

The logo for Ziment, featuring the word "ziment" in a lowercase, sans-serif font. The letter "z" is green, and the remaining letters "iment" are black. The text is centered within a white rectangular box that is superimposed on a larger green square background.

**ziment**

## **Welcome to the 2008 PMSA Conference**

**Hot Topics in Pharma**  
What we need to know today to  
prepare for tomorrow



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## Calibration of Preference Share

Hot Topics in Pharma

What we need to know today to prepare for tomorrow



# Careful measurement is essential in crafting accurate forecasts

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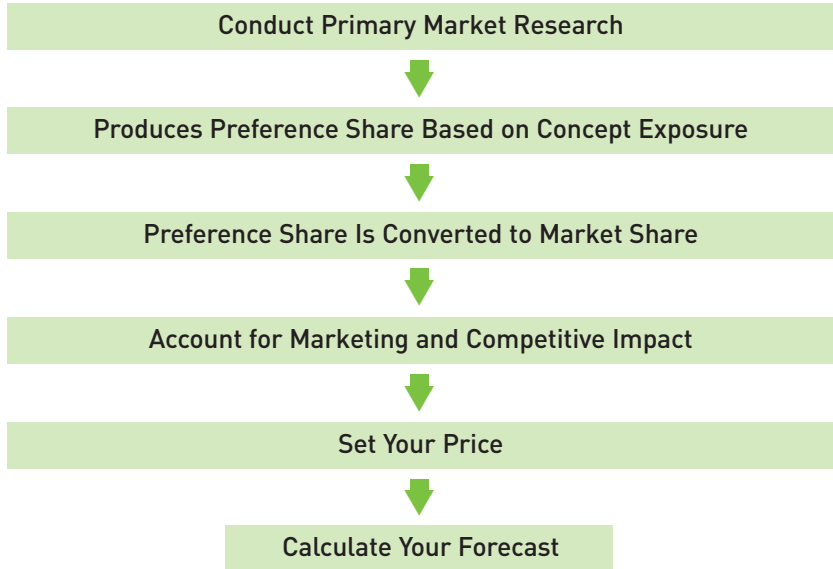
- Changes in share mean changes in revenue
  - In a \$2B market, every 1% share change is worth \$20mm

State-of-the-art choice models take every step to ensure better measurement



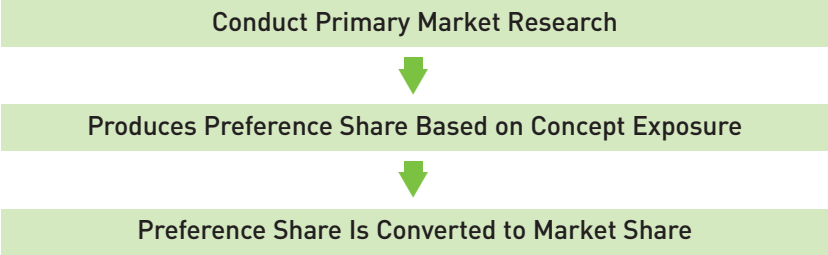
# How pharmaceutical companies typically built their forecasts

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# Addressing the "front end" of this process

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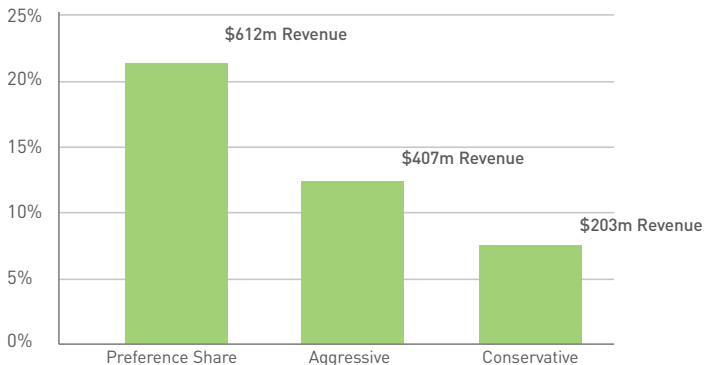
# Challenges faced in the front end

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- **Preference share is overstated**
  - It assumes all physicians have perfect product knowledge
  - It assumes all have equal access
  - It assumes product performs as indicated in profile and scenarios
  - It ignores counter-detailing and competitive response
  - It reflects a “flavor-of-the-month” bias– inherent interest in “something new”
- **Preference share to market share adjustment is not done scientifically**

# Rules of thumb are often used to make adjustment from preference to market share

Range used to convert preference share



The wide range of “acceptable” adjustments can lead to huge shifts in share and revenue estimates

## What is being done and how would you best do it

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- Analogies only work if you have enough data across enough brands and companies over a long enough period of time.

# Extensive resources are needed to throw out the old “rules of thumb”, the following is required

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## Primary MR Needs

- Preference share
- For pre-launch products
- Going back at least 5 years
- Multiple brands
- Measured on many respondents



Collect a long history of primary market research

## Secondary Data Needs

- Share measured by IMS or NDC
- For the same pre-launch products
- For at least five years



Capturing extensive market behavior

# Overview of the calibration of preference share model

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## Model Overview

- Observed in-market share predicted from preference share and study design
- Non-linear model using piece-wise linear regression ( $R^2=.68$ )
- Model predictors constantly evolving with experience and client input

## Data Required

- Get data going back 20 years
- Need data from over 15,000 respondents feed into model
- Data from 27 disease states
- Preference shares ranging from 1% to 67%

## Output Produced

- Calibrated demand monthly, from 1 month post launch to 60 months post launch
- The calibration is not a forecast
  - Does not account for marketing plan
  - Does not account for changes in the market, such as generic launches not in original study

# To create the calibration algorithm, modeled observed share from preference

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Historical Primary  
Research Data



Historical NDC  
Data



Calibration  
Algorithm

The model uses splines to account for non-linearity,  
and cross-validation for validity

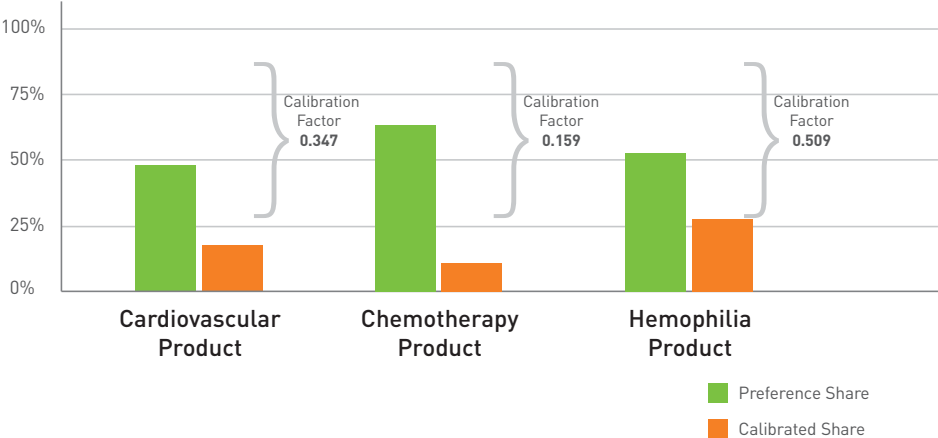
## In our case study, we used twenty-seven disease states to design the calibration algorithm

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- Alzheimer's
- Antibiotic
- AR
- Asthma
- Cancer
- Cholesterol
- Contraception
- Dermatology
- Gastro
- Glaucoma
- Hepatitis
- Herpes
- HTN
- Influenza
- Menopause
- Migraine
- Neuropathy
- Osteoporosis
- Panic Disorder
- Parkinson's
- Psychosis
- RA
- RLS/ Neuro
- Schizophrenia
- Sepsis
- Testosterone
- Weight Loss

# Case Study: The magnitude of the calibration varied in 3 different therapy categories

## Comparison of Calibration Factors

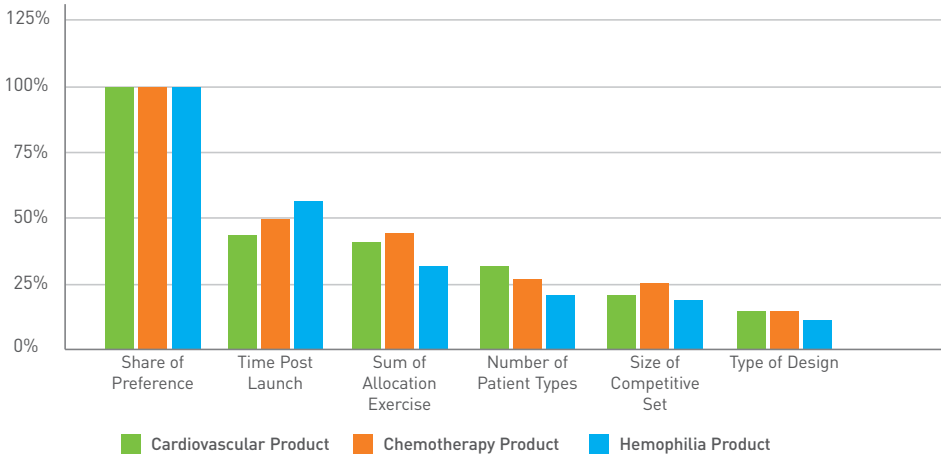


## To build the model requires extensive data preparation to ensure quality results

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- Specialty-level shares converted to market level
- Condition and patient-type shares aggregated
- Preference shares chosen at launch price
- Preference shares drawn from launch configuration
- Market shares calculated on competitive set matching the primary research

# Case Study: The drivers of the expected adjustment was similar across the 3 studies

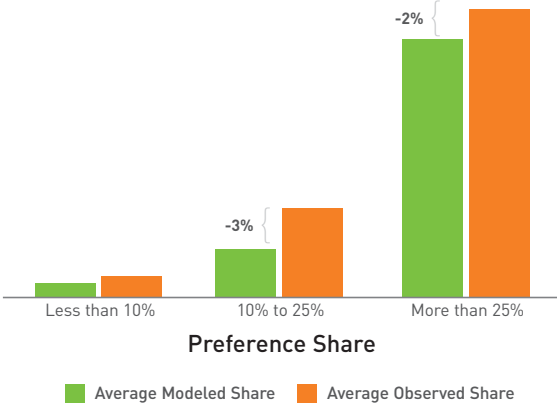


# Across all brands the calibration must be very robust

## Modeled vs. observed market share by level of preference share

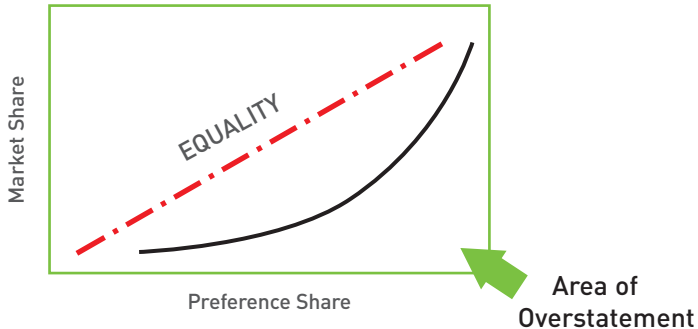
You must ensure that the preference share data are strictly comparable to the observed market data for each study (i.e. if you represented the true launch scenario of each product, and the competitive sets used in the choice models mimicked the competitive sets used to generate observed market share by NDC).

Although these models predict the most appropriate adjustment factor for the average study, and do not necessarily predict market share of any particular product, the models can be quite accurate. On average, our model predicts observed market share +/- 2 percentage points.



# The required calibration varies with the absolute level of preference share

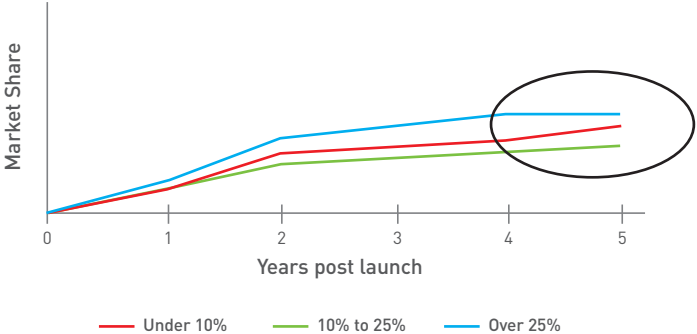
Relationship between preference share and market share



Different preference shares have varying degrees of overstatement, and require varying adjustments

# The calibration required also differs by peak share estimate across time

Percent of preference share attained by modeled share (by preference share level across time)



## Other factors also drive preference share adjustment

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- Specialty types
- Original preference share
- Time when the product achieved peak share
- Number of brands in the competitive set
- Number of patient types
- The way in which allocations are asked
  - Sum to 10, 20, 100, or variable
- Monotherapy and combination therapy usage

## Other factors that need to be investigated

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- Number of attributes in the model in modeling studies
- Inclusion of price in model
- Inclusion of MCO/reimbursement information
- Number of months before launch study was conducted
- Completely novel mechanism v. 'me-too'
- A few category differences

# The algorithm is a calibration, not a forecast

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- **Calibration adjusts preference share to the average overstatement**
  - Differences in share of voice, tactics, execution quality, etc. are averaged out
  - Fundamental, unforeseen changes in the market are averaged out
- **Forecast models take into account your specific marketing plan**
  - Calibration is a great start toward a forecast, but much customization still must be done

**Calibration dramatically improves models of preference; differences driven by overstatement are appropriately adjusted.**

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