Best Practices to Drive your B2B Pricing Strategy

A CASE BASED APPROACH

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Prepared For:

PPS BARCELONA

Agenda

1.	Warm Up	9:00 – 9:30
2.	Bid Pricing	9:30 – 10:15
3.	*Morning Break*	*10:15 – 10:45*
4.	Bid Pricing	10:45 – 12:00
5.	*Lunch*	*12:00 – 1:00*
6.	Financial Value Quantification	1:00 – 2:15
7.	*Afternoon Break*	*2:15 – 2:45*
8.	Price Dispersion to Price Strategy	2:45 – 4:00
9.	Open Discussion	4:00 – 4:30

A little bit about us…

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Revenue Management Labs	Principal
Anheuser-Busch InBev	Director of Revenue Management
Pricing Solutions Ltd.	Senior Consultant
Ford Motor	Parts Pricing Manager
Ford Credit	Deal Loans Manager

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Revenue Management Labs	Principal
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Anheuser-Busch InBev	Pricing Analytics Manager
Pricing Solutions Ltd.	Consultant
Pricing Solutions Ltd.	Pricing Scientist

Warm Up

- We will break up the room into teams of 4 by counting off
- Go to your team number and introduce yourselves
- 1 representative from each team will come up and get a large sticky page and marker
- Appoint a note keeper
- On the flip chart write:

1. What are the 3 biggest challenges your company is dealing with (get alignment)?
2. What is the one word you would use to describe the 3 most challenging issues?

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Bid Pricing

"Getting away from intuition"

B2B Pricing Issues

- Diverse customers who have varied needs (some known, some unknown)
- Often limited knowledge of how customers trade off between price vs. other value attributes
- Doing lots of ”price” quotes without knowing if the customer will buy
  - Leads to inconsistency in price offered
- Pricing and term discussions trade off often intermingled within contract negotiations

Bid Pricing

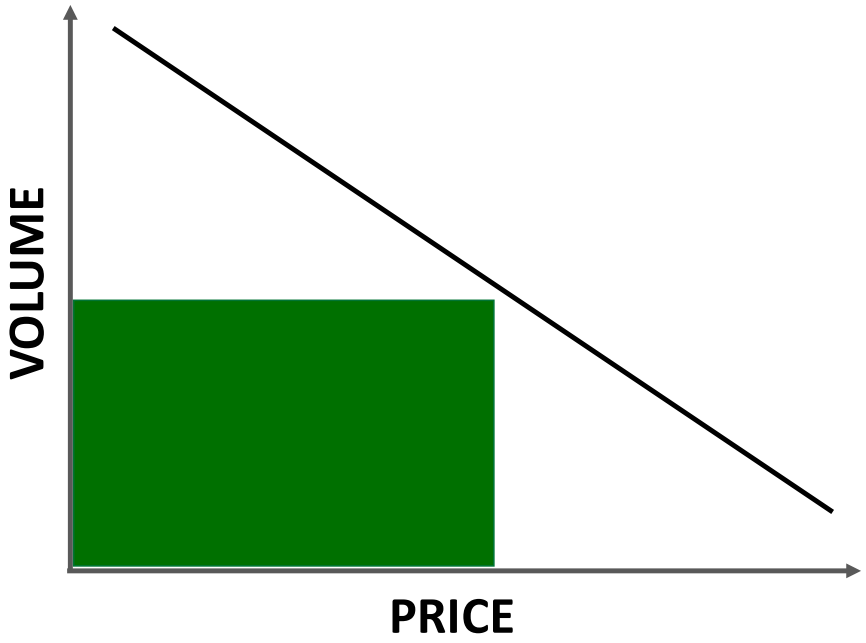
- Can also be called “customized pricing”
- Price is set on a one-to-one basis for customers
  - Contrary to traditional “list” price scenarios (Price List less structured discounts)
  - Often price is quoted as a discount from “list”
- Seller has significant freedom to set price for each ”deal” or transaction
  - Usually packages are highly customized (configuration, time, bundles, etc.)
  - Amount can be firm (single order), uncertain (contract) or price dependent (fulfillment) but usually involves fixed pricing for a certain time period
- Have the ability to understand customer specific pricing vs. market level pricing

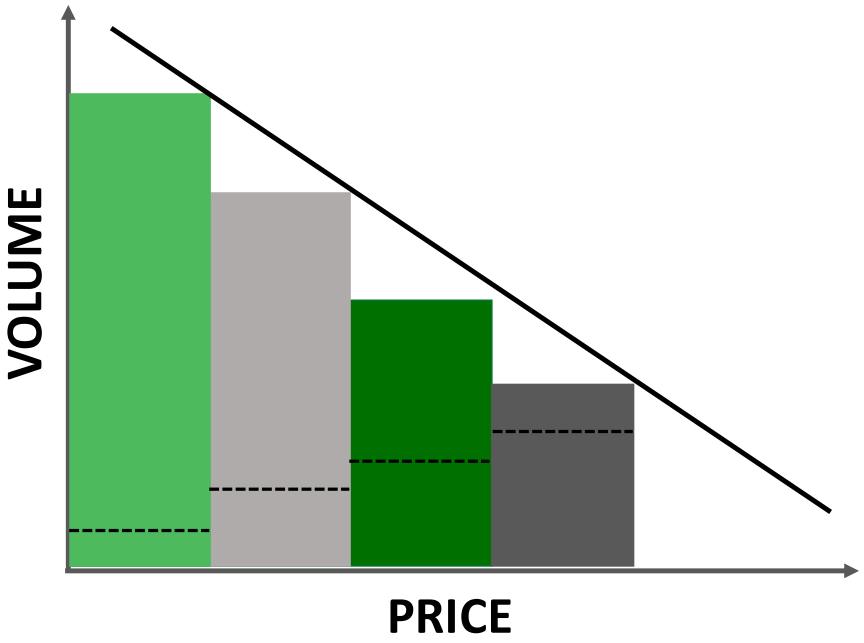
Bid Pricing Ideal Circumstances

Ideal	Less Applicable
• B2B • Many Customers (>100 ~ sample) • Many Transactions (>200 ~ sample) • Direct Sales • Multi Product Selling • Bid or Quote with Terms	• Less then 100 transactions annually • Significant volume in a handful of competitors • Regulatory or market constraints (i.e. minimum pricing) • Products going through distribution • Lack of final price control (i.e. Distributor Channel)

Why is Bid Pricing Different

- Very useful form of price discrimination
  - Maximize revenue/profit on a customer or transaction level which should lead to higher revenue than maximizing on a market level





Bid Pricing vs. ”List” Pricing

1. The ability to quote individual deals or transactions
   - “bid” and ”list” pricing situations often co-exist in the form of special discounts, rebates, special terms etc.

2. The ability to track win/loss data
   - If a “bid” is submitted it is either won or lost
   - This is not the case in most list price scenarios: selling latex gloves to industrial customers via a catalogue, it is unknown how many people considered the purchase

3. The question isn’t “Will they buy?”, rather it is “Who will they buy it from?”
   - This subtlety changes the focus of the price maximization process

Bid Pricing is rooted in PROBABILITY

$$Expected(Profit) = (Size\ of\ Deal) \times (Unit\ Profit) \times Probability(win)$$

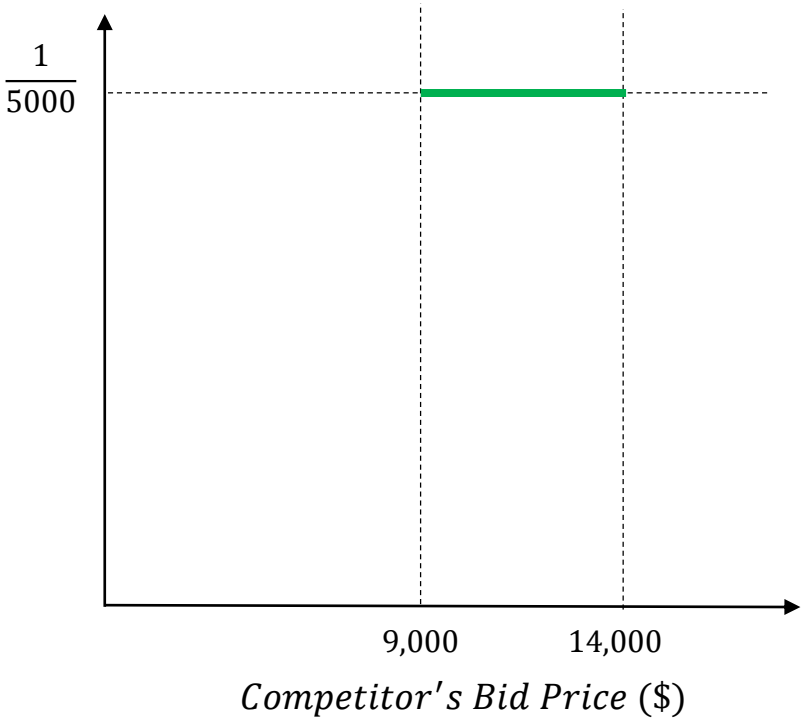
Uncertainty in the probability of winning a bid comes in two forms:

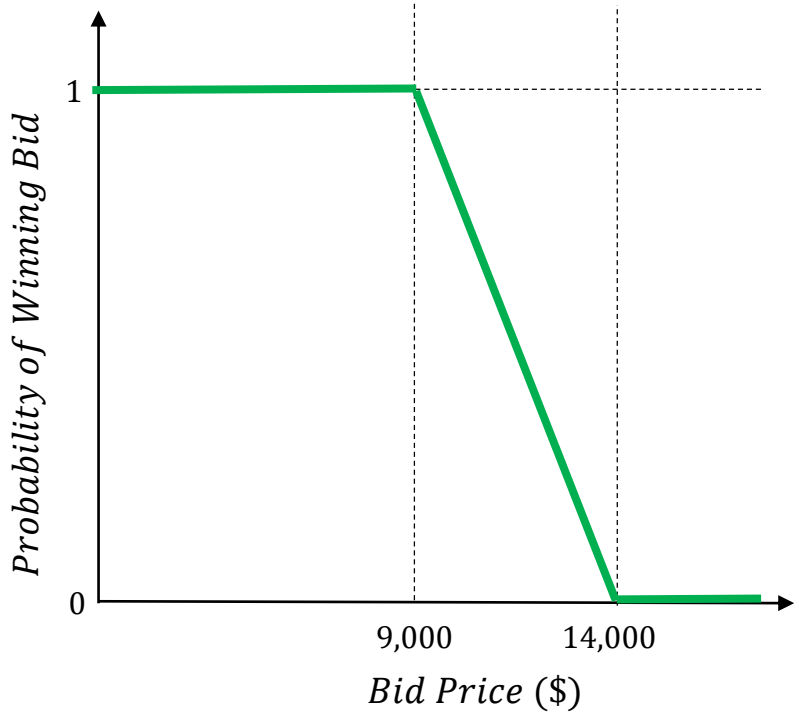
1. **Competitive Uncertainty:** Not knowing what the competition will bid or even how many competitors exist

2. **Preference Uncertainty:** Not knowing exactly what criteria the buyer is evaluating (relationship, quality, etc.) and the perception of competitive offerings
    - There are exceptions in “lowest bid” situations where bidders are pre-qualified (popular in government contracts)

Price Response Curve

- Selling 50 trucks in a bid situation
- Total cost of truck is $10,000
- Only one other competitor who historically bid between $9,000 and $14,000





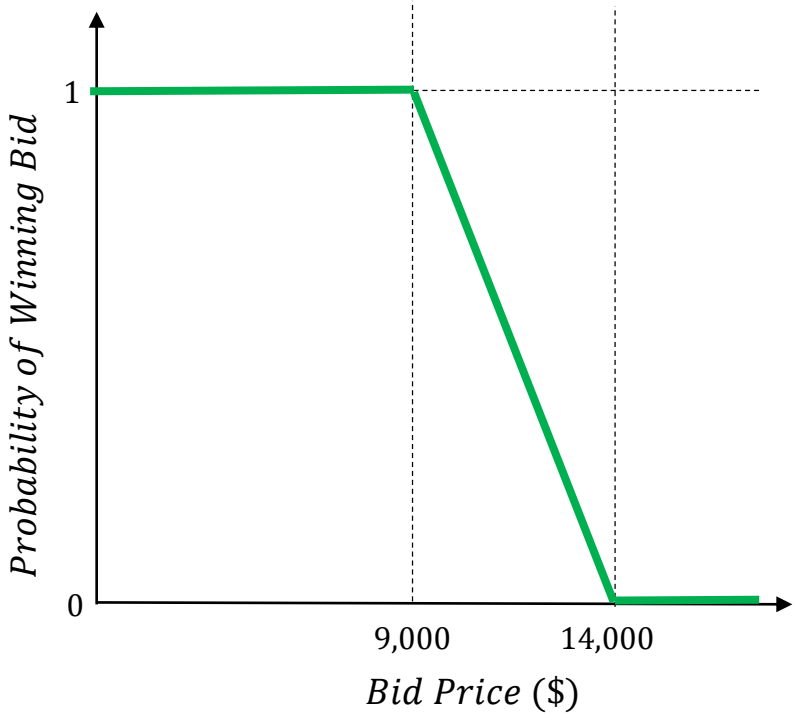
Price Response Curve

$$y = mx + b$$
$$(x_1, y_1) = (9000,1)$$
$$(x_2, y_2) = (14000,0)$$

$$y_1 = mx_1 + b \qquad y_2 = mx_2 + b$$
$$1 = 9000m + b \qquad 0 = 14000m + b$$
$$b = 1 - 9000m \qquad b = -14000m$$

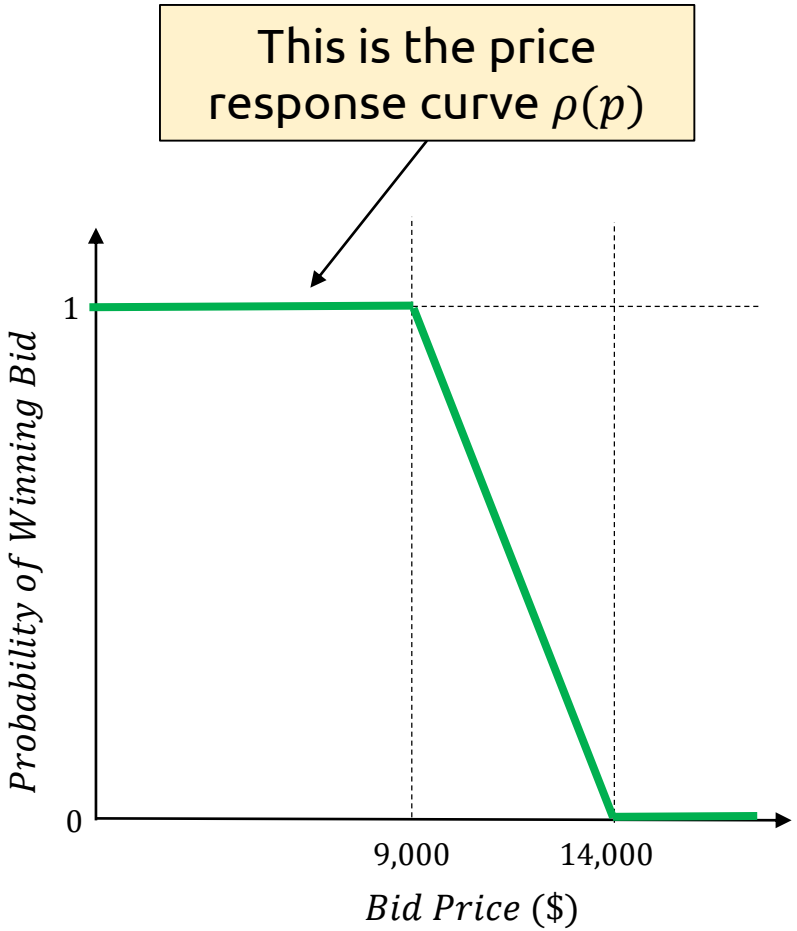
$$1 - 9000m = -14000m$$
$$1 = -14000m + 9000m$$
$$1 = -5000m$$
$$\frac{-1}{5000} = m$$

$$y = mx + b$$
$$y_1 = mx_1 + b$$
$$1 = -\frac{1}{5000}(9000) + b$$
$$1 = -1.8 + b$$
$$2.8 = b$$



$$\rho(p) = 2.8 - \frac{p}{5000}$$

Price Response Curve



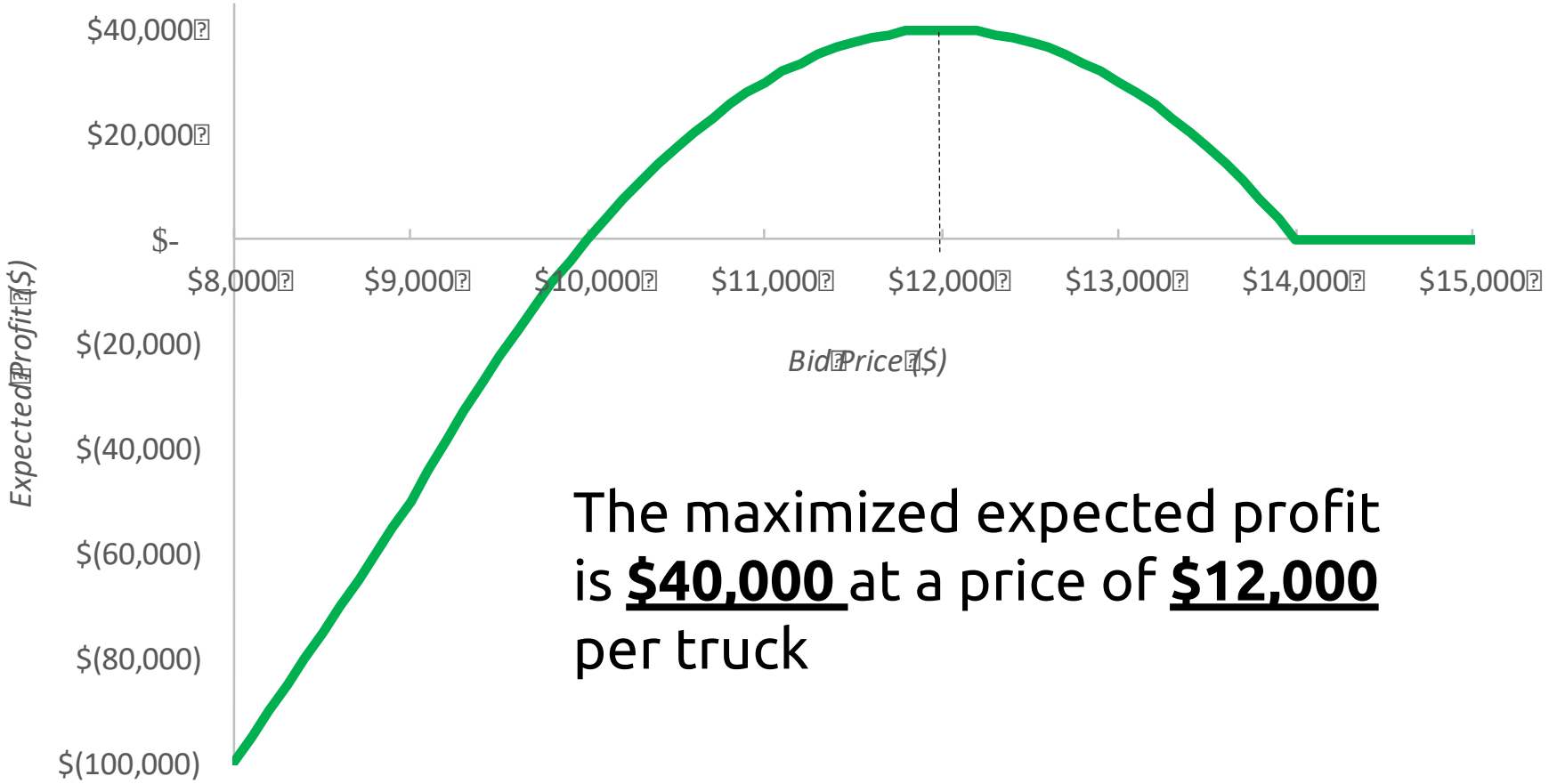
$$\rho(p) = \begin{cases} 1 \ for\ p < \$9{,}000 \\ 2.8 - \frac{p}{5000} \ for\ \$9{,}000 \le p \le \$14{,}000 \\ 0 \ for\ p > \$14{,}000 \end{cases}$$

$$E[Profit] = (Size) \times (Prob.) \times (Unit\ Margin)$$

$$E[Profit] = 50(2.8 - \frac{p}{5000})(p - 10{,}000)$$

- The optimized price for the bid is where expected Profit is the highest

Profit Optimized



The maximized expected profit is **$40,000** at a price of **$12,000** per truck

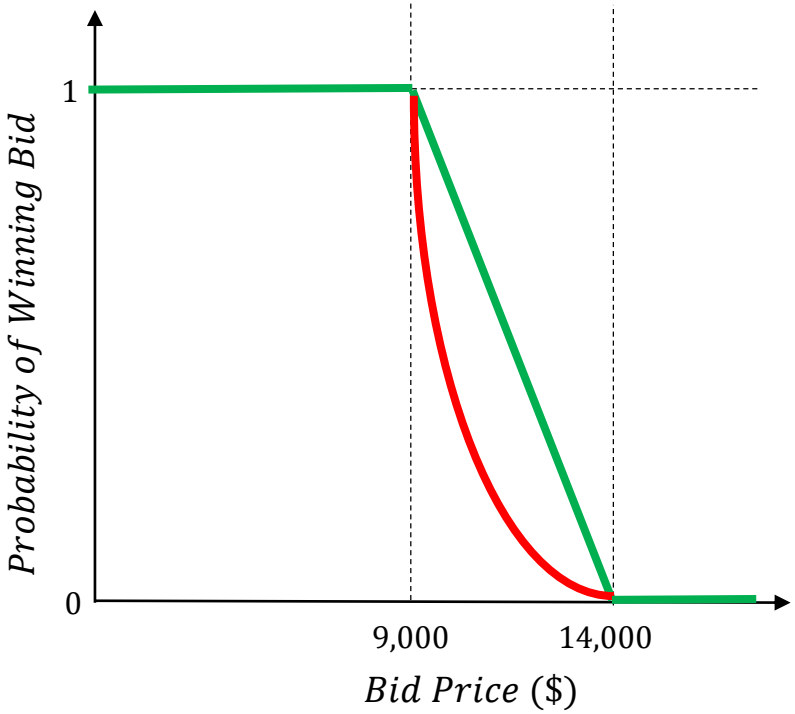
Bid Price Elasticity

- An optimized expected profit doesn't always guarantee the business
- It is often valuable to understand the impact of deviating from the optimized price

$$Bid\ Response\ Elasticity = \frac{p^*}{p^* - cost}$$

- Where p^* is the optimal price
- **Interpretation:**
  - A Bid Response Elasticity of 5 means that for a 1% price increase will lead to a 5% decrease in the probability of winning

Expansion: Price Response Curve *Multiple Competitors*



Single Competitor:

$$\rho(p) = (2.8 - \frac{p}{5000})$$

Two Competitors:

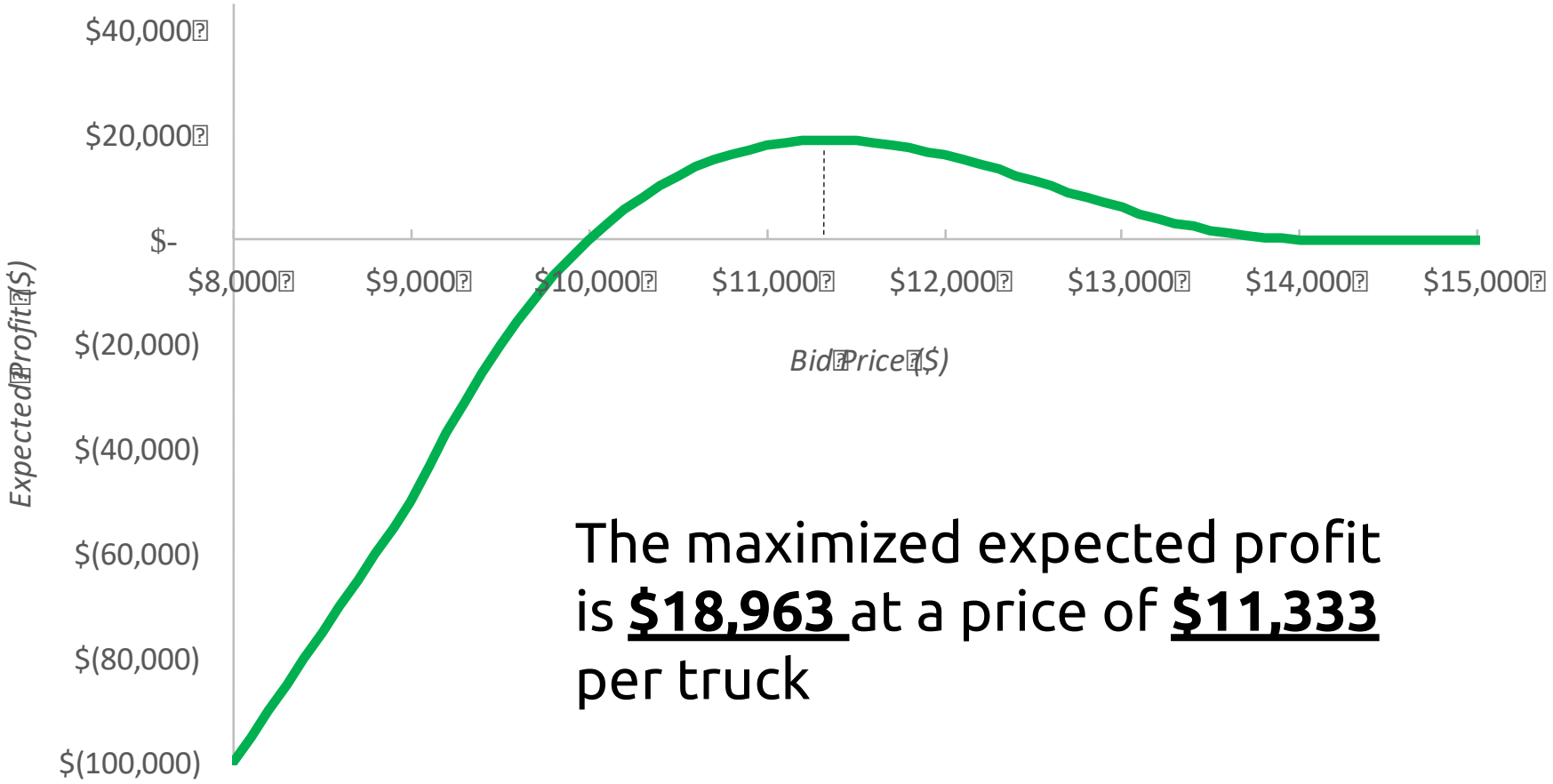
$$\rho(p) = \left(2.8 - \frac{p}{5000}\right)^2$$

N Competitors:

$$\rho(p) = \left(2.8 - \frac{p}{5000}\right)^n$$

- In general as the number of competitors increase, the price response curve becomes steeper and lowers the optimal bid price (assuming competitors behave similarly)

Profit Optimized

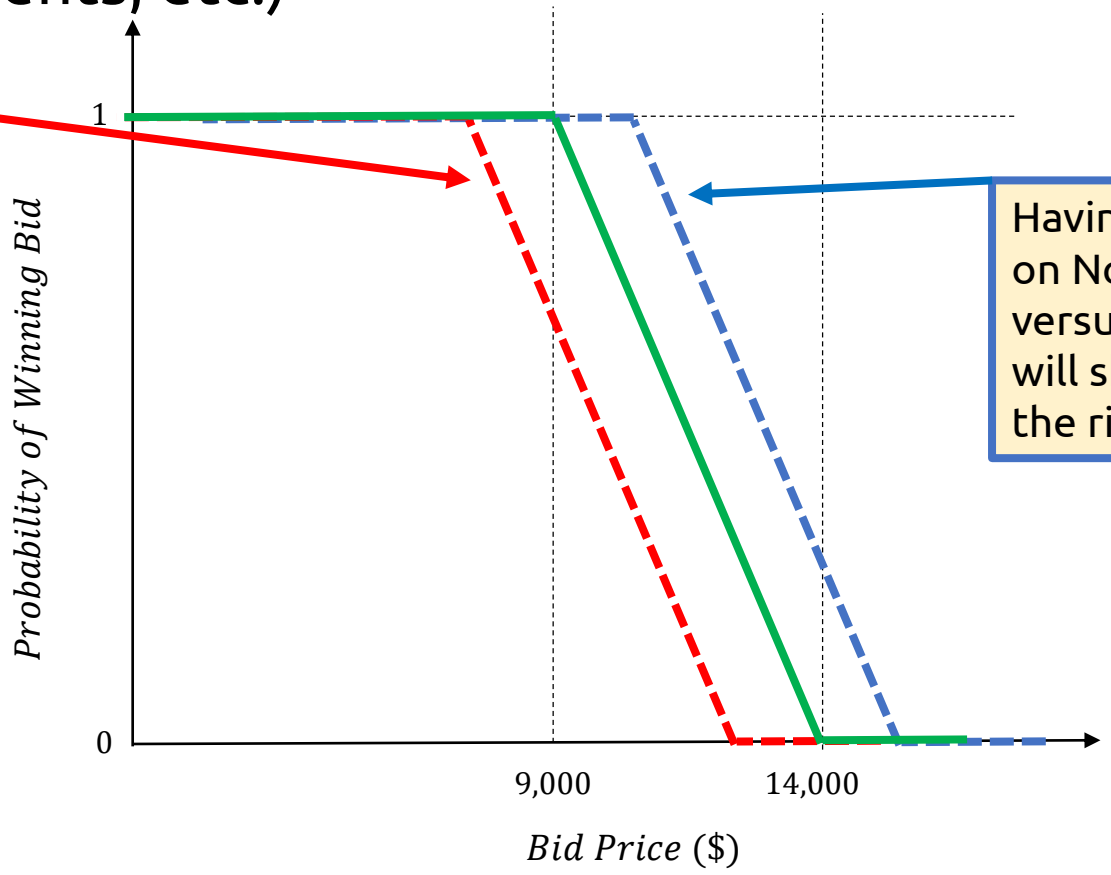


The maximized expected profit is **$18,963** at a price of **$11,333** per truck

Expansion: Price Response Curve *Non Price Factors*

- In many cases, buyers are considering other variables along with price (e.g.. Experience, Relationship, Technical Components, etc.)

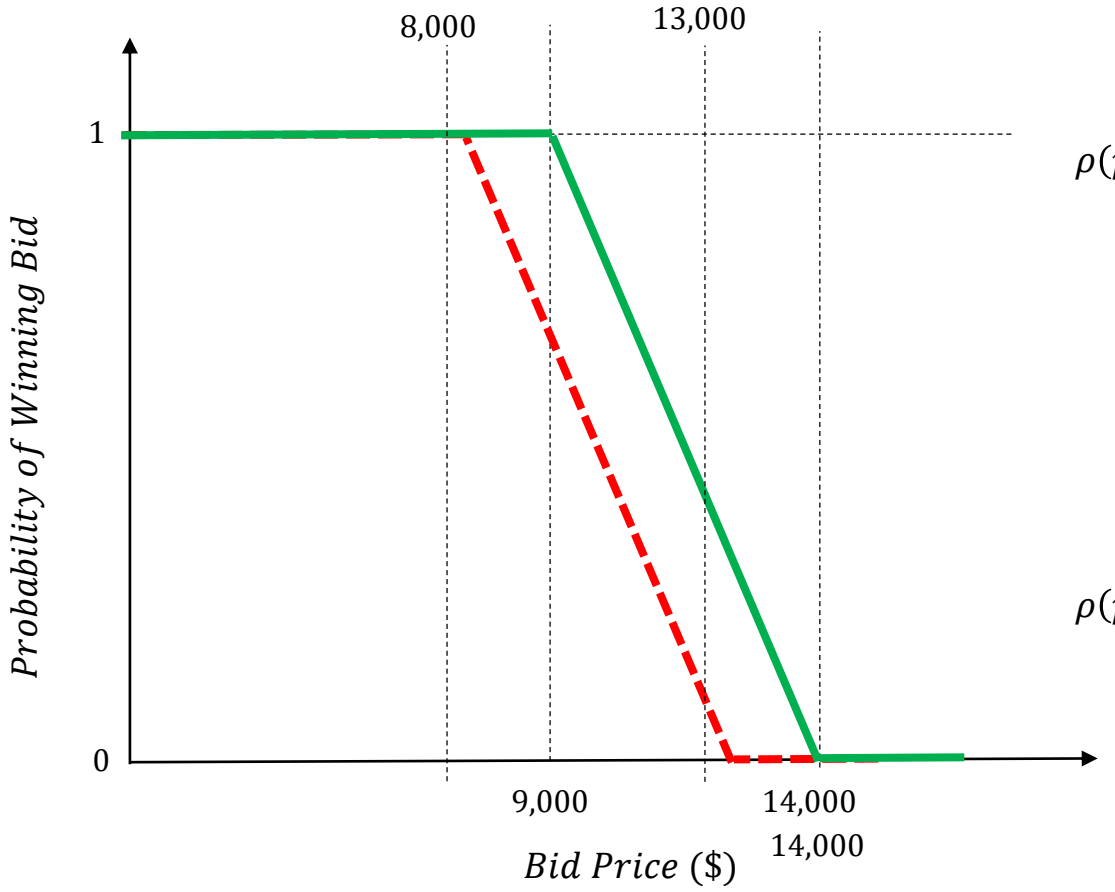
Having an ***disadvantage*** on Non Price factors versus competition will shift the curve to the left.



Having an ***advantage*** on Non Price factors versus competition will shift the curve to the right.

Expansion: Price Response Curve *Non Price Factors*

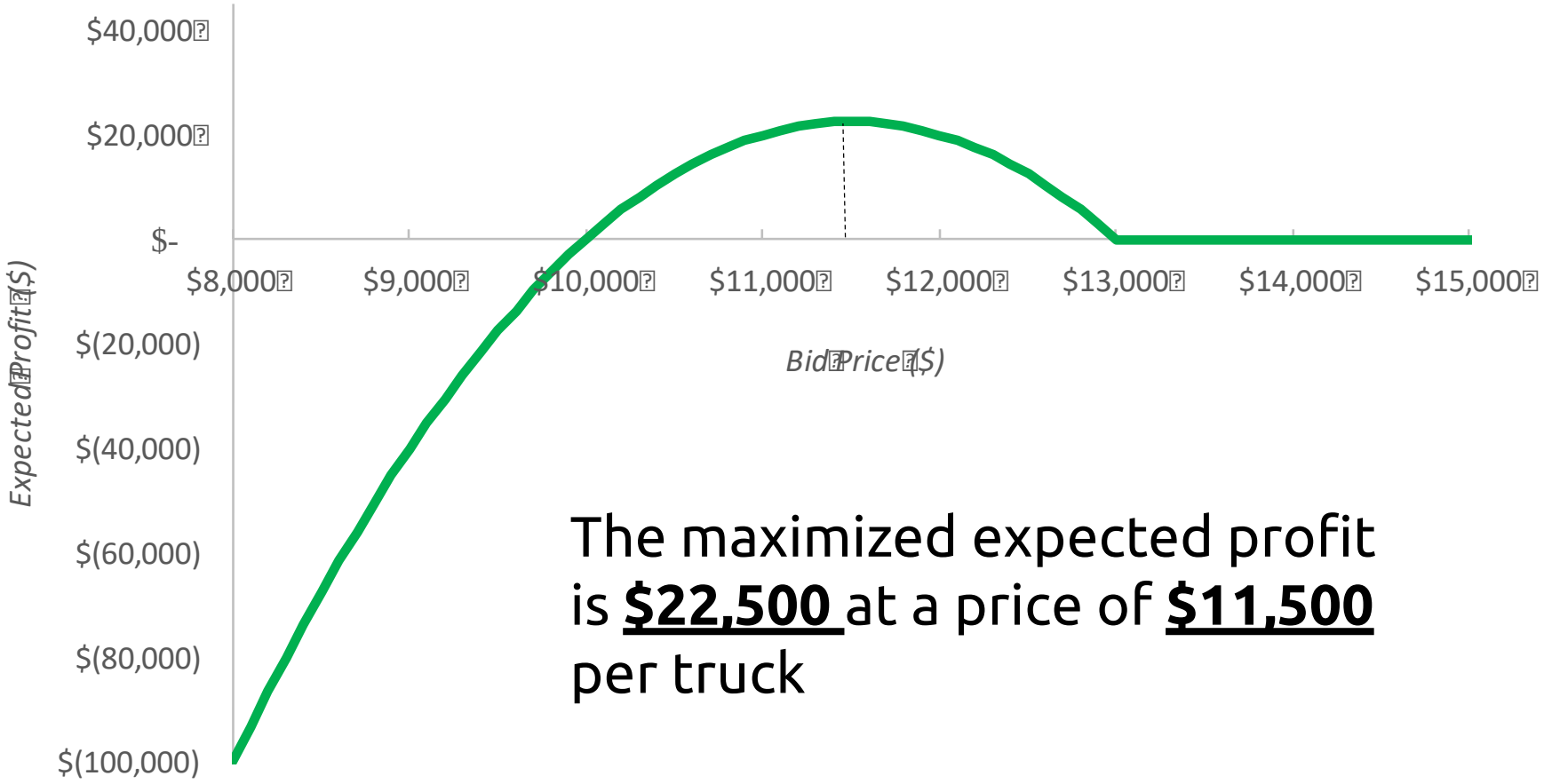
- Example: If the competitor has a $1,000 advantage due to their technical expertise



$$\rho(p) = \begin{cases} 1 \ for \ p < \$9{,}000 \\ 2.8 - \frac{p}{5000} \ for \ \$9{,}000 \ \leq p \leq \$14{,}000 \\ 0 \ for \ p > \$14{,}000 \end{cases}$$

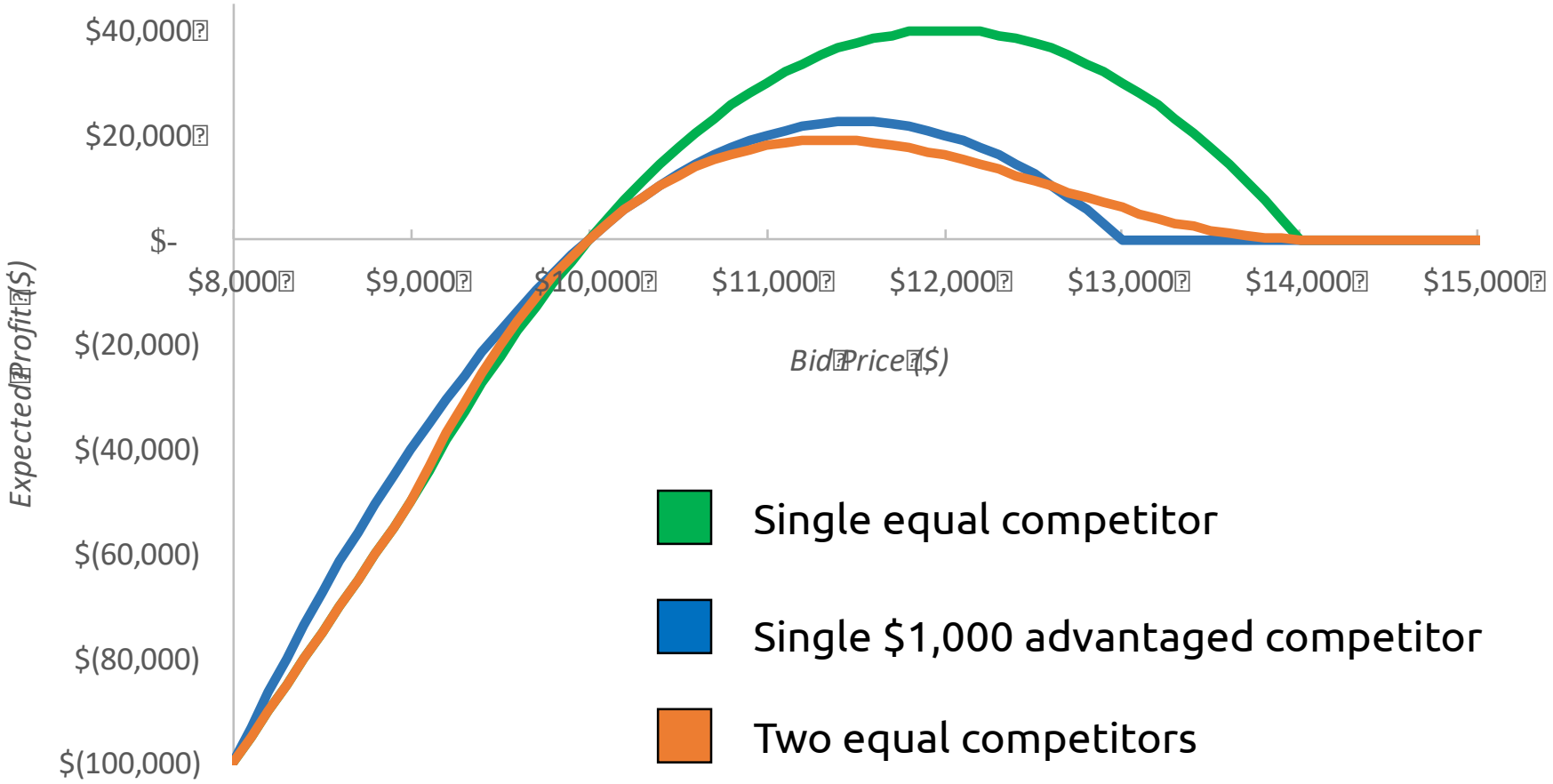
$$\rho(p) = \begin{cases} 1 \ for \ p < \$8{,}000 \\ 2.6 - \frac{p}{5000} \ for \ \$8{,}000 \ \leq p \leq \$13{,}000 \\ 0 \ for \ p > \$13{,}000 \end{cases}$$

Profit Optimized



The maximized expected profit is **$22,500** at a price of **$11,500** per truck

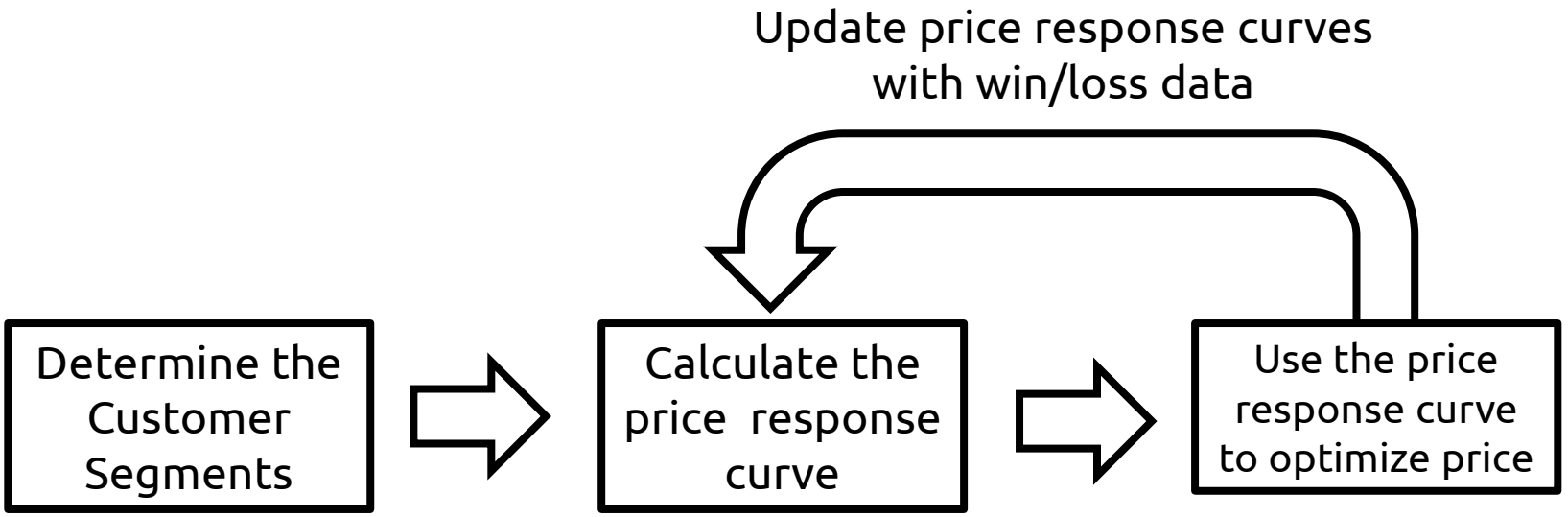
Getting the Right Price Response Curve Matters!



Getting a Price Response Curve

1. Use a probability distribution to estimate competitors response (much like the earlier example).
   - **PROs:** Very quick implementation and no historical data needed
   - **CONs:** Curves are not overly realistic and overarching assumption on which probability distribution to pick
2. Use an expert team from within the business
   - **PROs:** This can be a great way to quantify non-price value being brought to the marketplace and no historical data needed
   - **CONs:** It is difficult to “draw a curve” through discussion and judgment
3. Utilize historical data to do statistical analysis
   - **PROs:** Most accurate representation of the marketplace based on **ACTUAL** data from within the organization
   - **CONs:** Need resources with an understanding of statistical concepts

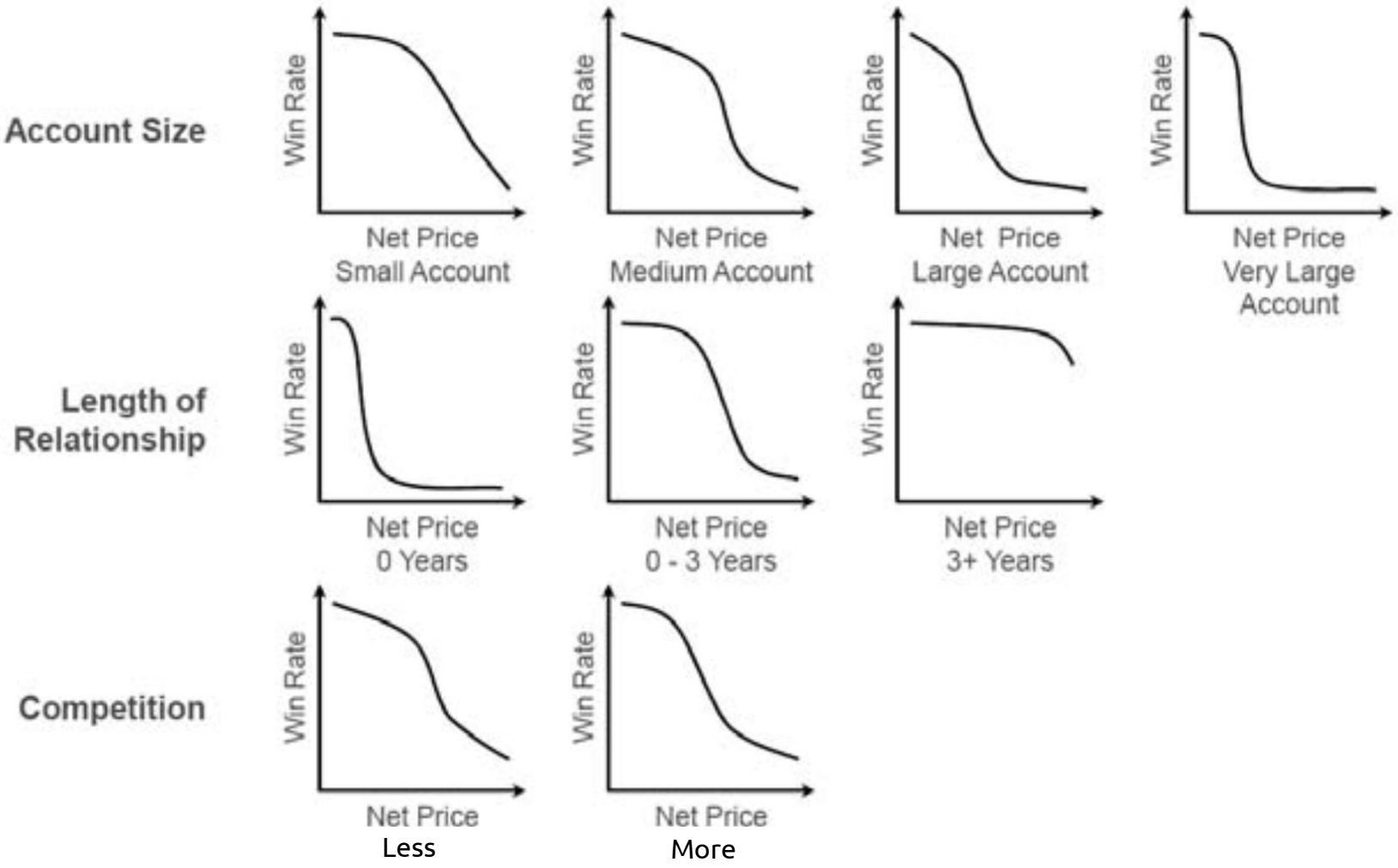
Bid Price Optimization Process



Customer segmentation:

- Best Practice is determining by structured statistical analysis
- Grouping likewise customers based on expert panel is an option if time/resource constrained
- Typical segmentations include: size, tenure, product mix, geography, competition, current margin, etc.

Typical Price Response Curves



Estimating a Bid Response Curve

- A sample data set is show below

Bid	Price	Competitor Price	Bid Size	Win/Loss
1	$8.22	$8.37	267	1
2	$10.01	$9.32	480	0
3	$8.47	$8.63	217	0
4	$8.77	$8.99	302	1
5	$9.10	$9.02	301	1
6	$9.03	$10.01	240	1
7	$9.55	$8.77	237	1
8	$8.99	$9.37	225	0
9	$9.31	$8.59	243	0
10	$9.22	$8.99	311	0

Baby Example:
Simple Binary Regression

- This is useful model when:
  - In an open bidding situation (visibility into competitive prices)
  - Small data set is available (< 100 bids)
- Fairly straight-forward to implement
- Limited to a single explanatory variable

$$Probability(win) = \frac{1}{1 + r^{Y}}$$

$$r = price\ ratio = \frac{price}{competitor\ price}$$

$$Y > 1\ is\ a\ parameter\ of\ the\ model\ to\ be\ estimated$$

Baby Example:
Simple Binary Regression

Using Excel Solver:
Objective: Minimize (SSE)
By Changing: Y

Y	10.657

= (W/L-Win Prob.)^2
=(1-0.548)^2

Bid	Ratio	W/L	Win Prob	Square Error
1	0.982	1	0.548	0.204
2	1.074	0	0.318	0.101
3	0.981	0	0.550	0.302
4	0.976	1	0.566	0.189
5	1.009	1	0.476	0.274
6	0.902	1	0.750	0.063
7	1.089	1	0.287	0.508
8	0.959	0	0.609	0.370
9	1.084	0	0.298	0.089
10	1.026	0	0.433	0.188

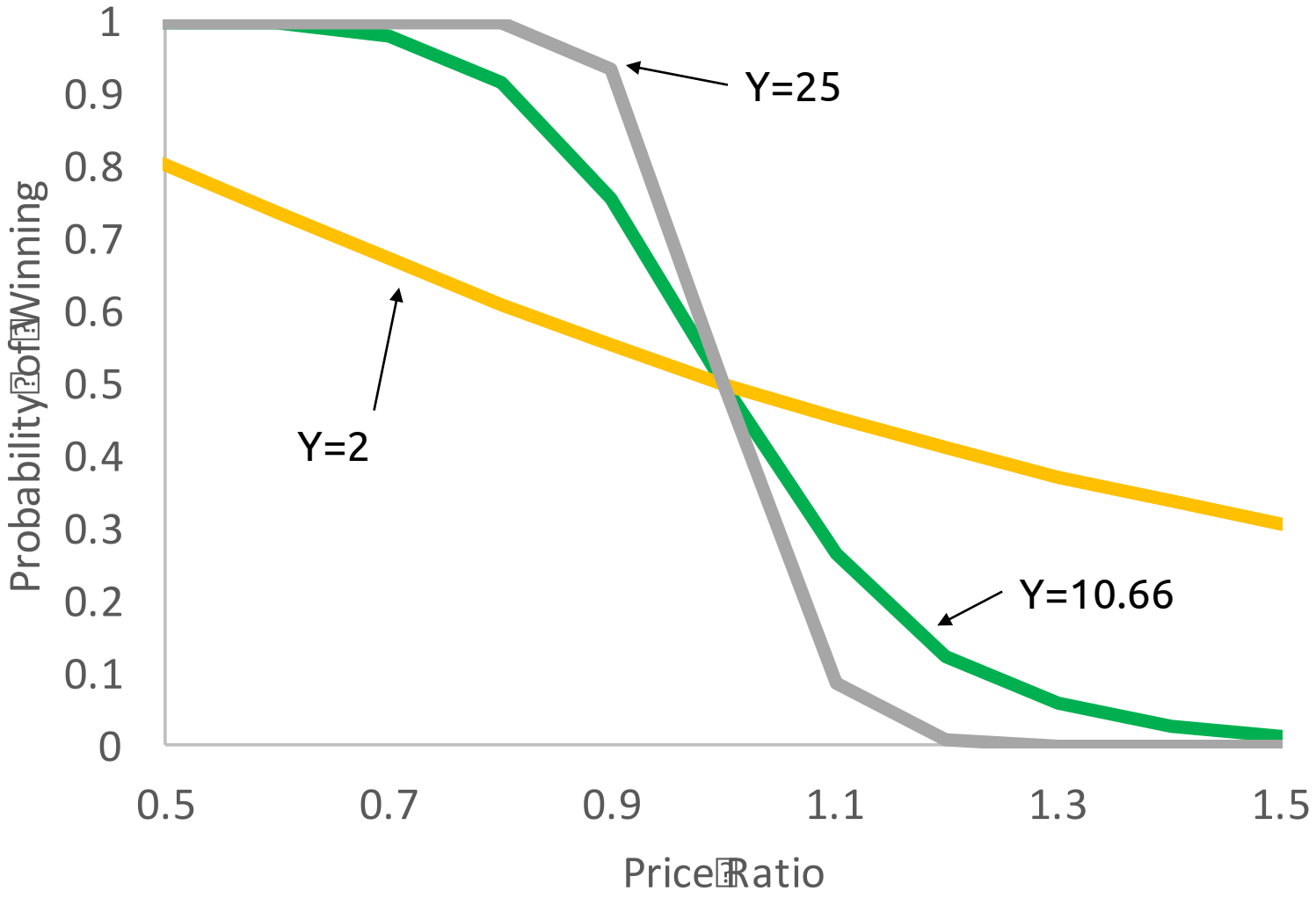
Win Prob. = 1/(1+0.982^10.657)

Price Ratio = Price/Comp. Price

SSE	2.287

Sum of all the Square Errors

Baby Example:
Simple Binary Regression



Junior Example:
Logit Model using MLE

- This is useful model when:
  - Cannot see competitors bid price (cannot compute ratio)
- Scalable in terms of complexity (can be tricky)
  - Need to have a sufficient system/solver to scale large instances
- Include many explanatory variables
- Needs larger data sets (>300 bids)
  - Still valid on smaller data sets but sensitivity becomes an issue

$$Probability(win) = \frac{1}{1 + \exp(a + b * Price)}$$

$$a, b \; are \; parameters \; of \; the \; model \; to \; be \; estimated$$

Junior Example:
Logit Model using MLE

Using Excel Solver:
Objective: Maximize Sum(LN(Likelihood))
By Changing: a,b

a	-10.898
b	1.202

Sum	-6.546

Sum of all the LN(Likelihood)

Bid	Price	W/L	Win Prob	Likelihood	LN(likelihood)
1	$8.22	1	0.734	0.734	-0.309
2	$10.01	0	0.243	0.757	-0.279
3	$8.47	0	0.672	0.328	-1.114
4	$8.77	1	0.588	0.588	-0.531
5	$9.10	1	0.490	0.490	-0.714
6	$9.03	1	0.511	0.511	-0.672
7	$9.55	1	0.358	0.358	-1.026
8	$8.99	0	0.523	0.477	-0.740
9	$9.31	0	0.427	0.573	-0.557
10	$9.22	0	0.454	0.546	-0.605

= 1/(1+EXP(1.202 + -10.989*8.22))

=W/L*Win Prob. + (1-W/L)*(1-Win Pron.)
=1*.734+(1-1)*(1-.734)

= LN(0.734)

Scaling Up:
Logit Model using MLE

- We can start to scale the logit model by adding more explanatory variables:

$$Probability(win) = \frac{1}{1 + \exp(a + b * Price + c * Comp.Price)}$$

$$a, b, c \; are \; parameters \; of \; the \; model \; to \; be \; estimated$$

$$Probability(win) = \frac{1}{1 + \exp(a + b * Price + d * Comp.Price + d * Size)}$$

$$a, b, c, d \; are \; parameters \; of \; the \; model \; to \; be \; estimated$$

Interpreting The Coefficients

a	-5.474
b	1.418
c	0.001
d	-0.838

- Take as an example the model:

$$Probability(win) = \frac{1}{1 + \exp(a + b * Price + d * Comp.Price + d * Size)}$$

- A single unit change in price ($1.00) changes the odds of winning by 1/(1+exp(1.418)).
- The best way to see the impact is to calculate the probability

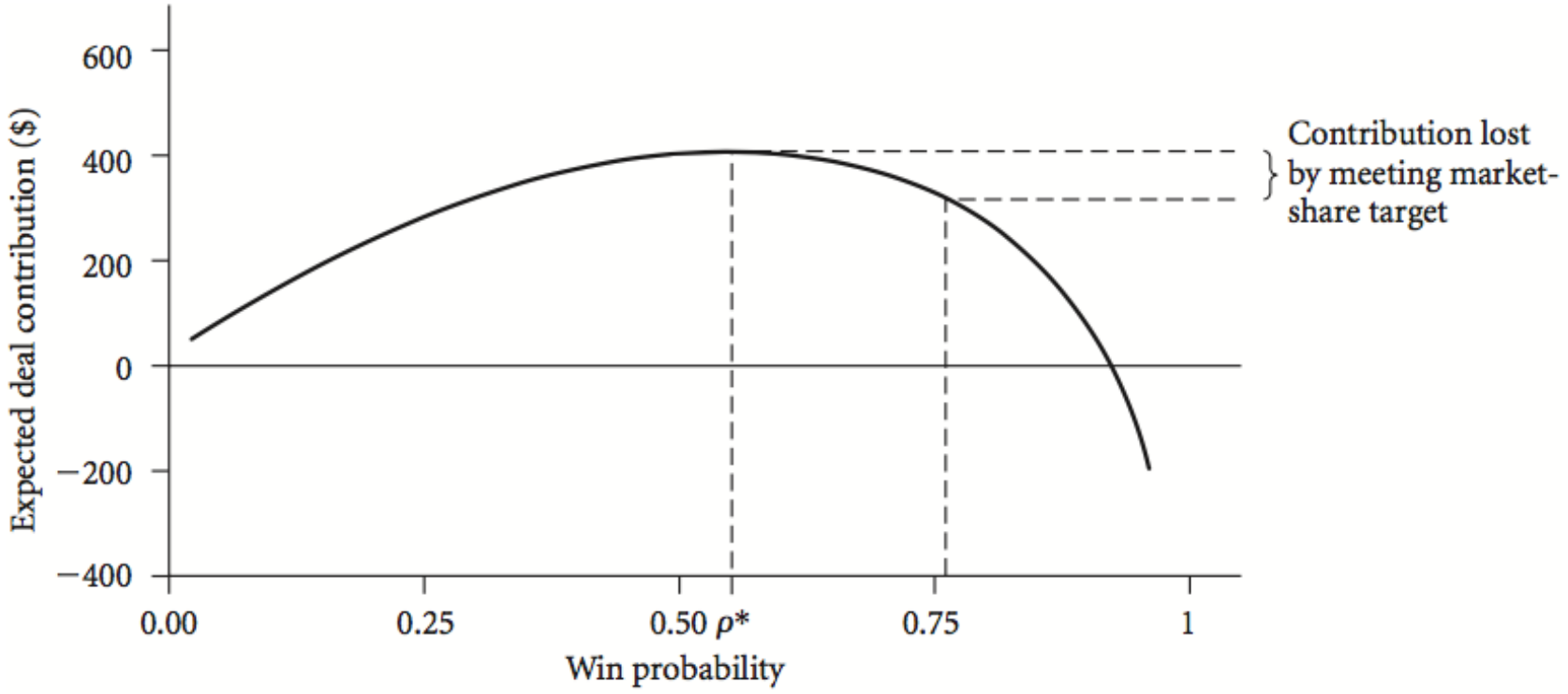
Price	Competitor Price	Bid Size	Win Prob
$[illegible]9.00	$[illegible]8.00	100	0.344
$[illegible]8.00	$[illegible]8.00	100	0.684
			0.340

A **$1.00** price decrease increases the probability of winning the bid by **34%**

Bid – Exercise

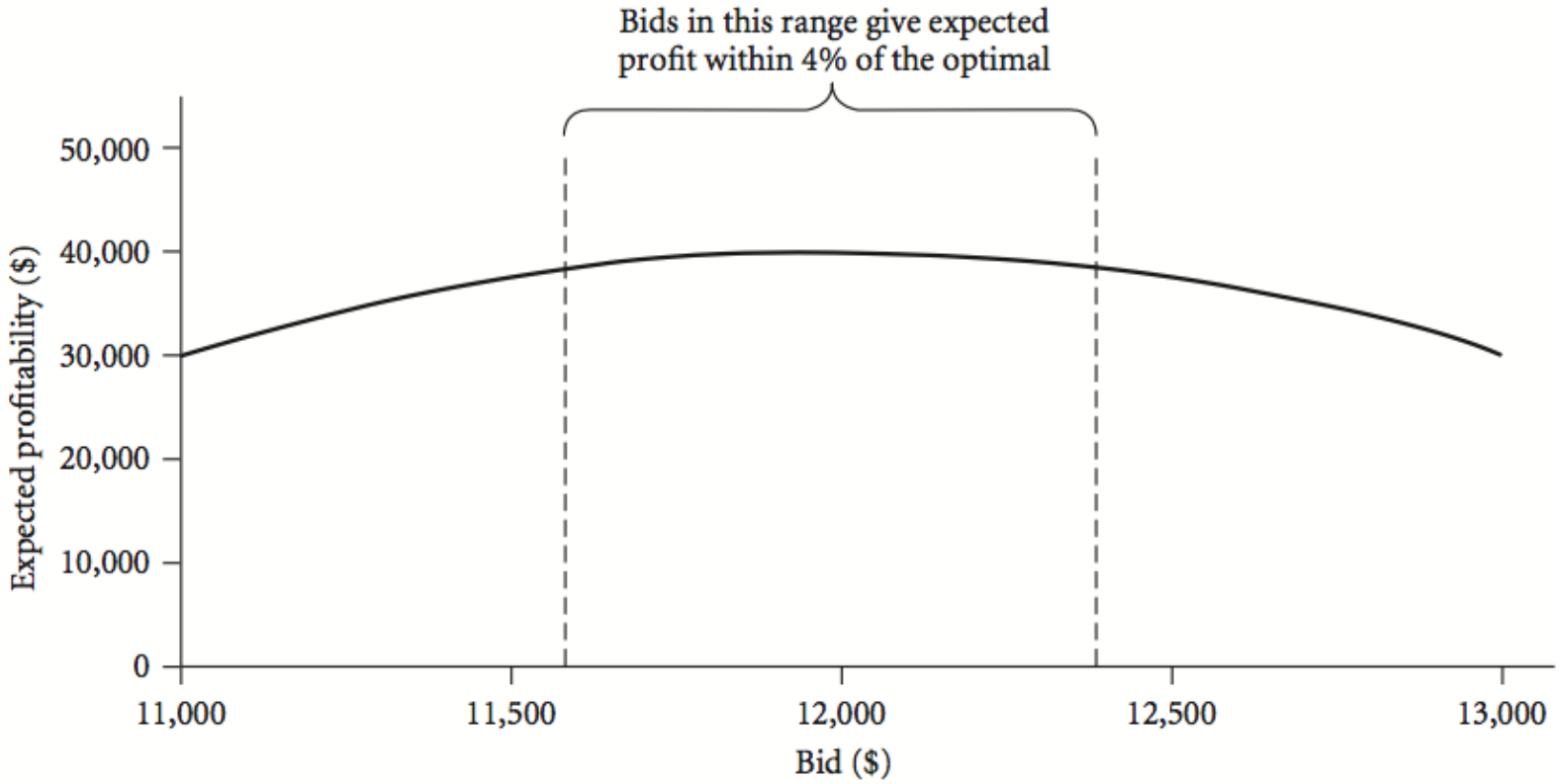
Practical Takeaways

- Optimal bid price is calculated using math without regard for other variables.
- Make sure to look out for business constraints (e.g.. Market share targets, capacity, etc.)



Practical Takeaways

- Understand the sensitivity and tradeoffs of choosing a price point and when to pushback



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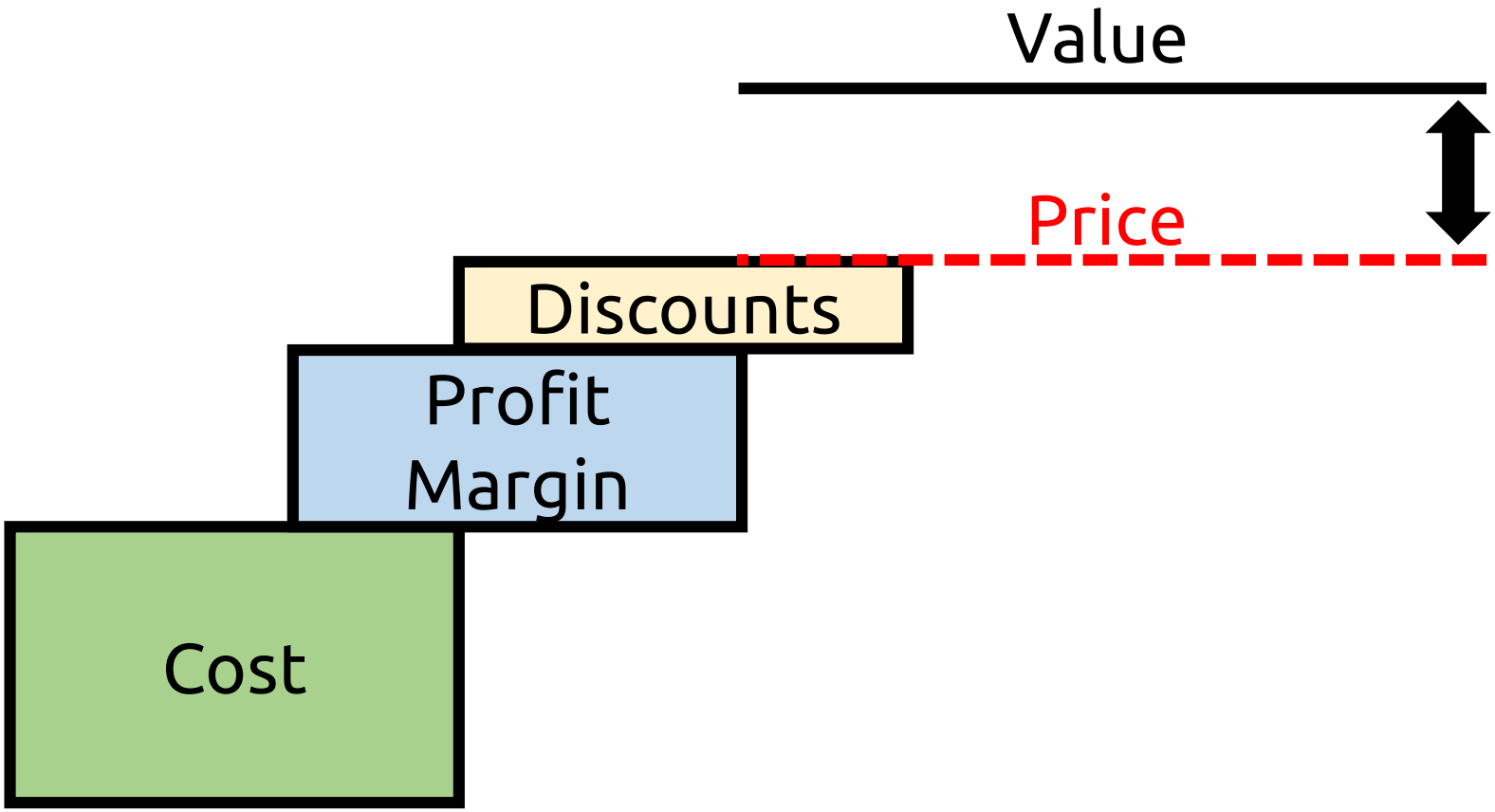
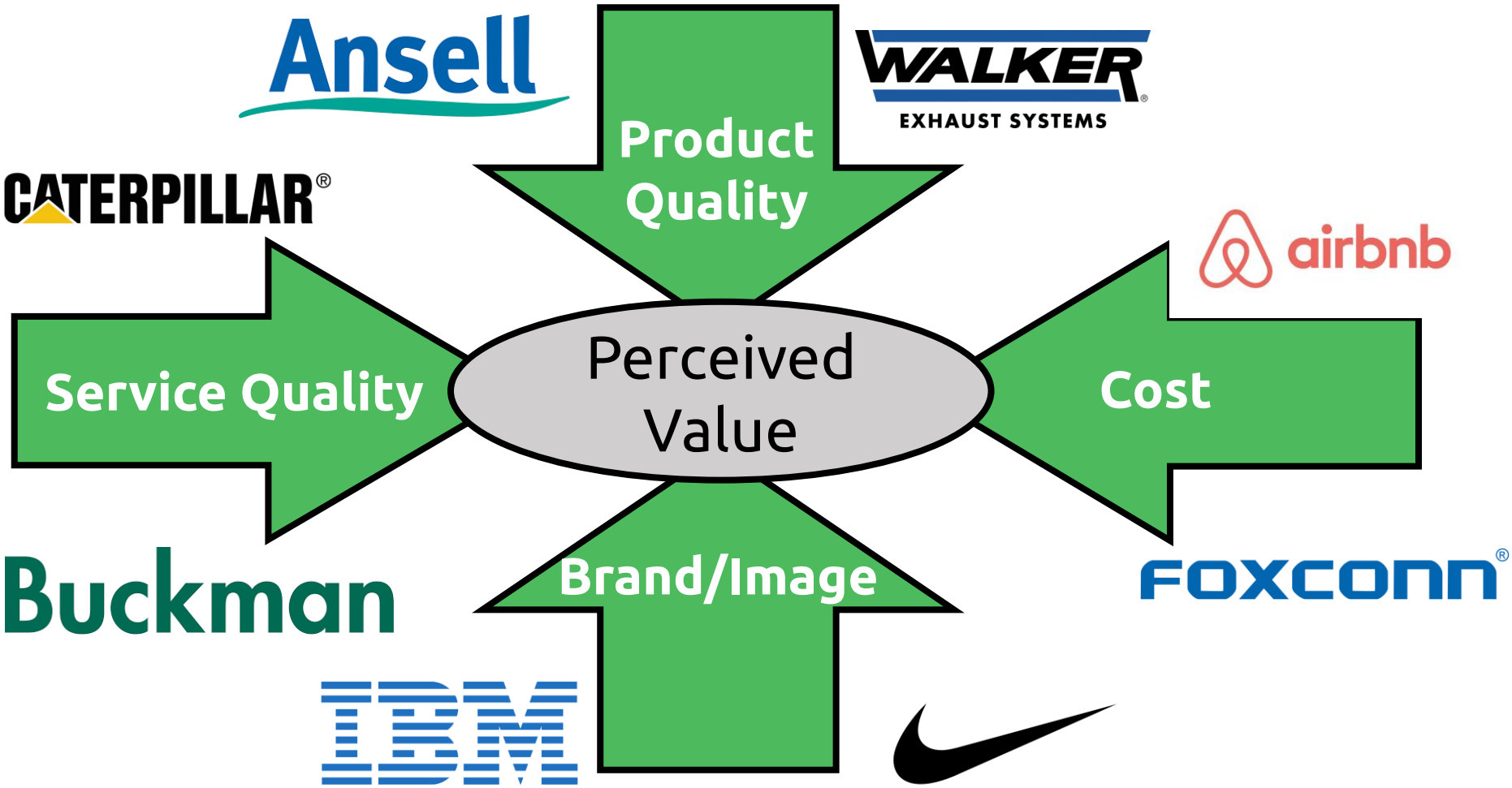
Financial Value

"Show me the numbers"

Setting a Price



Foundations of Perceived Value



Who's Ready for a Beer?

Craft?

Low calories?

On deal?

Easy to dispose?

Enough for a party?

Will not get me drunk?

Impress company?

Get me drunk fast?

Make me look cool?

Light taste?

Cheap?

What my BF/GF wants?

Two Ways to Assess Value

PERCEIVED VALUE

FINANCIAL VALUE

Financial Value Measurement (FVM)

What is it?

An Offer's Financial Value is the price of the customer's best alternative plus the value of whatever differentiates the offering.

When is it required?

- Every B2B offering should have this completed (remember bid pricing and shifting curves?)

Eliminate Flat Tires Forever!

Even in the most hazardous environments, tires filled with TyrFil can never go flat. Our tire fill product allows equipment to operate over broken glass, nails, sharp metal, rocks, etc.

Source: *http://www.accellatirefill.com*

Eliminate Flat Tires Forever!

Even in the most hazardous environments, tires filled with TyrFil can never go flat. Our tire fill product allows equipment to operate over broken glass, nails, sharp metal, rocks, etc.

Why Use TyrFil?

Cost-Effective

- Minimizes wear and tear on vehicles
- Eliminates emergency maintenance calls
- Eliminates downtime back charges

Safe

- Improves vehicle stabilization
- Promotes operator safety
- Minimizes worker compensation claims

Performance

- Lowers G-force impact
- Maintains a high heat resistance profile
- Runs faster for longer periods of time

Source: *http://www.accellatirefill.com*

Financially Demonstrating Value

Cost associated with Flat Tires	12 x 16.5	
A. Flat Repair Cost	125.00	*Includes road service charges, demounting, puncture repair and remounting*
B. Down time per flat	2	*Average in hours*
C. Number of workers idled	2	*Equipment operator and all other workers idled due to downed equipment*
D. Hourly pay rate	25.00	*Includes fringe cost*
E. Production rate	80.00	*In dollars per hour*
F. Total flats for tire life	3	*Number of flats over the tires life*
1. Repair Costs	$ 375.00	
2. Cost of idle labor	$ 300.00	
3. Cost of lost production	$ 480.00	
4. Total costs for flats	$ 1,155.00	
5. Projected cost Flatproof	250.00	*Cost of projected flat proof product*
6. Savings with flatproofing	$ 905.00	

Source: *http://www.accellatirefill.com/resources/profit-analysis/#*

Financial Value Measurement Process

1. Determine which customer segment you are analyzing

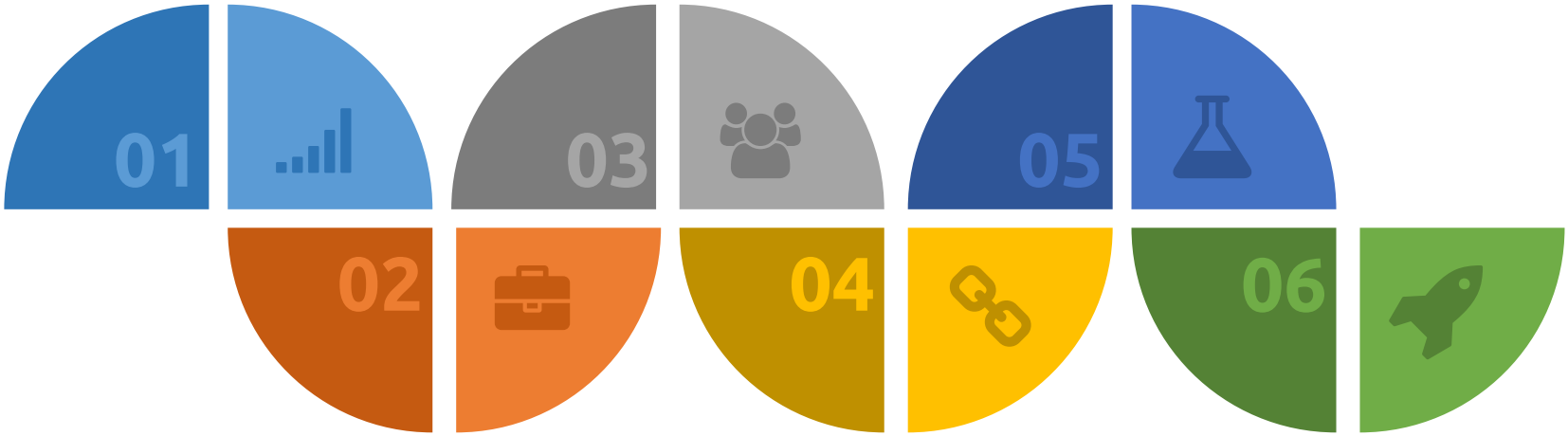
2. Identify relevant competitive alternatives & obtain price

3. Identify key drivers that will impact customer financial value

4. Quantify impact of your offering on customer segment

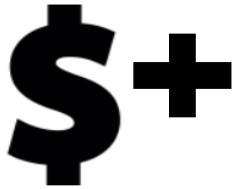
5. Determine how much value you are sharing with customer and if pricing adjustment required

6. Formalize financial value measurement into a Sales Story



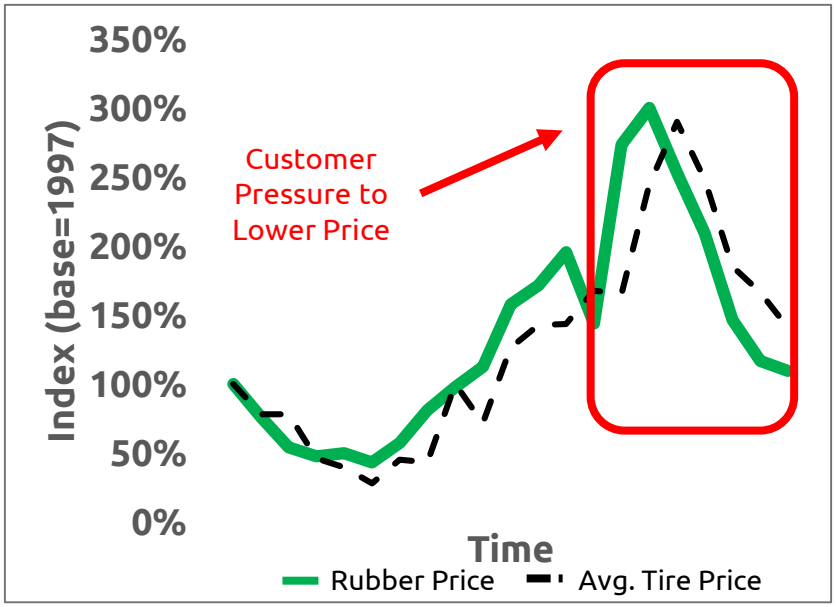
FINANCIAL VALUE MEASUREMENT

Case Background

INDUSTRY	Aircraft Tire Manufacturer	
REVENUE	Fortune 500	**+$10 Billion**
PERFORMANCE	Steady volume growth with slow margin improvement	
REVENUE MANAGEMENT	Cost Plus Mentality (Rubber Commodity Driven)	

BACKGROUND

Rubber Price Index vs. Avg. Tire Price



Industry tire prices tied to rubber costs with customers pressuring manufacturers to quickly adapt offers to reflect updated cost per LB

R&D developed a new tire that used 20% less rubber (lighter) than existing products

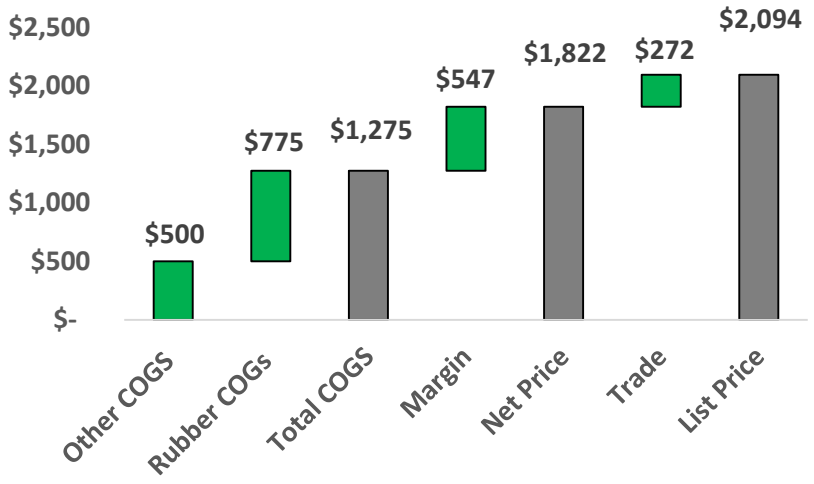
	Current	New (R&D)	
List Price	$ 1,800	$ 1,440	
Trade	$ 235	$ 188	
Net Price	$ 1,565	$ 1,252	
Total COGS	$ 1,096	$ 1,275	
Other COGS	$ 127	$ 500	295%
Rubber COGs	$ 969	$ 775	-20%
Margin %	30.0%	-1.9%	
Margin $	$ 470	$ (23)	

Increased manufacturing cost meant that indexing the price to the rubber market resulted in negative margin

BACKGROUND

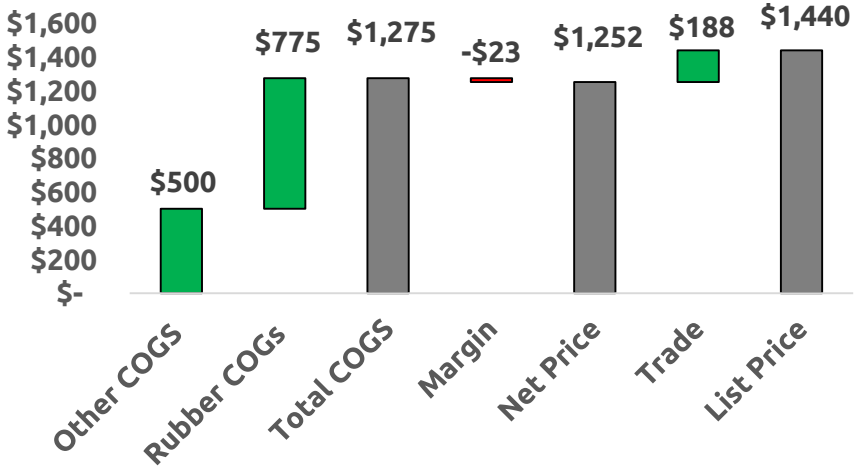
How do we price our new offering given current market dynamics, a 30% margin target and increased production costs?

Margin Based Pricing (30%)



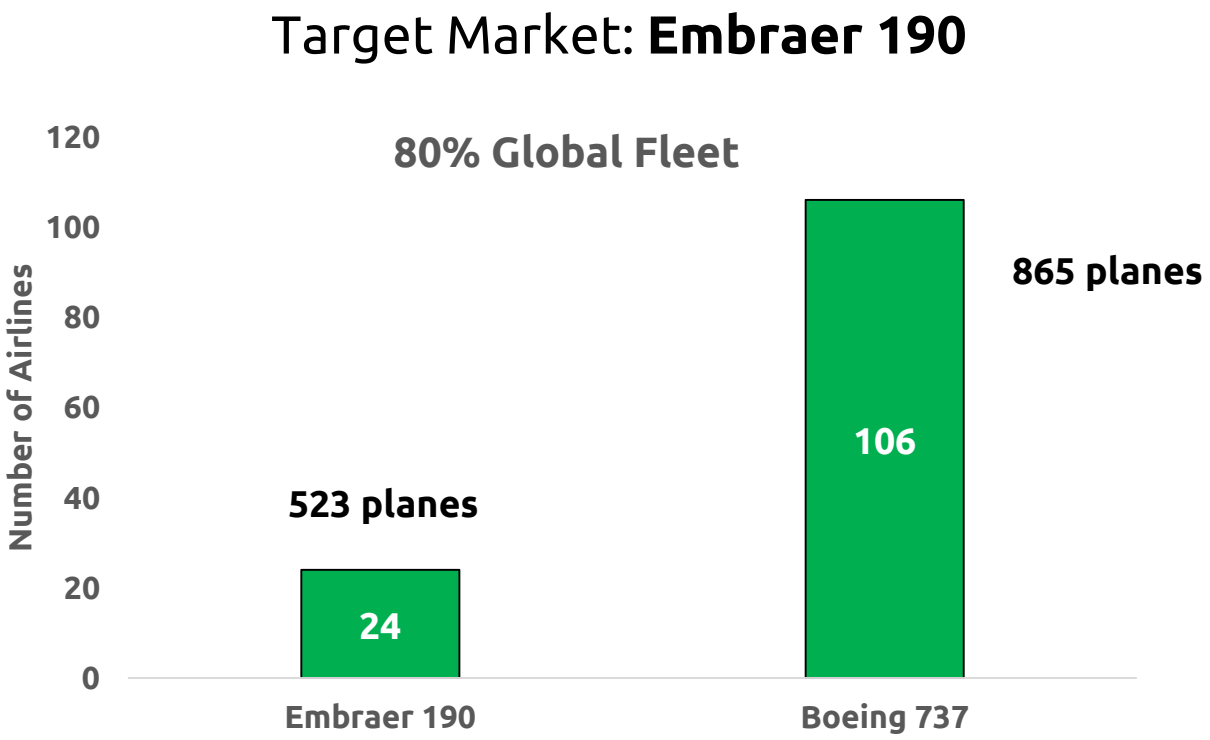
Margin Based Pricing provides the needed 30% but creates a significantly higher price than competition with only margin targets to justify

Market Based Pricing (Rubber)



Market Based Pricing provides a more competitive price but results in negative margin due to the higher cost of manufacturing

1. Determine which customer segment you are analyzing



- The Embraer 190 market is consolidated to a few customers
- Provides large fleet to test value proposition
- Few competitors make Embraer 190 tires (1 major comp.)

2. Identify relevant competitive alternatives and obtain pricing

R&D developed a new tire that used 20% less rubber (lighter) than existing products

	Current	New (R&D)	
List Price	$ 1,800	$ 1,440	
Trade	$ 235	$ 188	
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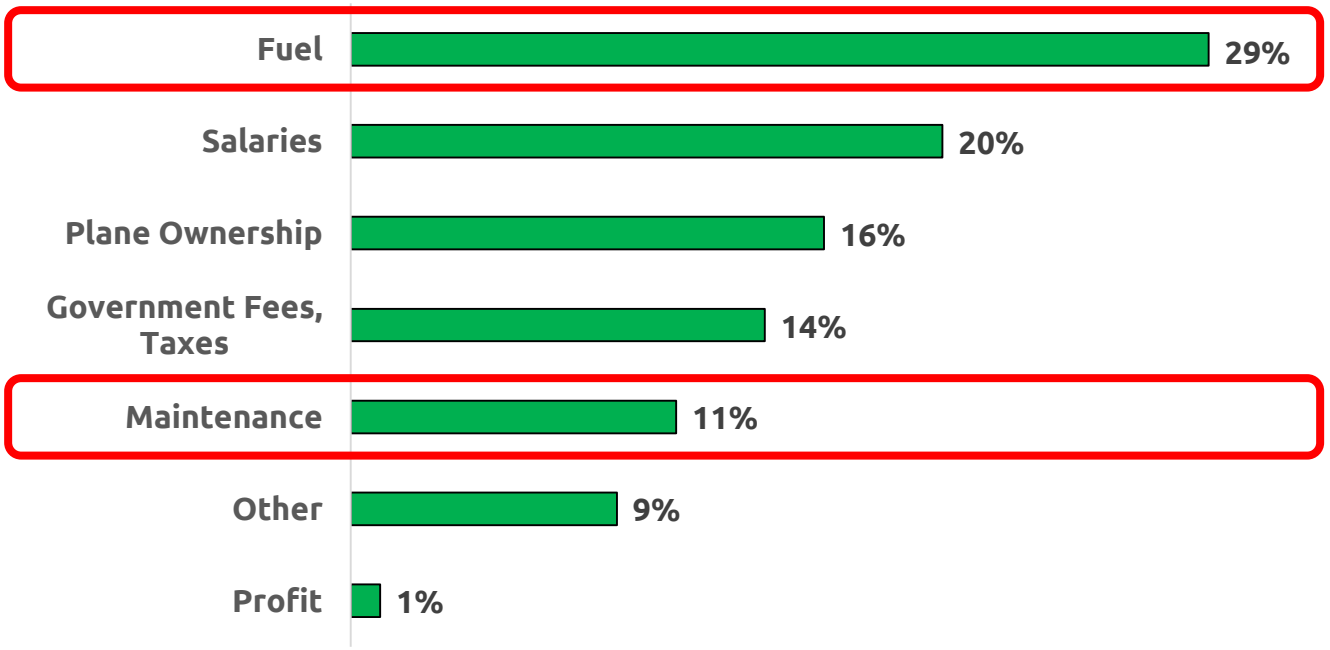
Margin $	$ 470	$ (23)	

Increased manufacturing cost meant that indexing the price to the rubber market resulted in negative margin

3. Identify key drivers that will impact customer financial value

Airline Expense



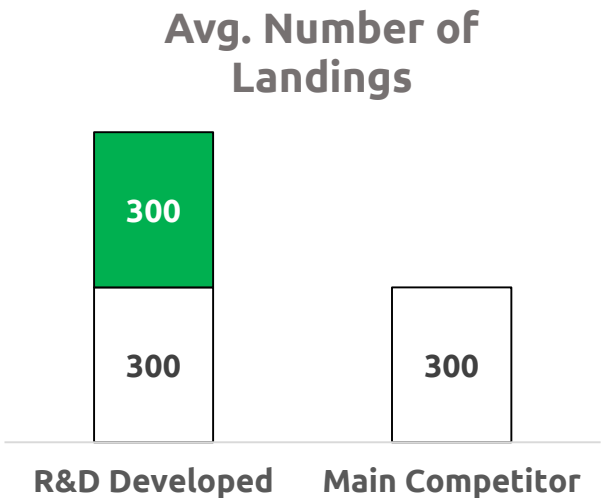
VALUE: Lighter tires provide fuel savings

VALUE: Manufacturing process increases durability resulting in less maintenance

The two main value drivers of the new tire impact 40% of a typical airlines cost structure

4. Quantify impact of your offering on customer segment

Value Attribute: Durability



The new R&D developed tire is twice as durable as compared to the main market competitor

Financial Value Quantification: Durability

	R&D Developed	*Main Competitor*
Assemby Costs	$300	$300
Number of Landings per Tire	600	300
Number of Assemblys (per 600 Landings)	1	2
Total Maintenance Cost	$300	$600

Durability Savings: **$300**

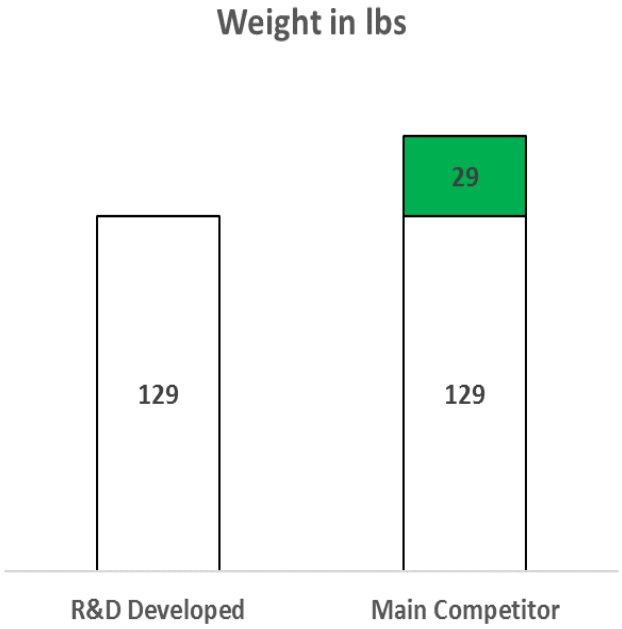
	R&D Developed	*Main Competitor*
Number of Tires (per 600 Landings)	1	2
Price of Main Competitor		$ 1,270

Durability Savings: **$1,270**

Over the course of its lifetime the new R&D developed tire will save $1,570 as compared to the main competitor due to its increased durability

4. Quantify impact of your offering on customer segment

Value Attribute: Weight



The new R&D developed tire has a 29lbs advantage to the main market competitor

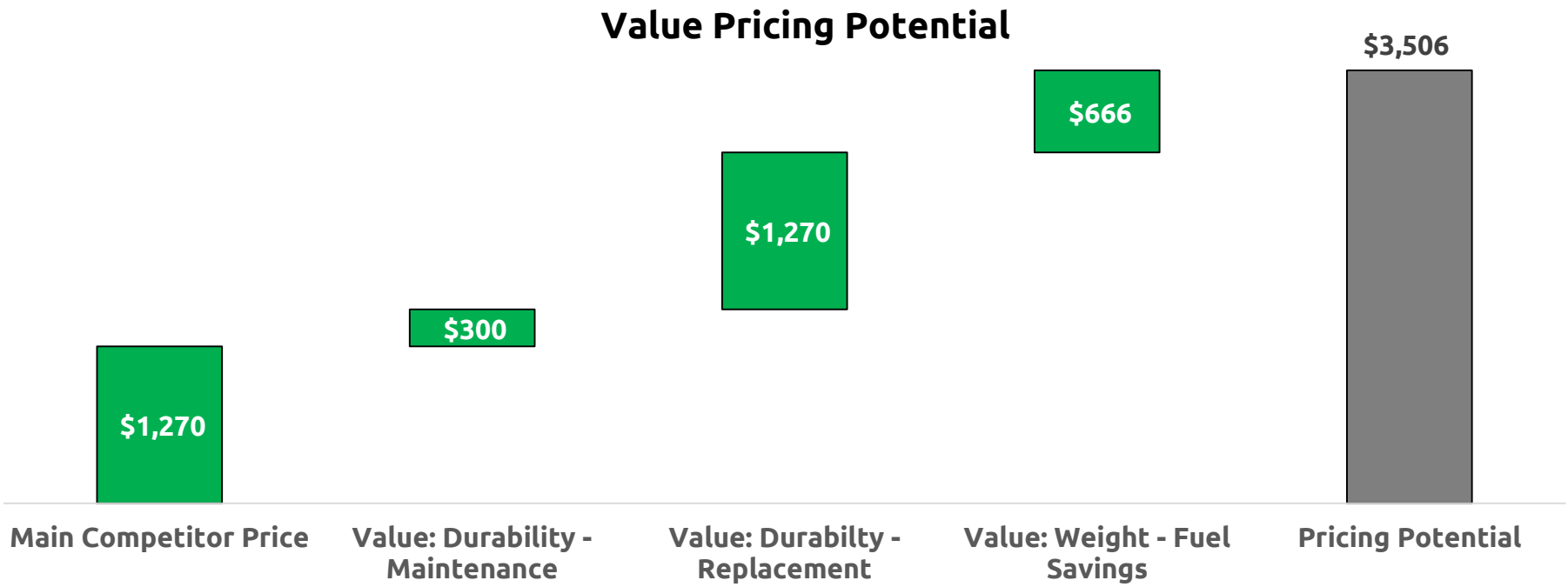
Financial Value Quantification: Weight

Weight Difference (lbs)	29
Fuel Burn Rate (g/hour)	0.007
Flight Time (avg)	1.7
Jet Fuel Price (/g)	$3.21
Number of Landings	600
Tire Savings/Flight	$1.11
Weight Savings:	**$666**

Over the course of its lifetime the new R&D developed tire will save $666 as compared to the main competitor due to its lower weight

4. Quantify impact of your offering on customer segment

Financial Value Quantification



1. How much of the financial value can realistically be captured internally vs. shared with the airlines?

2. What happens if the main competitor lowers their price?

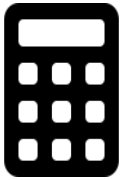
3. What other things need to be considered aside from price?

5. Determine how much value you are sharing with customer and if pricing adjustment req.

Other Considerations

Competitor Discounting

- The main competitor could leverage lower pricing to provide incremental value to customers



Operating Cost Requirements

- Most airlines require a maximum 1% operating cost

Cost of Capital

- A more expensive offering would need to be financed

Payback Period

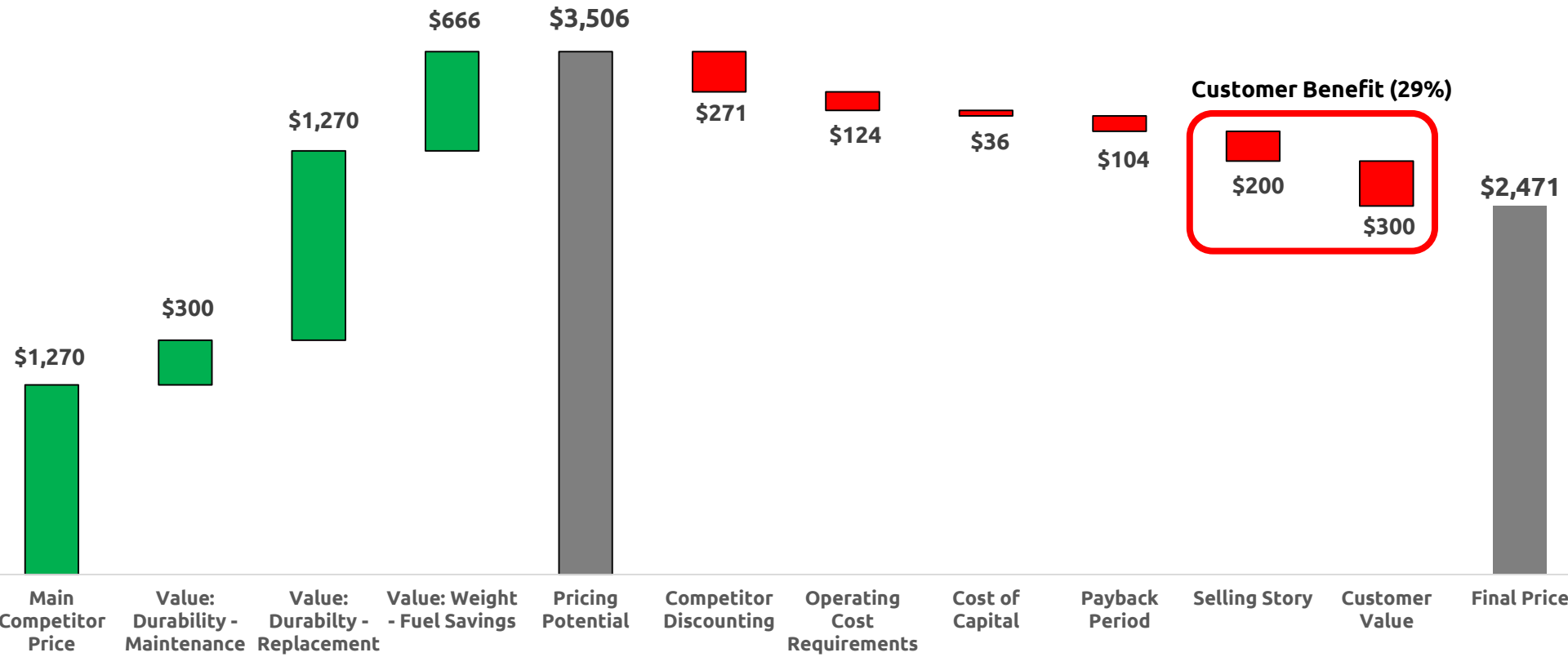
- Most airlines require a minimum 12 month payback on new investments (including operating investments)

Selling Story

- Given that this was an innovative offering, a degree of customer skepticism needed to be overcome regarding the validity of the savings identified

5. Determine how much value you are sharing with customer and if pricing adjustment req.

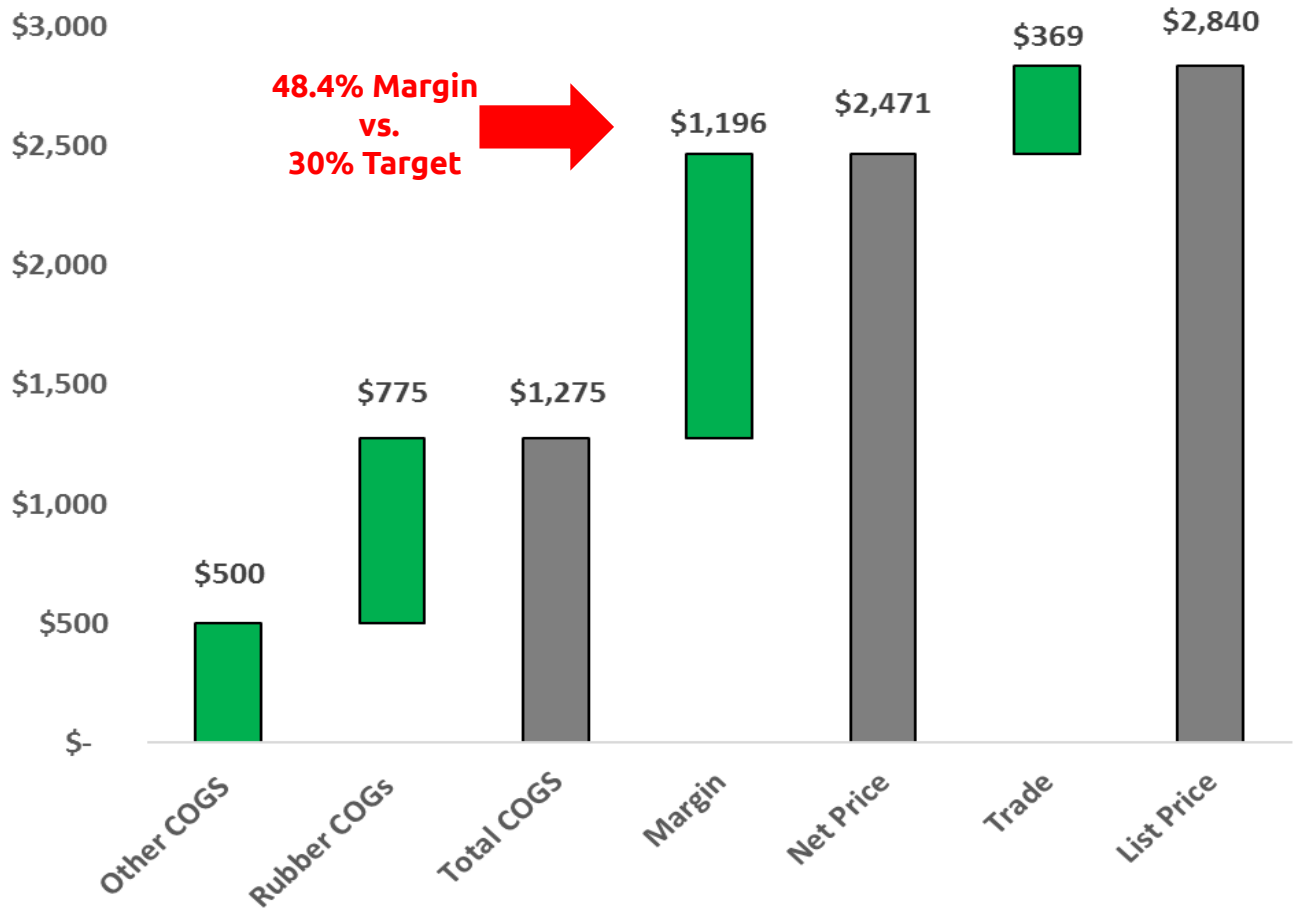
Financial Value Optimization



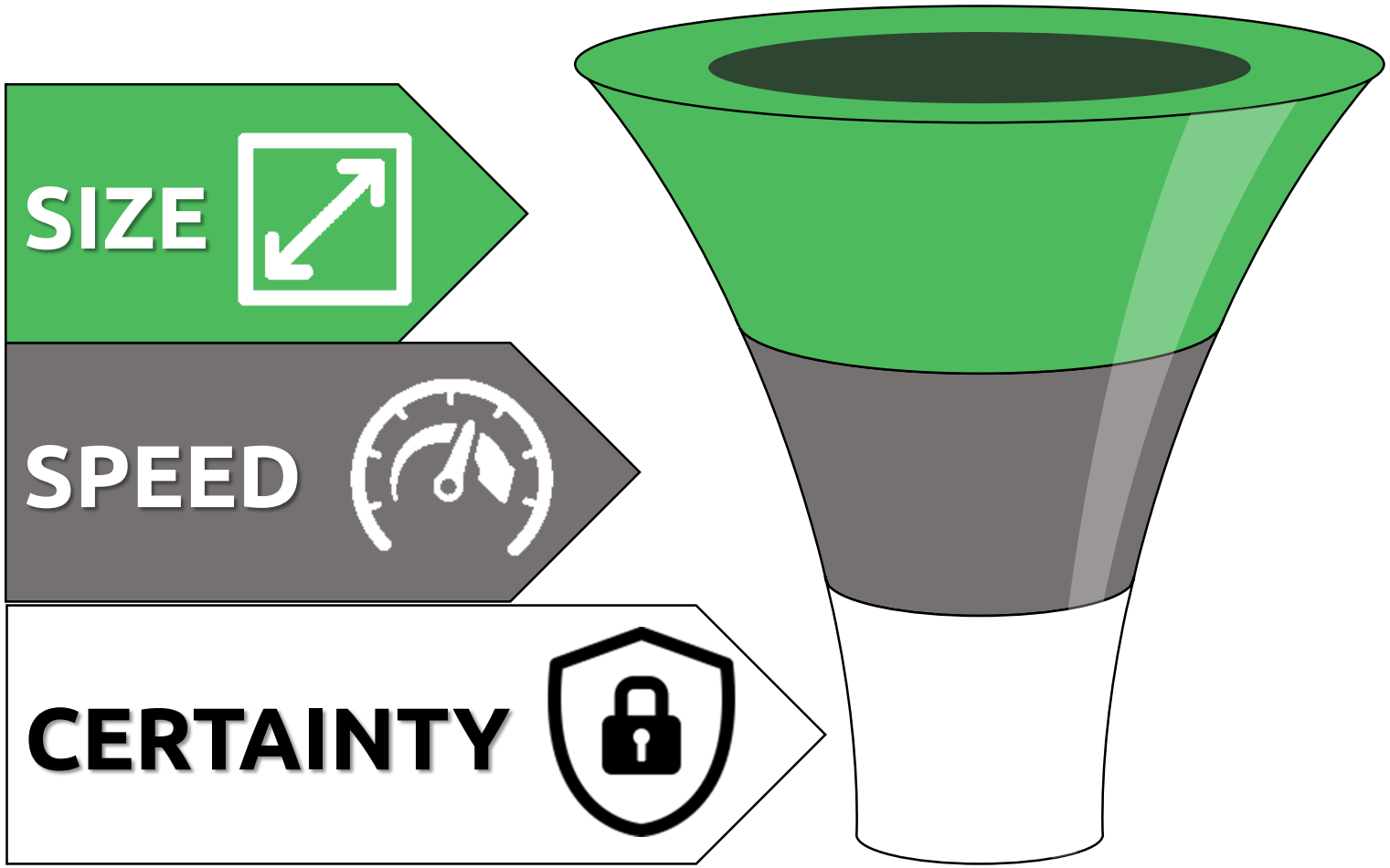
THE RESULT

revenue MANAGEMENT LABS

An 18.4% Increase in Margin vs. existing products (~$79.6 MM)



3 Critical Considerations



FVM Critical Considerations

- How does your company impact the customer's business?
- Which of these have the greatest impact?
- How quickly can your customer realize these benefits?
- What could you do to improve the certainty of this large impact item?
- Do you need to have specific customer data? What items? How would you procure?
- How do you share the value between the company and customer?
- Do you need to reconsider your price position?

revenue MANAGEMENT LABS

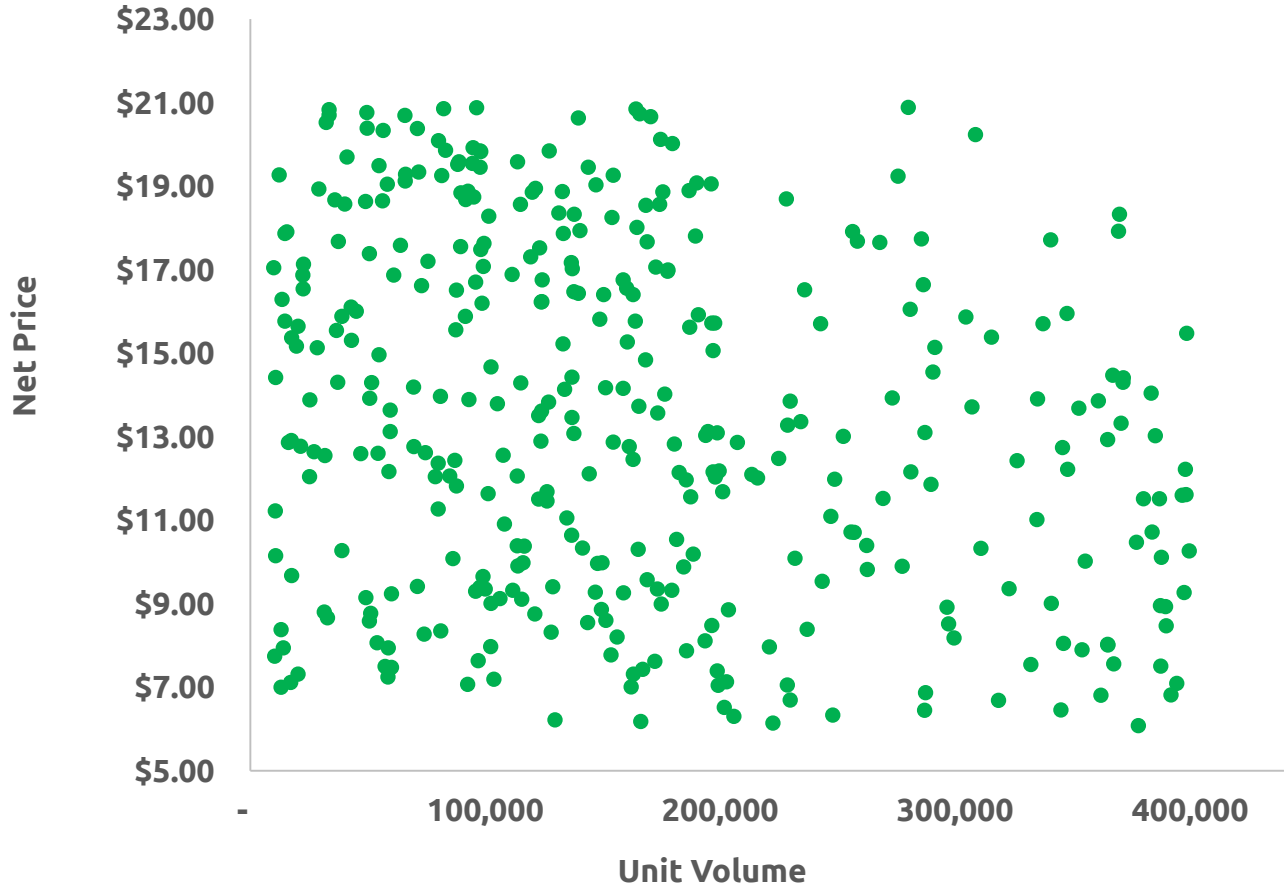
Financial Value Measurement - Exercise

revenue
MANAGEMENT LABS

Price Dispersion

"Get control of your pricing"

B2B Issues

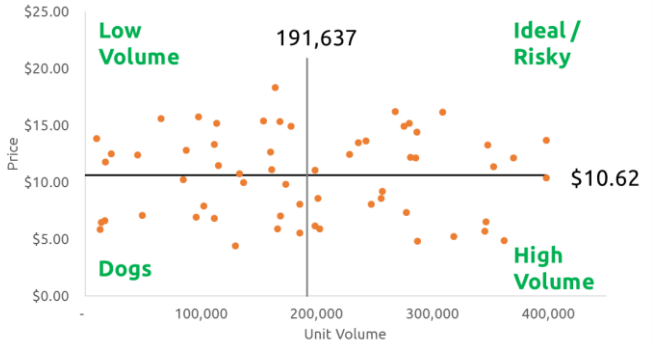

$23.00
$21.00
$19.00
$17.00
$15.00
$13.00
$11.00
$9.00
$7.00
$5.00
Net Price
-
100,000
200,000
300,000
400,000
Unit Volume

Introduction

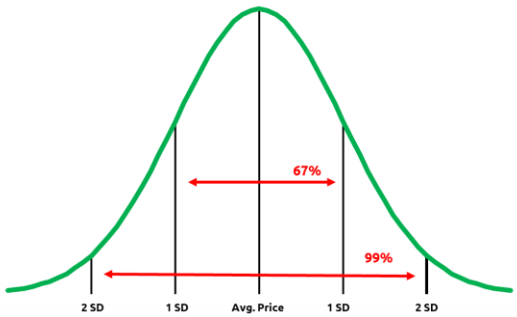
- What is it?
  - The graphical representation of the variation in average price paid for the same bundle of goods / services.
- How is it evaluated?
  - Net price by customer is plotted against a specific attribute
    - Attribute: Volume, tenure, margin, share ext..
    - Filtered by: Geography, time, sales rep
- Why is it useful?
  - Develop an understanding of price position relative to all customers
  - Evaluate pricing consistency
  - Uncover Opportunities

Building the Picture - Method

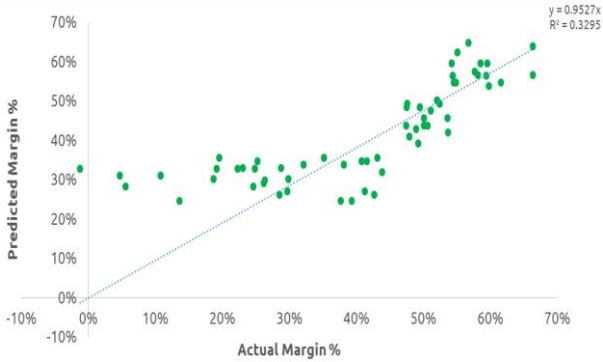
Quadrant



Histogram



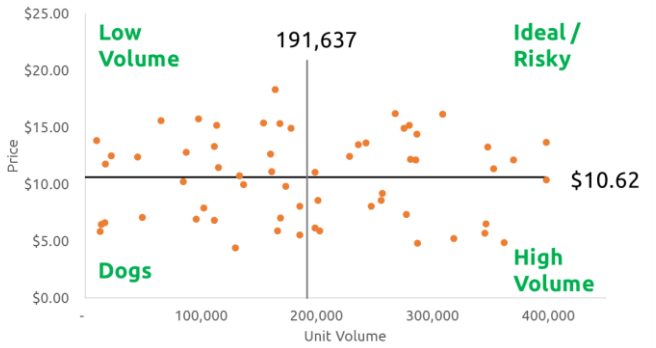
Regression



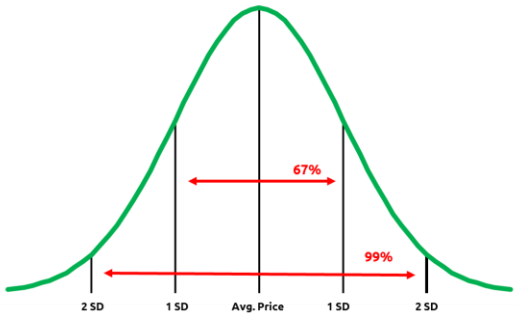
Pros	• Simple to understand • Easy to create • Quick overview of portfolio • Fast direction on strategic pain points	• Price understanding agnostic of any other influencing variables • Easy to track and see changes over time(one curve)	• Understand influencers to price / margin • Identify outliers across multiple variables
Cons	• Single variable view (multiple variable requires multiple charts) • Visual can be overwhelming	• Assume a price distribution (normal) • Does not take into account any other variables (e.g. size)	• Explanatory variables not often available • Need to have ability to do statistical analysis • Usually at a higher level (hard to peel back onion)

Building the Picture - Granularity

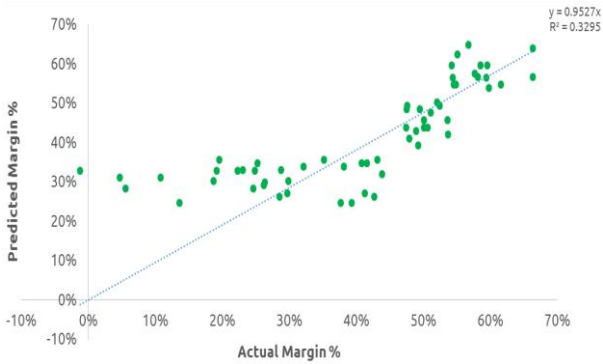
Quadrant



Histogram



Regression



Plotting	• List Price • Net Price • Discount • Margin • Volume	• List Price • Net Price • Discount • Margin	**Model Output** • List Price • Net Price • Discount • Margin	**Model Input** • Volume • Region • Tenure • Product Mix • Etc.
Granularity	• SKU • Brand • Product Line • Each dot should represent a customer (region, group of customers, etc.)	• SKU • Brand • Product Line	• Customer level (where we will take action / make decisions) • Each dot should represent a customer (region, group of customers, etc.)	

Why Net Price?

- List Price may not be what the account actually pays for the item. Also affected by incentives or programs, such as:
    - CO-OP Spend
    - Rebates
    - Freight Allowance
    - Terms
    - Commission (Employee incentive)
    - Etc.
- Rarely available by invoice or SKU.
- Usually paid by account on monthly or annual basis for all SKUs / Invoices
- Assumptions required if working on SKU/product line level:
    - Spread total investment by % Total Sales by year per account
    - Assume a fixed % for certain items (ex. Freight)

Net Price Example

Account #	Actual List = Sales / Vol	CO-OP % Sales Spread	Rebate % Sales Spread	Freight % Weight Spread	Terms Fixed %	Commission Fixed %	Net Price
021	$16.01	$0.42	$1.10	$0.49	$0.12	$1.45	$12.42
018	$8.05	$0.69	$0.18	$0.05	$0.12	$0.52	$6.50

Account 018

Total Sales	= $80,897,124
Total CO-OP Spend	= $6,825,480
Total CBs Sales	= $2,787,071 OR 3.5% of Total
CBs CO-OP	= $6,825,480 x 3.5% = $238,892
Unit CB CO-OP	= $238,892 / 346,220 = $0.69

Account 021

Total Weight	= $18,015 Lbs
Total Freight Spend	= $67,052
Total CBs Weight	= 5,891 OR 33% of Total
CBs Freight	= $67,052 x 33% = $22,127
Unit CB Freight	= $22,127 / 45,158 = $0.49

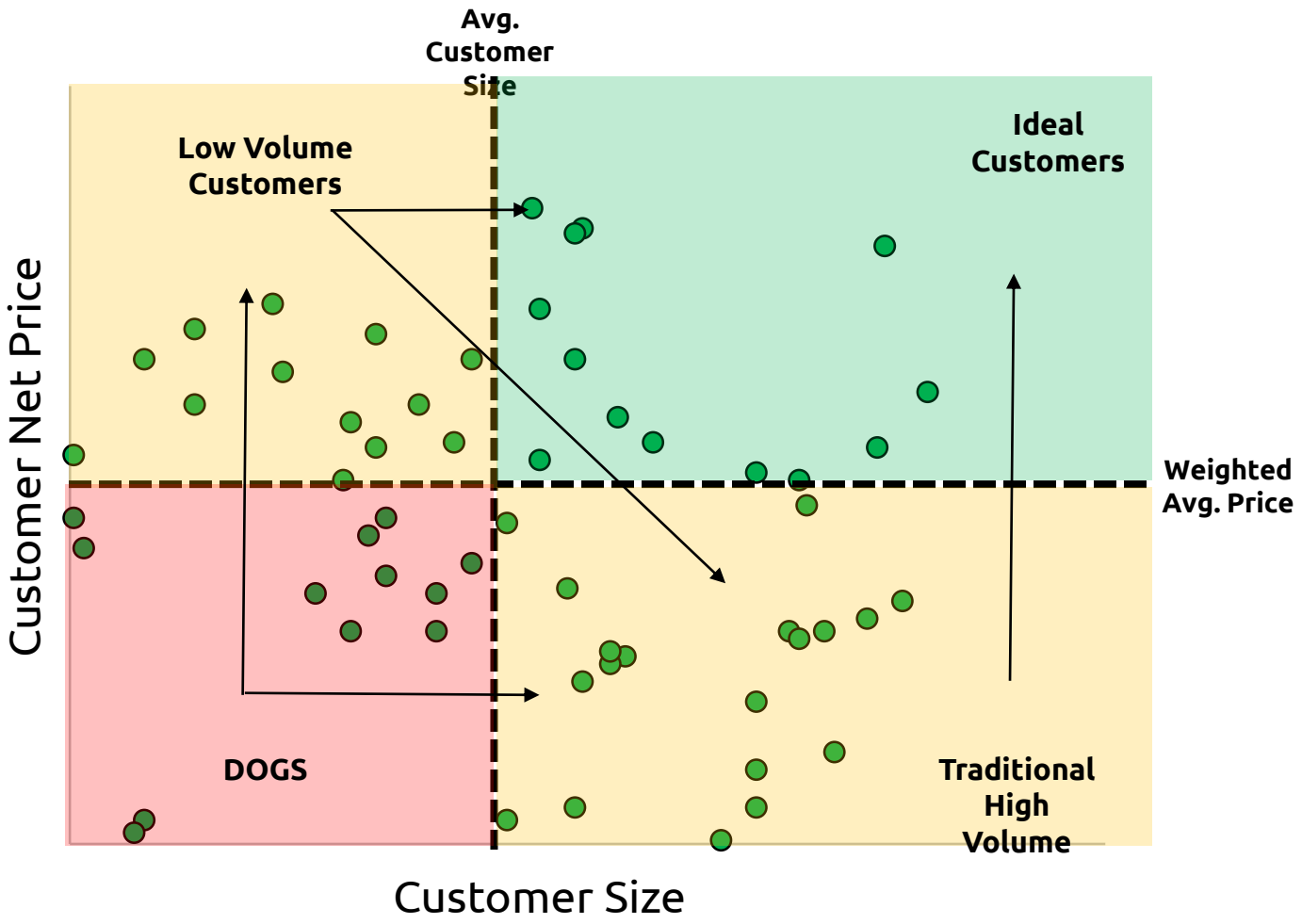
Account 018

Commission %	= 6.5%
CBs Unit Commission	= List Price x Comm % = $8.05 x 6.45% = $0.52

Account 021

Net Price CBs	= List Price – CO-OP – Rebates – Freight – Terms – Commission = $16.01 - $0.42 - $1.10 - $0.49 - $0.12 - $1.45 = $12.42

Dispersion Analysis - Quadrant



Quadrant Process

1. Segment accounts into clusters (if applicable)

2. Decide the granularity (SKU, customer, etc.) and metrics (net price, margin, etc.) of the analysis

3. Calculate mean of both metrics
   - Example: weighted average net price and weighted average volume

4. Plot metrics and draw quadrants using mean values

5. Identify Opportunities (e.g.. Dogs) and possible at risk customers (top right)

Example – Elect Co.

Electrical Components Manufacturing Company

- Owned by Private Equity
- Located in Newark, NJ

Elect Co.

Customers Include:

- Manufactures (Appliances, Tech)
- Contractors
- Distributors
- Wholesalers
- Builders

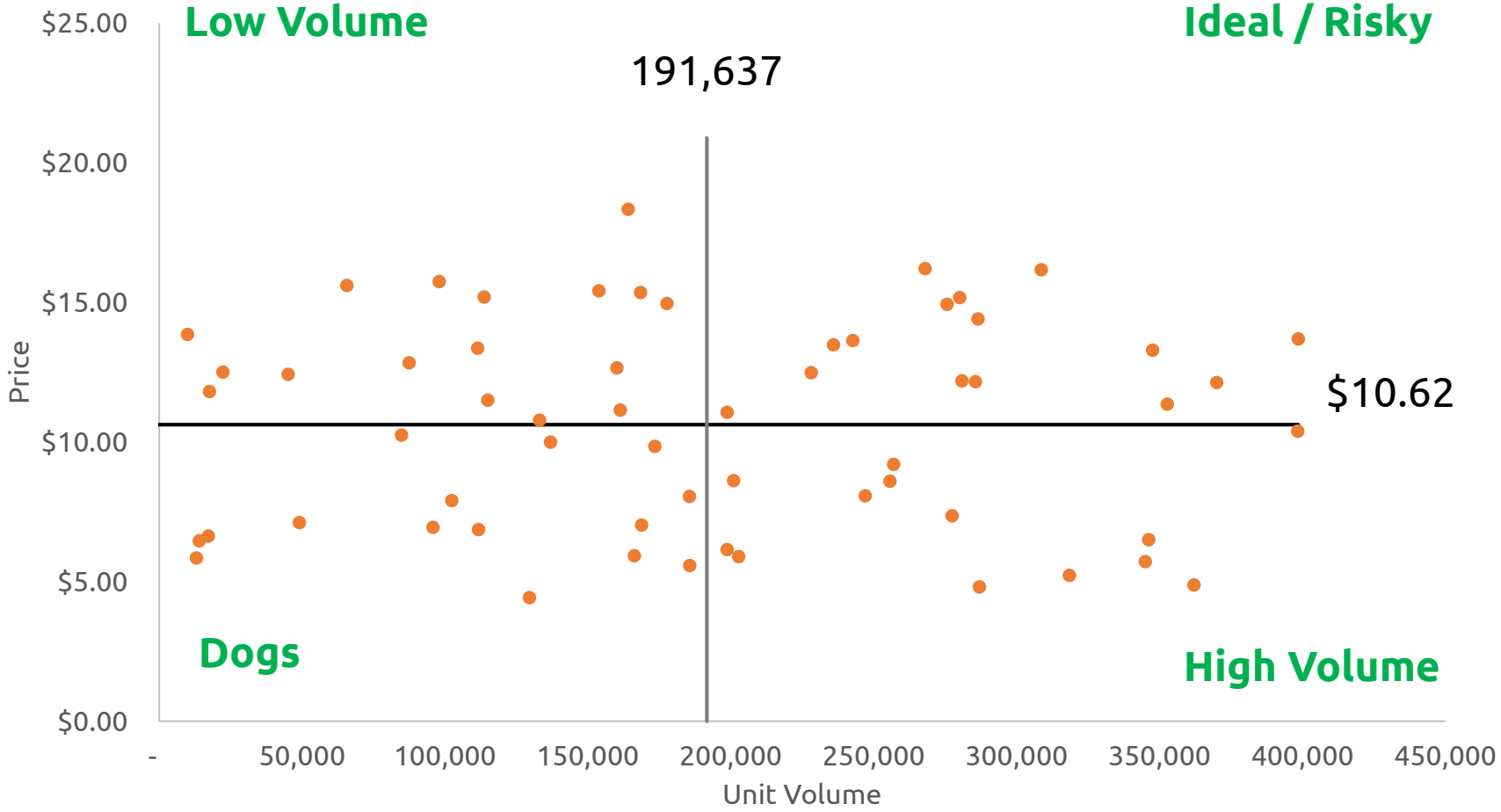
Products Include:

- Fuses
- Cables
- Plugs
- Transformers
- Connectors
- And…

Focus: Circuit Breakers

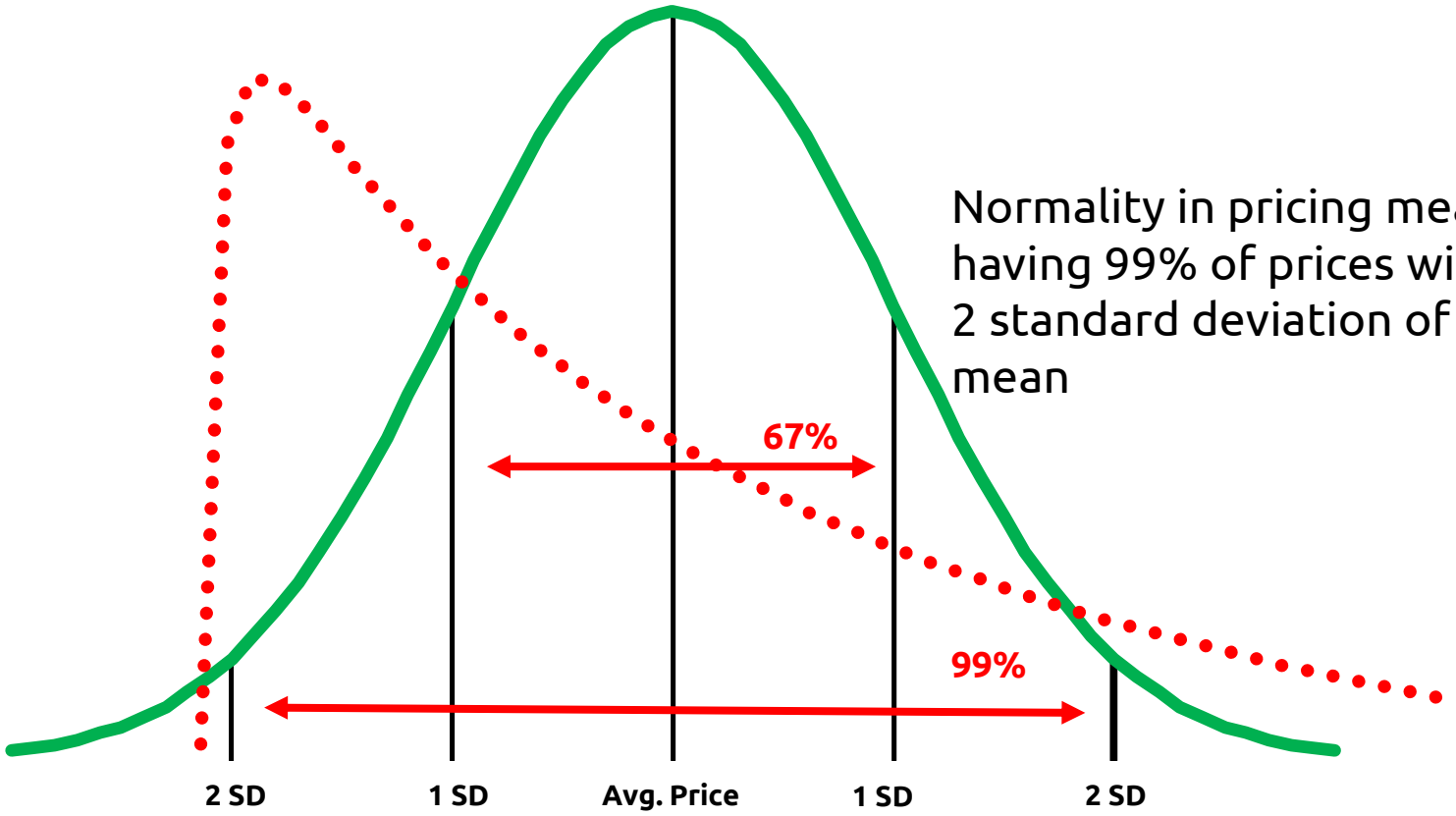
370 Accounts

Net Price vs. Volume Dispersion



Dispersion Analysis - Histogram

- Develop a strong understanding of price position within a product line
  - How tight is the pricing (consistency)



Normality in pricing means having 99% of prices within 2 standard deviation of the mean

Histogram Process

1. Segment accounts into clusters (if applicable)

2. Decide the granularity (SKU, customer, etc.) and metric (net price, margin, etc.) of the analysis

3. Calculate mean and standard deviation of chosen metric
   - Example: average price

4. Create metric bins (manually or automatically)

5. Plot histogram draw standard deviation (tip: overlay on a normal distribution)

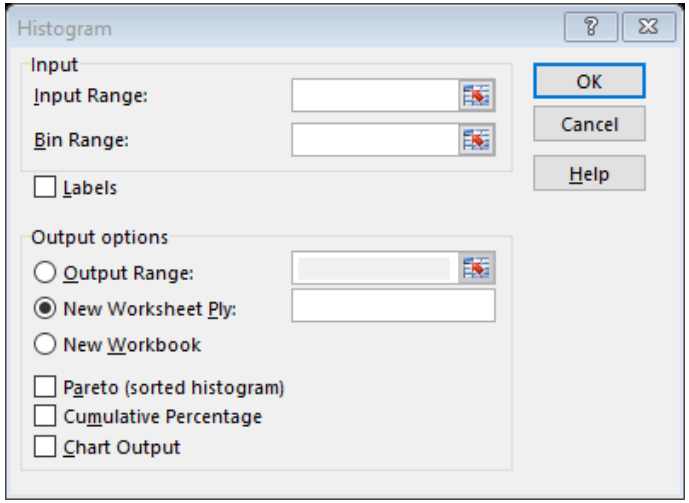
6. Identify points beyond 2SD

Creating Bins

How to Create Bins

1. Find Smallest and Largest
2. Decide on number of bins (10)
3. Calculate Range = Largest – Smallest
3. Divide range by # of bins to get interval
4. Create Bin Boundaries by adding interval (starting at min)
5. Count prices that lie within boundaries

OR

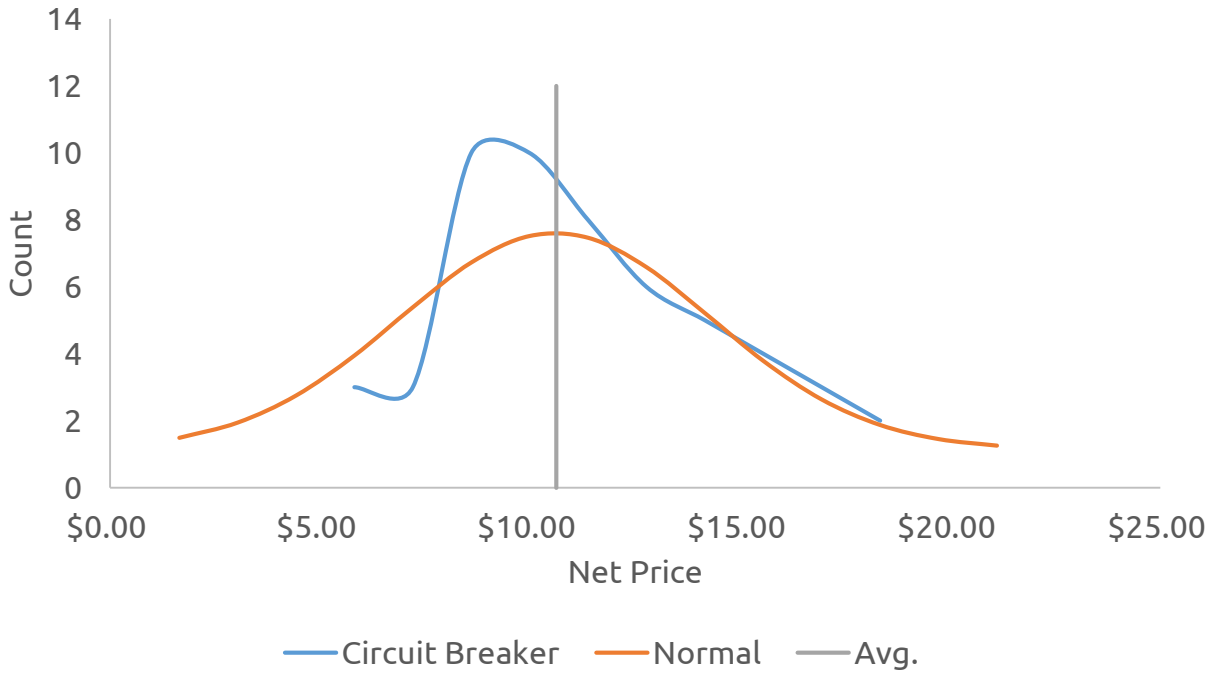


Bin Range	Count
<$5.82	6
$5.83<x<$7.21	11
$7.22<x<$8.60	5
$8.61<x<$9.99	3
$10.00<x<$11.38	7
$11.39<x<$12.77	9
$12.78<x<$14.16	7
$14.17<x<$15.55	7
$15.56<x<$16.95	4
>$16.96	1

Net Price Histogram

Hist_Normal = NORMDIST(x, mean, standard_dev , cumulative) * # Accounts

Against Normal	Against Avg.	Count	Outcome
Below	Below	6	✓
Above	Below	20	X
Below	Above	3	X



Regression Process

1. Segment accounts into clusters (if applicable)

2. Decide the granularity (SKU, customer, etc.) and metric (net price, margin, etc.) of the analysis

3. Decide on predicted metric and input variables
   - Example predicted metric: margin %
   - Example input variables: Region, Number orders Per year, Channel, # SKUs carried, etc.

4. Create regression model and assess fit (adjust as necessary)

5. Predict metric using actual data and plot vs. actual values

6. Identify outliers (deviation from linear equation on plot)

Create regression model

Create Several combinations of categorization variables to find best fit:

Categorization Variables	Fit (R Squared)
Sales Channel, Order Size	0.65
Region, No. Orders	**0.70**
Sales Rep, Region	0.55

Perform a multi variable linear regression using categorization variables

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.837974469
R Square	0.702201211
Adjusted R Square	0.691752131
Standard Error	0.091798716
Observations	60

ANOVA

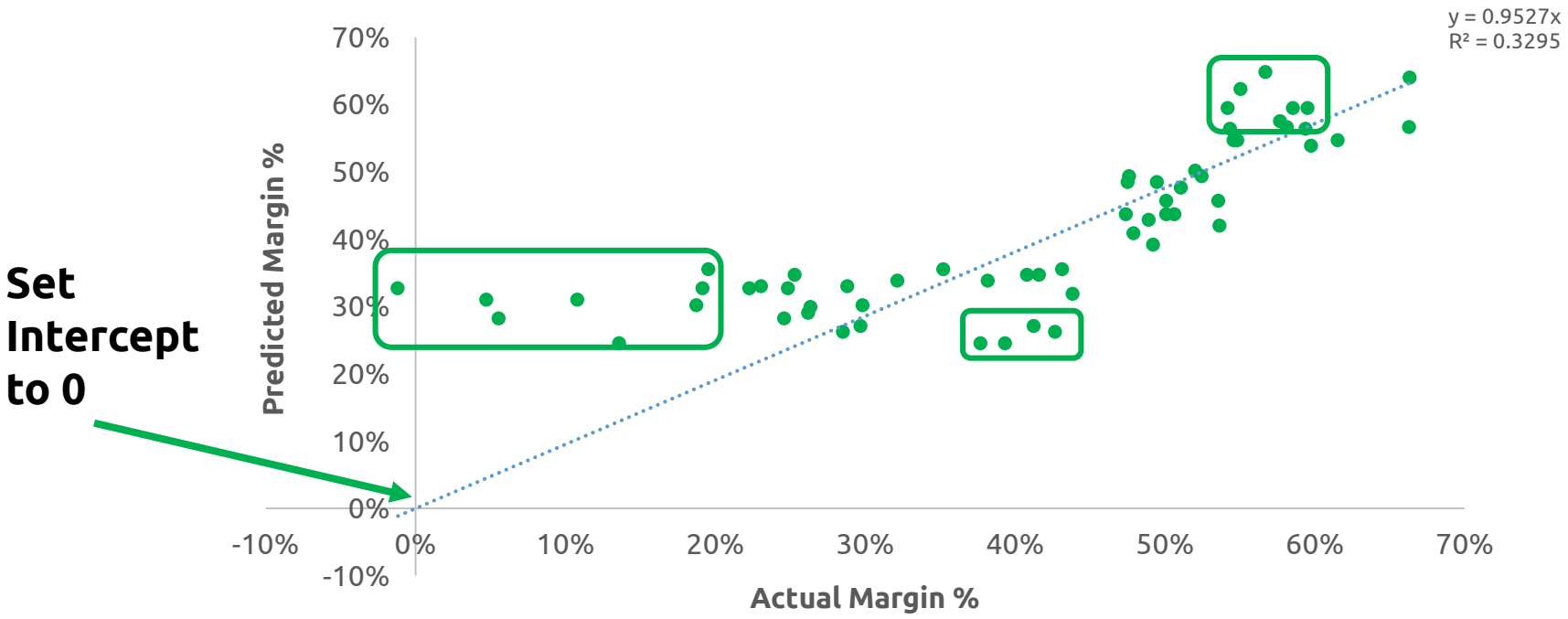
	df	*F*
Regression	2	67.20220242
Residual	57	
Total	59	

	Coefficients	*P-value*
Intercept	0.744108729	1.48776E-27
Region	-0.212445828	1.49595E-10
No Orders	0.050814741	0.036870987

Actual vs. Predicted Margins

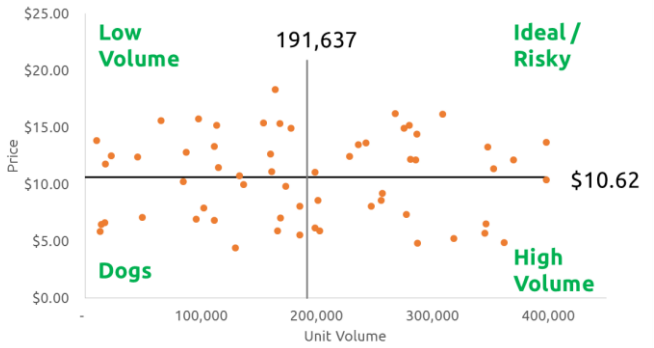
Use Regression coefficients to calculate predicted margin

$$Margin\% = -0.212(Region) + 0.051(No.Orders) + 0.744$$

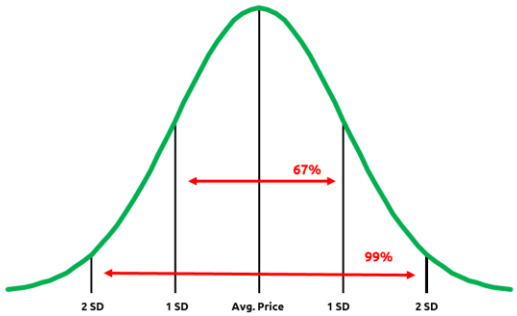


Now What?

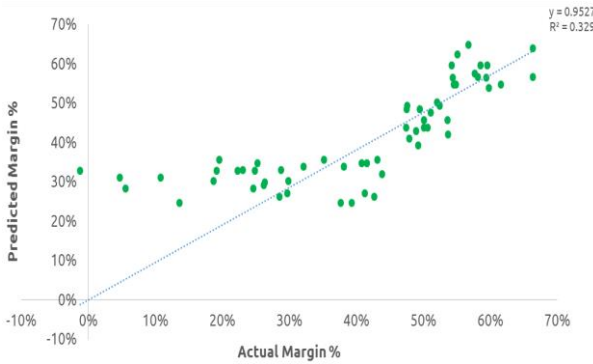
Quadrant



Histogram



Regression



Outputs

- Identified the dogs and at risk accounts
- Identified accounts outside of the “normal” range (high and low)
- Identified accounts which are outliers in what we expect (predict)

- We need to understand WHY?
- What are the sources of information to find out WHY?

Answering the WHY

EVERY SINGLE DATA POINT **HAS A STORY**

- Promise of Volume
- Certain Sales Rep
- Competitive Situation
- Industry depressed
- Lack of Control
  - Lost key customer's volume but special pricing stayed in the system
  - Rogue deal approved by Sales Person
  - Providing payment terms to customers when they pay with credit card
- Needed the deal to close budget
- Customer was of strategic importance
- Customer provides us with Marketing benefit
- Required for share purposes
- And the saga continues…

Next Steps

- Validate the “story” using data (market, other customers, sales trends, etc.)
- Create a Business Case weighing the profit impact of adjusting pricing on the customer
- Some of the adjustments will require substantial change, so establish an adjustment plan e.g. price increases over 2 years, remove investment in these areas, introduce additional terms
- Review the business case and implementation plan with Sales and get input
- Implement changes and track output versus business case forecast

Best Practices to Drive your B2B Pricing Strategy

A CASE BASED APPROACH

December 7, 2017

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