projections at \$3.19 are 37%; at \$3.49, 29%. Revenue at the latter price is expected to be higher than at \$3.79; the chances of that are 57%.

# ***Price the Foam at \$3.49 . . .***

***Mean Expected Revenue at Tested Price Points***

