The Actuarial Profession
making financial sense of the future

33rd ANNUAL GIRO CONVENTION
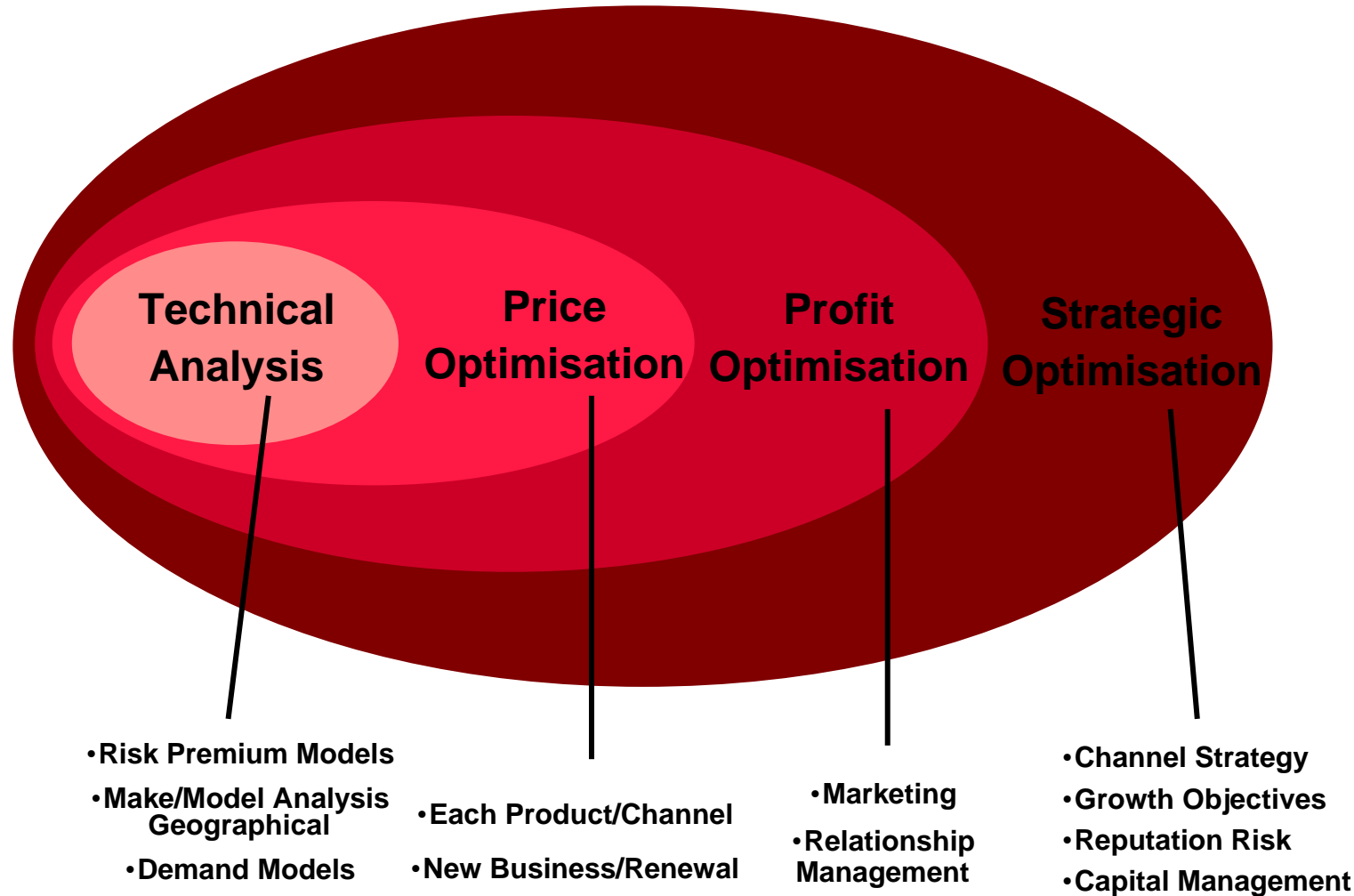
Hilton Wien Hotel, Am Stadtpark

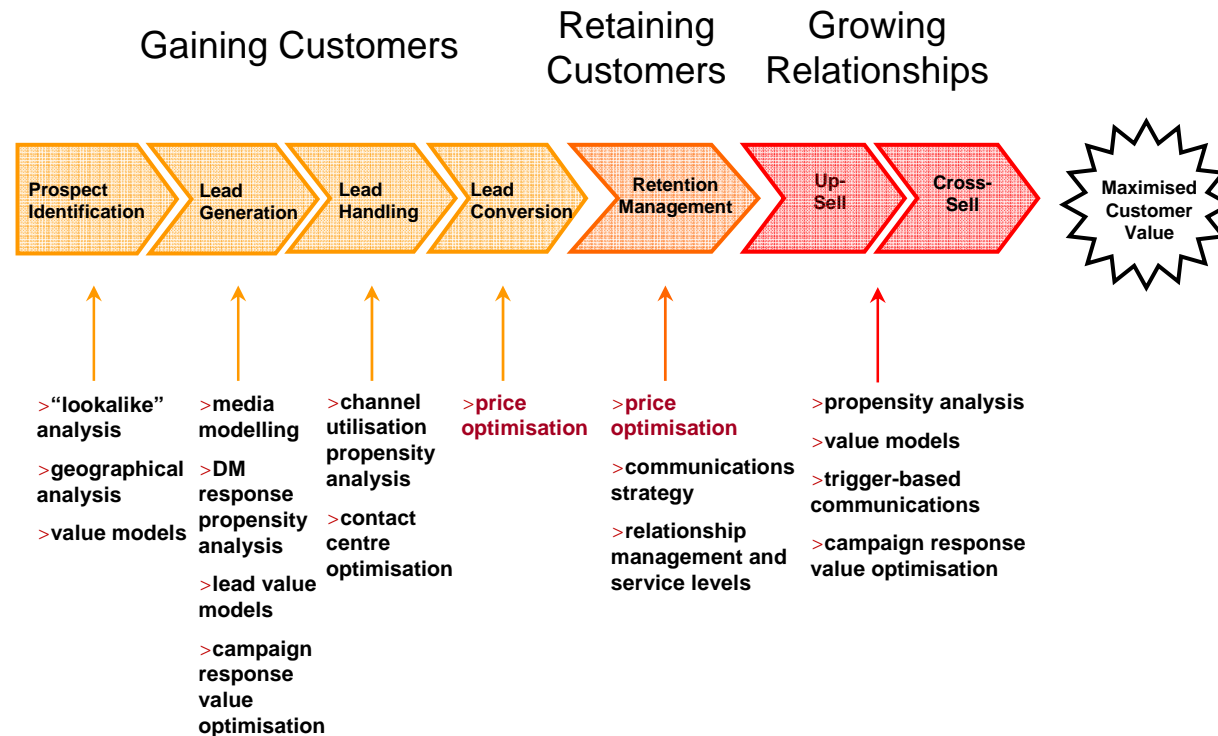# Understanding the Customer Value Chain

Michael J Brockman

Improving Performance
Keeping all your eggs in one basket!

Technical Analysis
- Risk Premium Models
- Make/Model Analysis Geographical
- Demand Models

Price Optimisation
- Each Product/Channel
- New Business/Renewal

Profit Optimisation
- Marketing
- Relationship Management

Strategic Optimisation
- Channel Strategy
- Growth Objectives
- Reputation Risk
- Capital Management

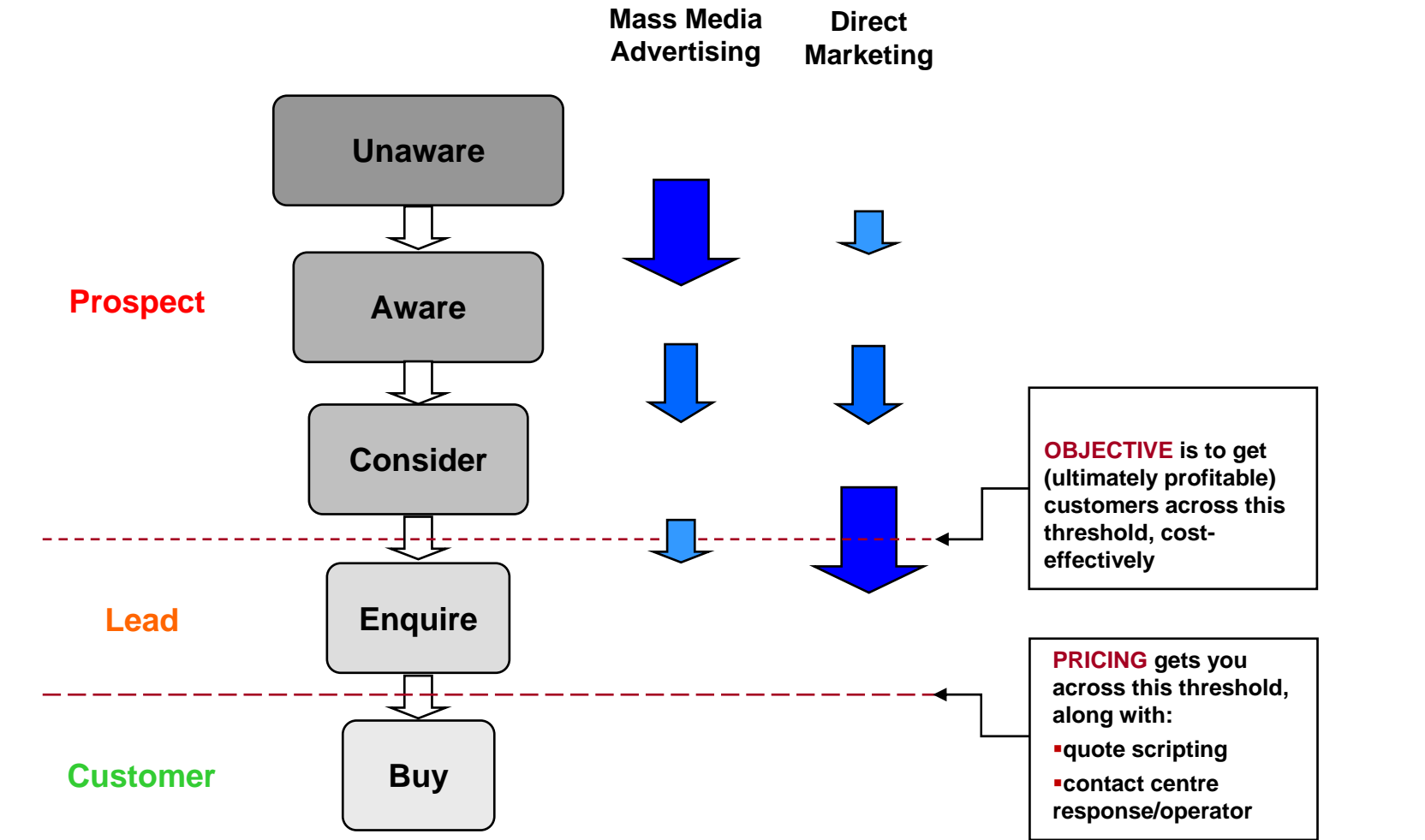**The Actuarial Profession**
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The Customer Value Chain

- Can apply statistical analysis to understand customer behaviour and value at each stage in the customer value chain

Gaining Customers   Retaining Customers   Growing Relationships

| Prospect Identification | Lead Generation | Lead Handling | Lead Conversion | Retention Management | Up-Sell | Cross-Sell | Maximised Customer Value |

Prospect Identification
>"lookalike" analysis
>geographical analysis
>value models

Lead Generation
>media modelling
>DM response propensity analysis
>lead value models
>campaign response value optimisation

Lead Handling
>channel utilisation propensity analysis
>contact centre optimisation

Lead Conversion
>price optimisation

Retention Management
>price optimisation
>communications strategy
>relationship management and service levels

Up-Sell / Cross-Sell
>propensity analysis
>value models
>trigger-based communications
>campaign response value optimisation

- Different types of analyses are appropriate at different stages

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The Leads Pipeline

Mass Media Advertising

Direct Marketing

Unaware

Prospect

Aware

Consider

OBJECTIVE is to get (ultimately profitable) customers across this threshold, cost-effectively

Lead

Enquire

PRICING gets you across this threshold, along with:
- quote scripting
- contact centre response/operator

Customer

Buy

Marketing Analytics - The Way Forward

- Statistical analysis of customer data can inform marketing strategy and tactics…

- …and improve marketing performance

- Actuaries possess the key skills necessary to do this work…

- …and it is in their interest to get involved…

- …by making friends with marketers

- …and doing the analytics better!

How Does This Help Marketers?

- Helps marketers gain deeper customer understanding

- Helps them to answer key tactical questions:
  - *which* customer segments are the most profitable?
  - *which* prospects should my campaign target?
  - *how* should I direct my finite media budget?
  - *when* should I communicate with a customer, and *how*?
  - *which* customers should I spend money on retaining?
  - to *which* customers should I cross-sell, and *what* products?

- Improves the customer experience:
  - appropriate, relevant, targeted, timely marketing communications and servicing activities

Marketing Analytics – What Is It?

- Applying statistical analysis techniques to customer data to understand the drivers of customer behaviour and profitability…
    - … and so how to influence customer behaviour through targeted marketing activities

- Rich customer data now available from CRM systems:
    - attributes, attitudes, holdings, utilisation, servicing, payments, communications, demographics
- Statistical analysis techniques similar to GI
    - GLMs, augmented by e.g. data mining with CART
    - many more factors, and unfamiliar ones
- Wide range of customer behaviours

Example: Direct Channel Motor Insurance Lead Generation

Objective is to generate new business leads (i.e. quotation enquiries):

- in sufficient volumes
- ultimately profitable (contribution, claims cost, retention rate, service requirements, payment delinquency)
- cost effectively (per lead generated)
- cost effectively (considering response channel lead handling costs)
- without impacting adversely on existing customer relationships (i.e. can't mail too frequently, or inappropriately)
- …or on perception of brand service values (i.e. have to have capacity to handle responses)
- having particular customer mix (or leading to particular mix of converted policies)
- leading to particular customer product cross-holding levels
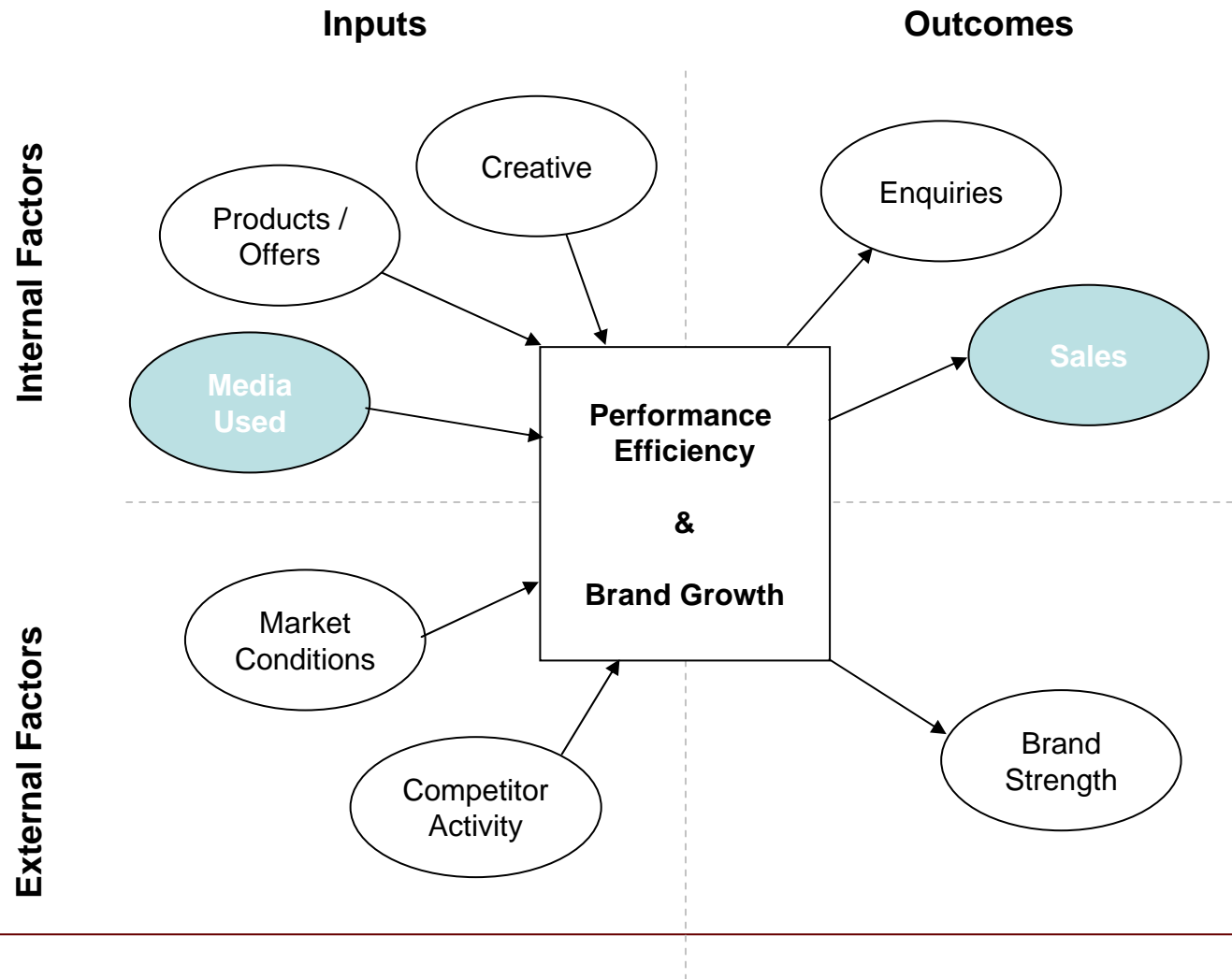
An age old challenge

"I know that half of my advertising is wasted

I just don't know which half"
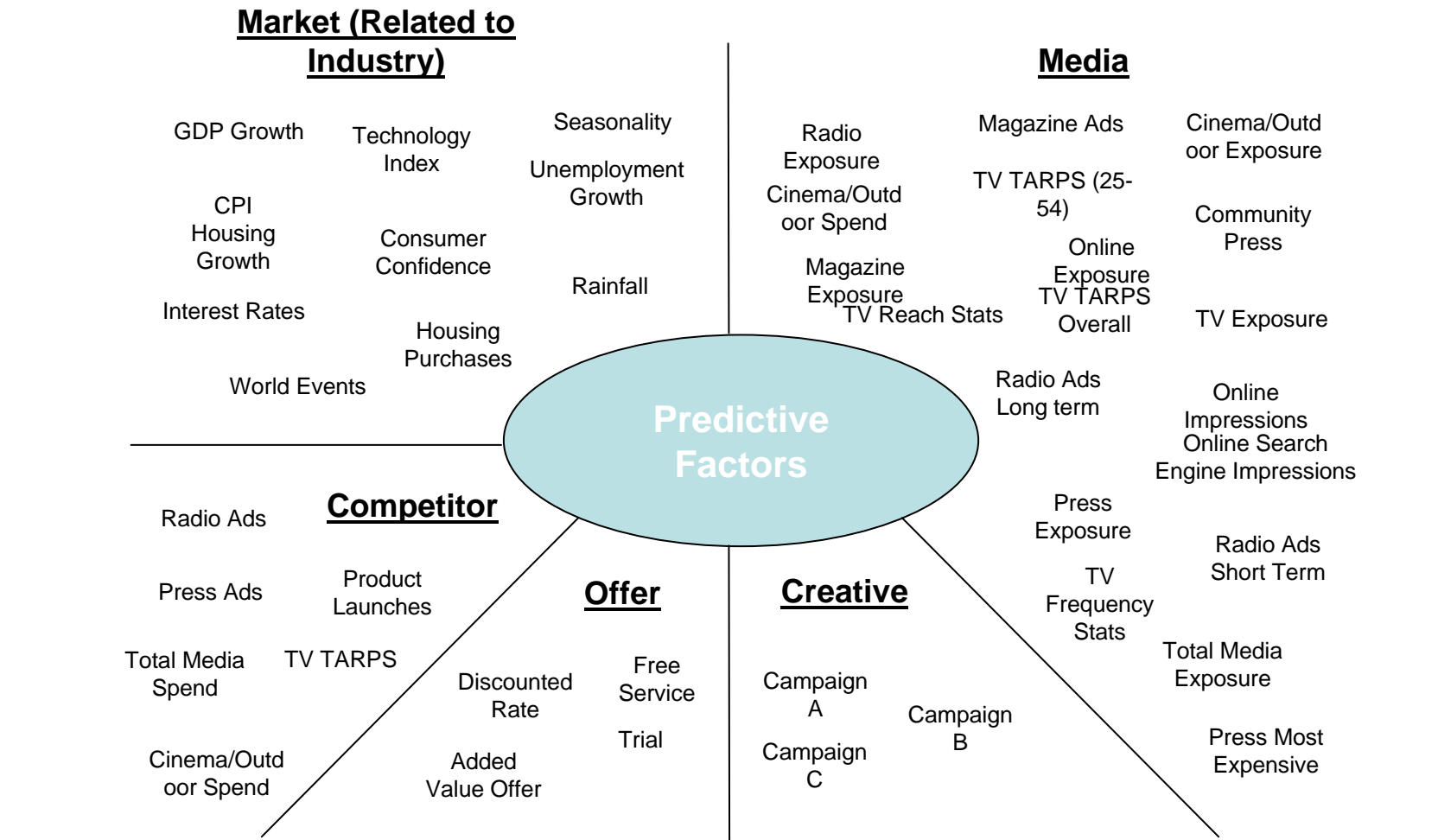
Lord Leverhulme

Still looking for answers in the current landscape

- An explosion of communication channels
- Businesses seeking robust measures to demonstrate accountability
- Fragmentation of strategic advice from numerous specialist agencies

- Need for an evidence based framework, delivered from a neutral perspective

# Identifying cause and effect between spend and sales

Inputs

Outcomes

Internal Factors

- Products / Offers
- Creative
- Media Used
- Enquiries
- Sales

Performance Efficiency & Brand Growth

External Factors

- Market Conditions
- Competitor Activity
- Brand Strength

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Many variables initially considered (Between 400 and 500)

Market (Related to Industry)

GDP Growth

Technology Index

Seasonality

Unemployment Growth

CPI Housing Growth

Consumer Confidence

Interest Rates

Rainfall

Housing Purchases

World Events

Media

Radio Exposure

Magazine Ads

Cinema/Outdoor Exposure

Cinema/Outdoor Spend

TV TARPS (25-54)

Community Press

Magazine Exposure

Online Exposure TV TARPS Overall

TV Reach Stats

TV Exposure

Radio Ads Long term

Online Impressions Online Search Engine Impressions

Press Exposure

Radio Ads Short Term

TV Frequency Stats

Total Media Exposure

Press Most Expensive

Predictive Factors

Competitor

Radio Ads

Press Ads

Product Launches

Offer

Creative

Total Media Spend

TV TARPS

Discounted Rate

Free Service

Campaign A

Trial

Campaign B

Cinema/Outdoor Spend

Added Value Offer

Campaign C

We do this by considering data at a more granular level

- Weekly media exposure for each channel is allocated at a postcode level
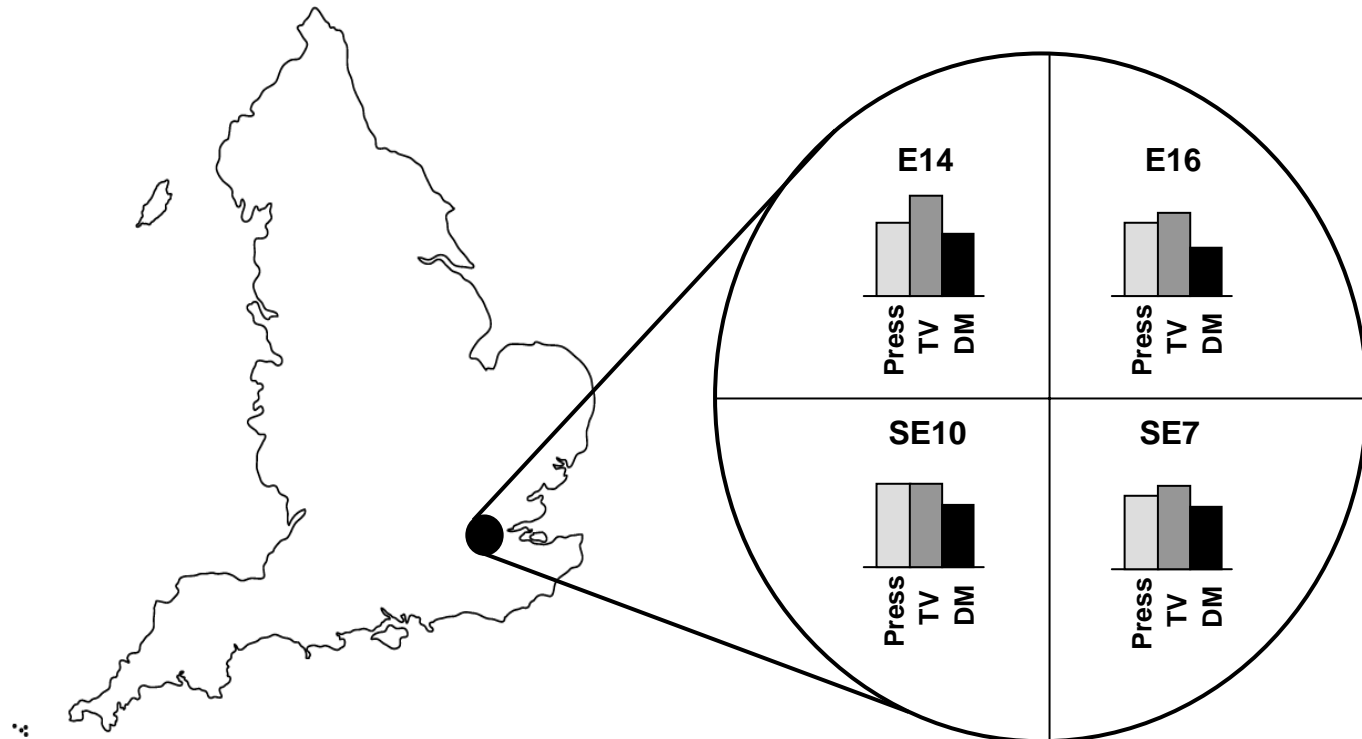
# This provides the necessary richness of data

- Media exposure in adjacent postcodes in a given week may be quite similar
- However differences between weeks and geographies allow us to gain a true understanding of the impact of media exposure on customer behaviour
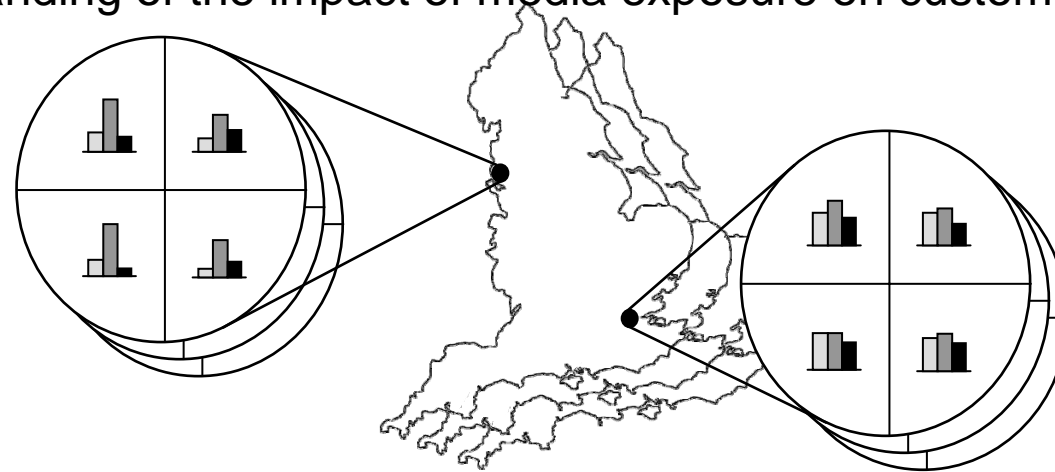
- By considering multiple years of data across all geographies, we have a large number of 'experiments' or data points on which to conduct the modelling
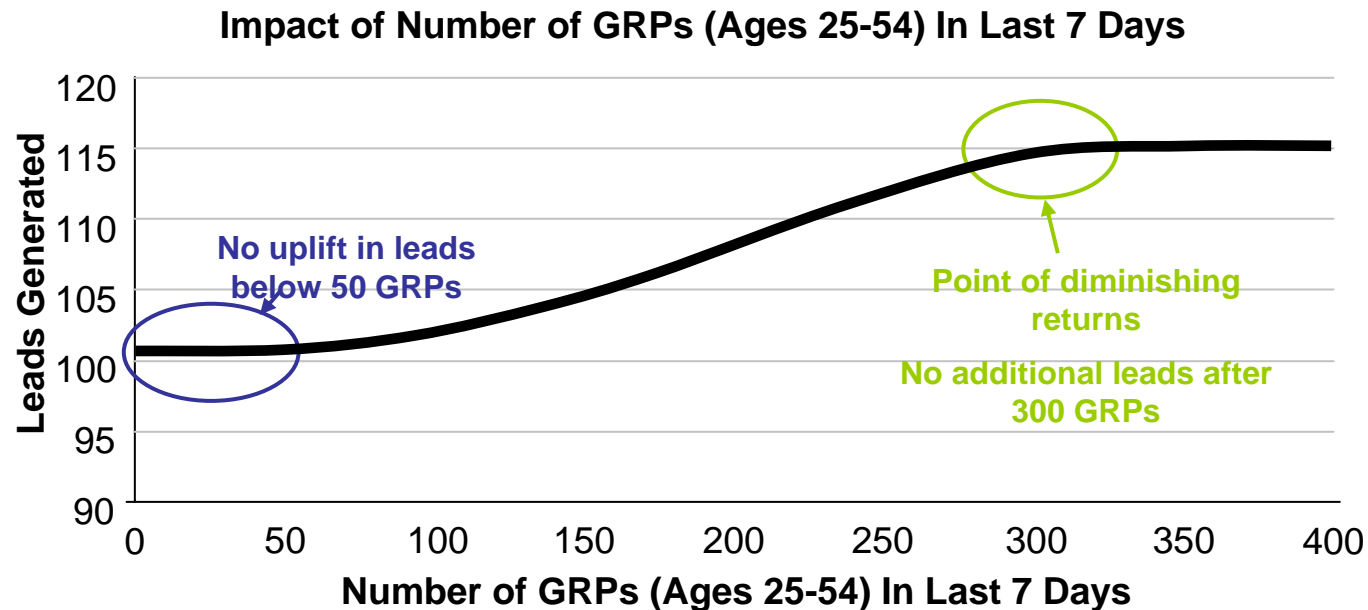
Improving on basic econometrics

- By looking at the data in a more granular way, more understanding can be drawn about the relationship between exposure and response

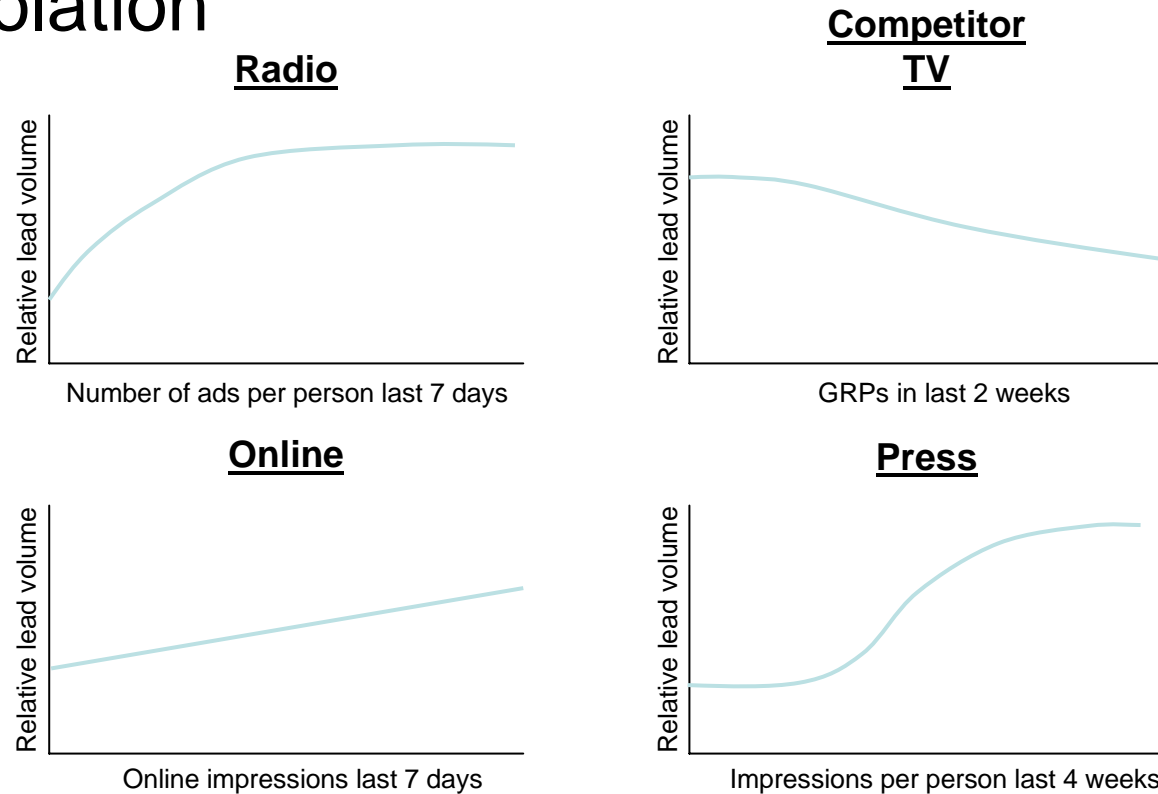- Identifying the slope and shape of the relationship offers significant benefits
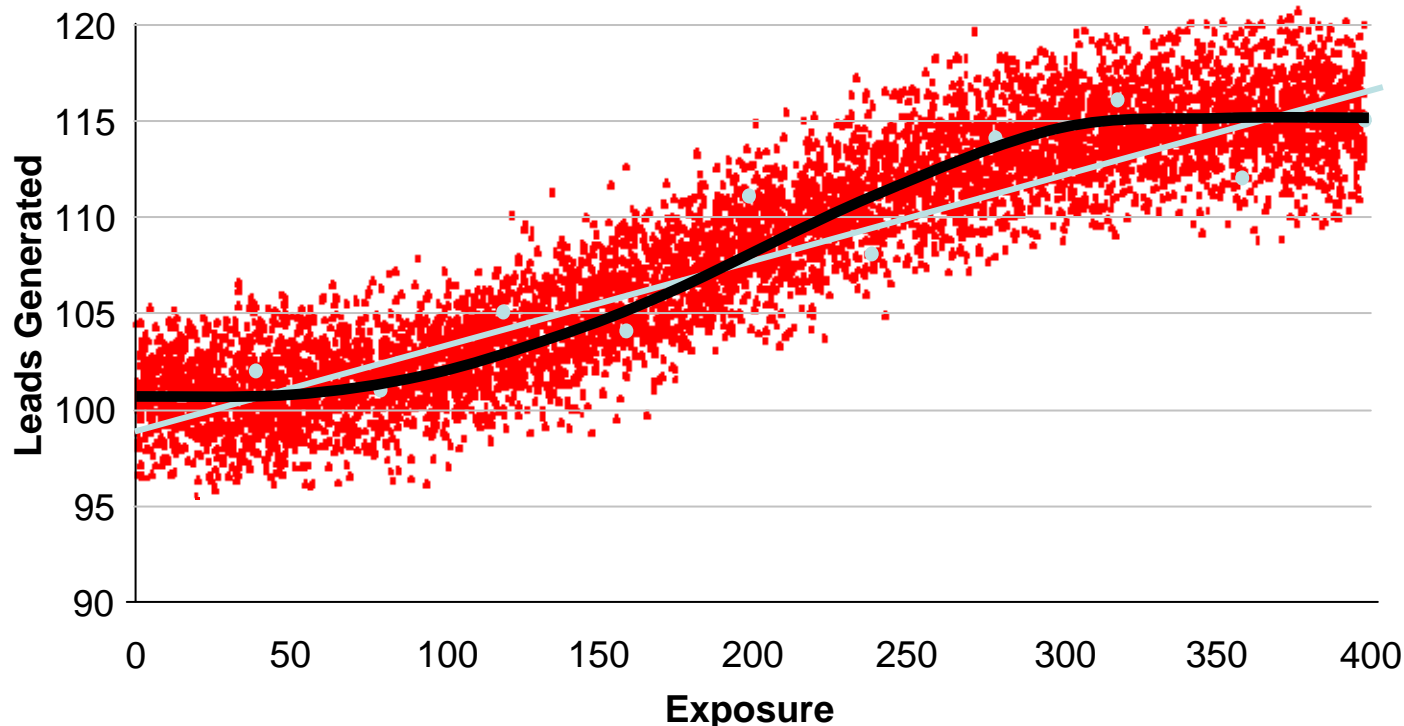
Pure effects of each variable modelled for influence

- The specific effect of each influence is isolated (Media and non media factors)
- These 'pure effects' can be used to guide each channel's optimal deployment

Impact of Number of GRPs (Ages 25-54) In Last 7 Days

No uplift in leads below 50 GRPs

Point of diminishing returns

No additional leads after 300 GRPs

Leads Generated

Number of GRPs (Ages 25-54) In Last 7 Days

Channel performance

- **Each channel's effect can be understood in isolation**

Radio

Competitor TV

Relative lead volume

Number of ads per person last 7 days

Relative lead volume

GRPs in last 2 weeks

Online

Press

Relative lead volume

Online impressions last 7 days

Relative lead volume

Impressions per person last 4 weeks

Note: Illustrations only

The benefits of analysis beyond straight lines

- Consider September 2005
 - a high level of media spend was not met with a peak in sales

Media Spend and Sales Volume
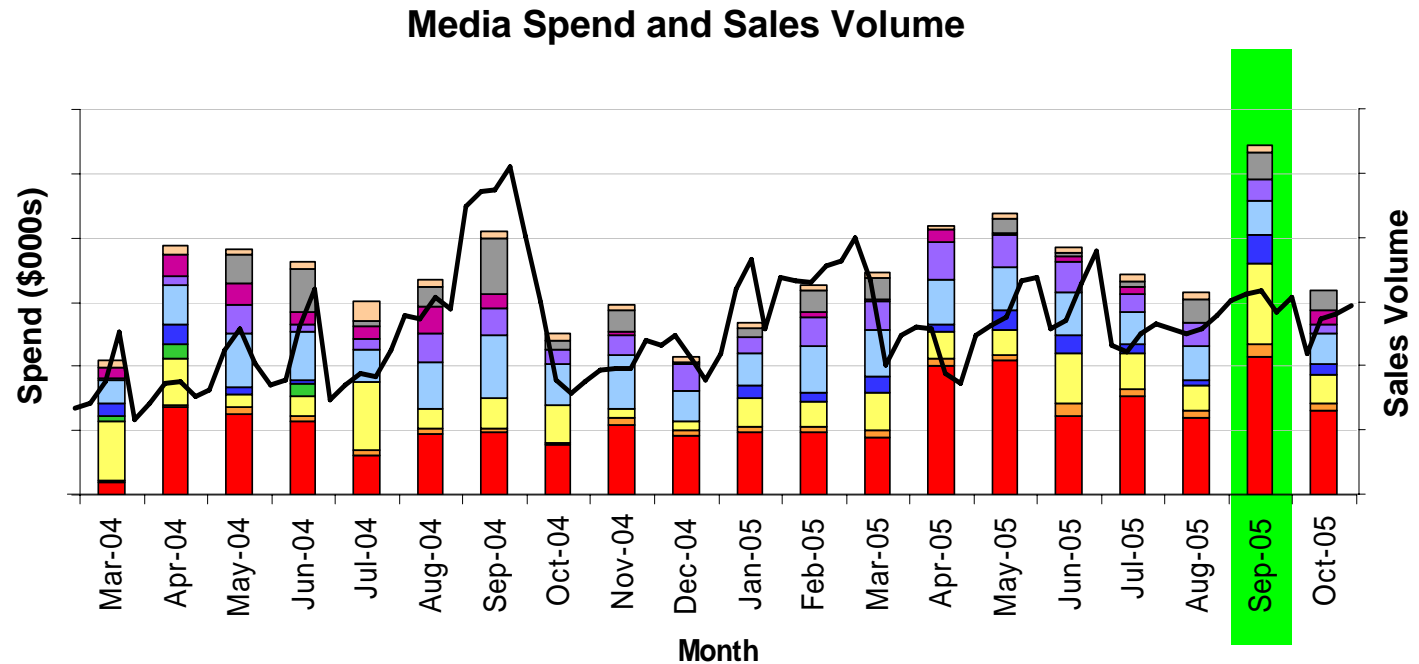
TV | Info | Pr - OTP | CPr - OTP | Mag - OTP | Pr - Ins | CPr - Ins | Mag - Ins | Doordrops | Online

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# September 2005 was particularly heavy in OTP press and TV exposure

- Almost £1m was spent in the month beyond the point of zero marginal returns as identified in our modelling

Relativity by TV Impressions Per Person Last 2 Weeks
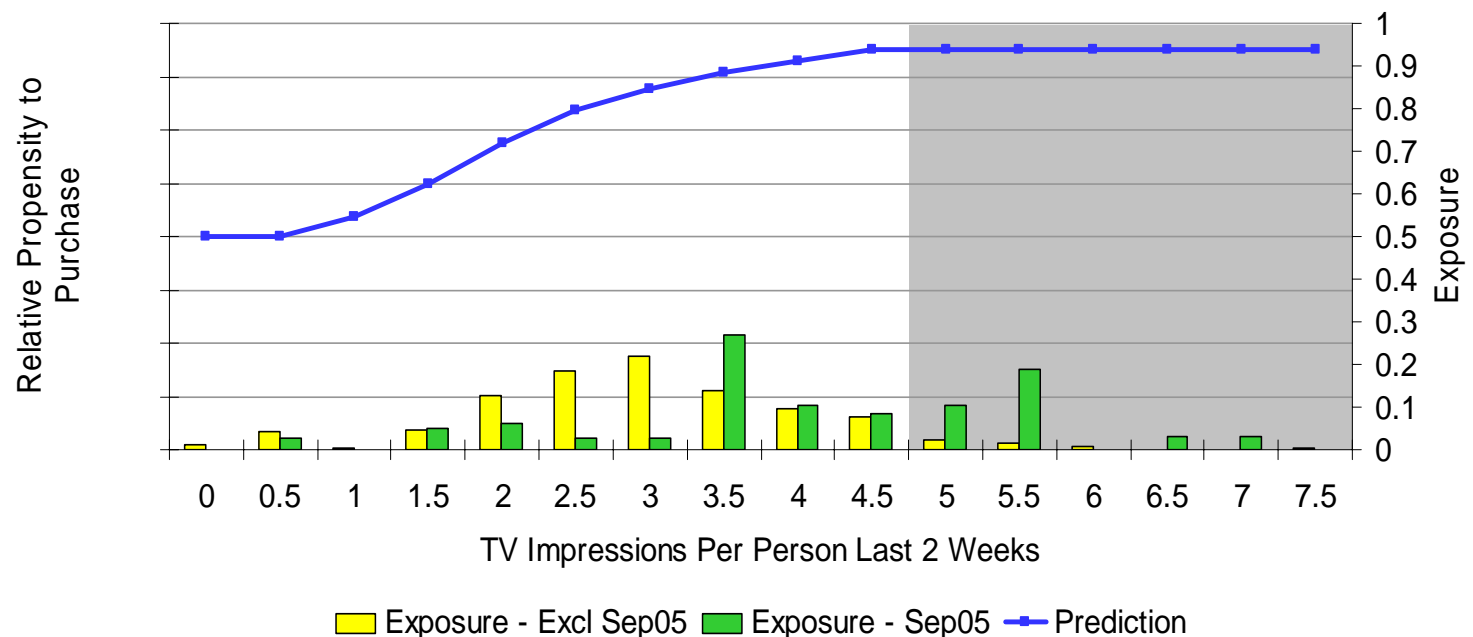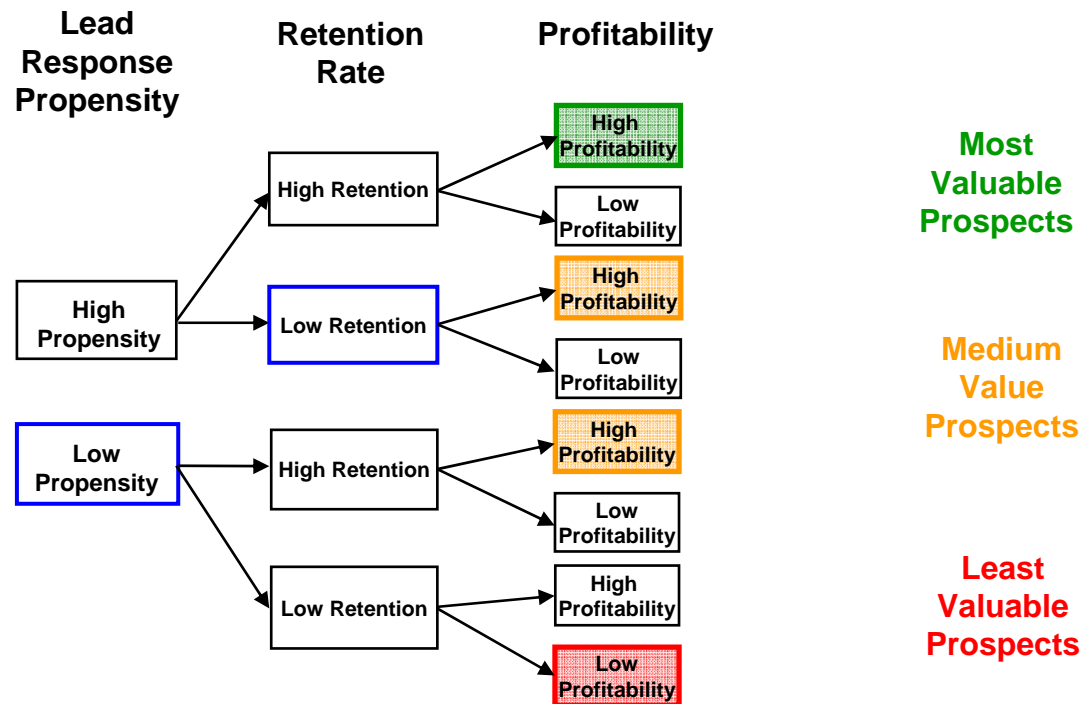
Modelling DM Response Propensity

- Build a GLM statistical model of historic DM response propensities
- Richer data available for current customers, affinity lists, declined quotes, than for new prospects – client specific data and factors
- Renewal dates are key – collect or buy, demographic for new prospects
- Response = quotation sought through call-centre or website
- Differentiate between "baseline" and campaigns-driven past experience

Probability of Web Quotation Within 1 Month by Affluence Decile
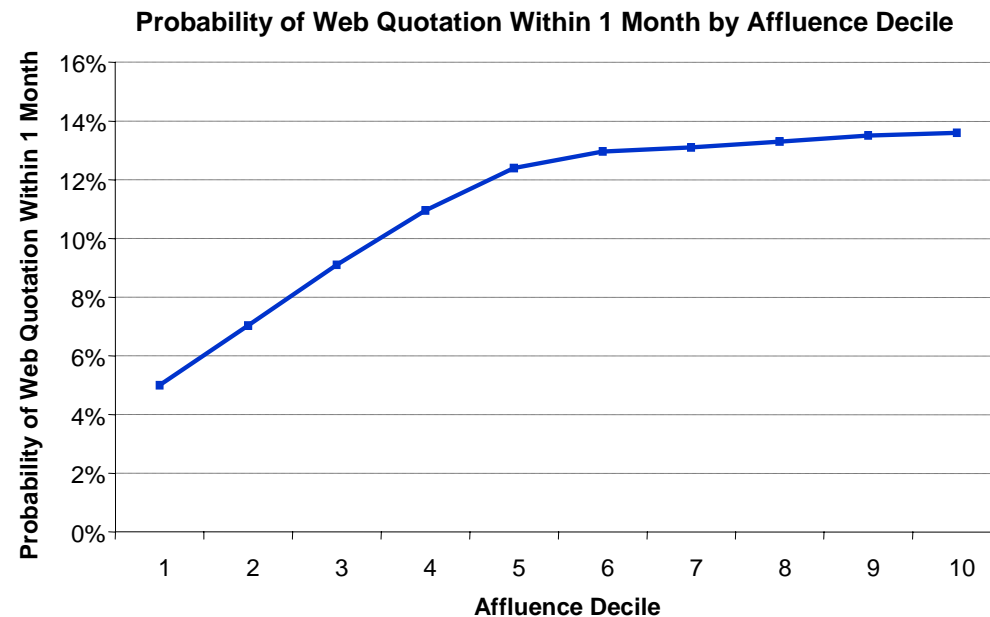
Allowing for Customer Value

Allowing for Propensity AND Value
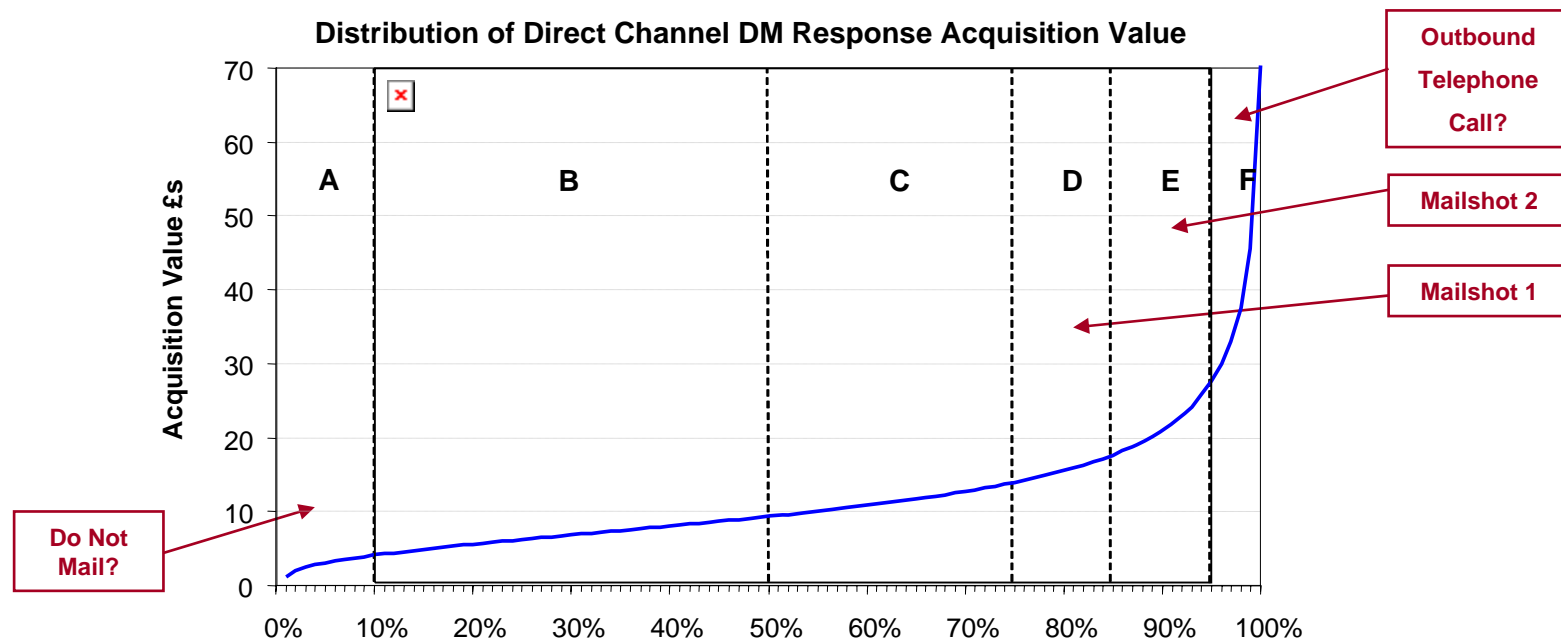
- Wish to direct marketing spend towards the most valuable prospects

- …or towards those who can be influenced to increase value.
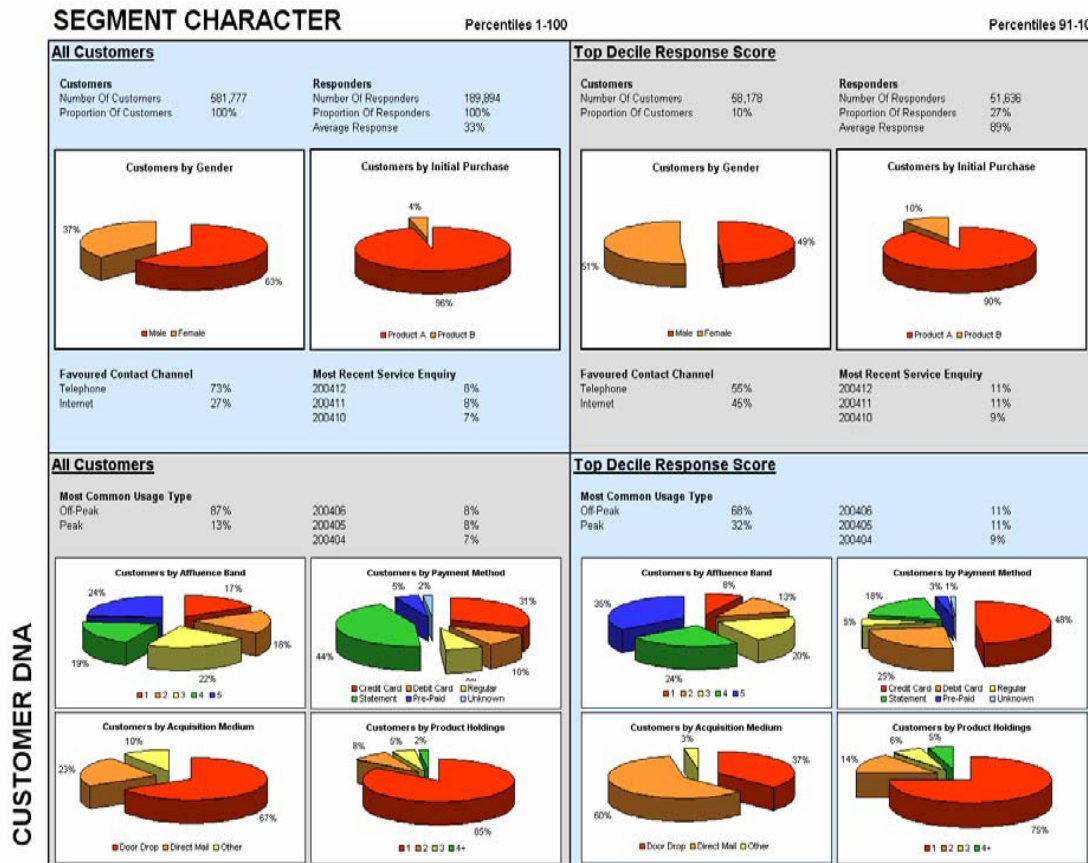
Customer Prospect Segmentation

- Build models of individual customer lifetime profitability
- Combine response propensity and lifetime profitability into individual customer "acquisition value" = "expected value of mailing"
- Rank by value, and segment customer prospects
- Aim = determine appropriate marketing treatment for each segment

Distribution of Direct Channel DM Response Acquisition Value

Y-axis: **Acquisition Value £s** (0, 10, 20, 30, 40, 50, 60, 70)

X-axis: **Proportion of Prospects** (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%)

Segments: A, B, C, D, E, F

Annotations:
- Outbound Telephone Call?
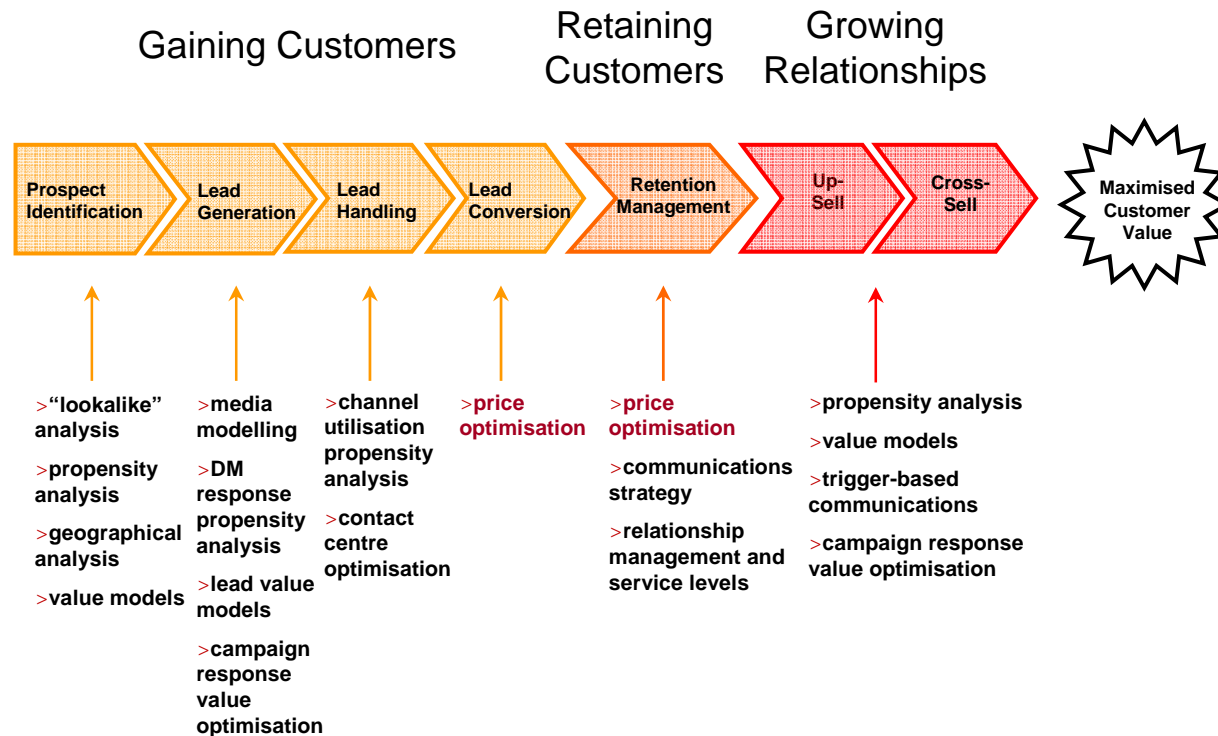- Mailshot 2
- Mailshot 1
- Do Not Mail?

Segment Characterisation – The Customer DNA

- Can characterise segments, and identify segment-specific levers of influence, and trigger events – and so frame targeted activities.

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