Big Data and Business Analytics

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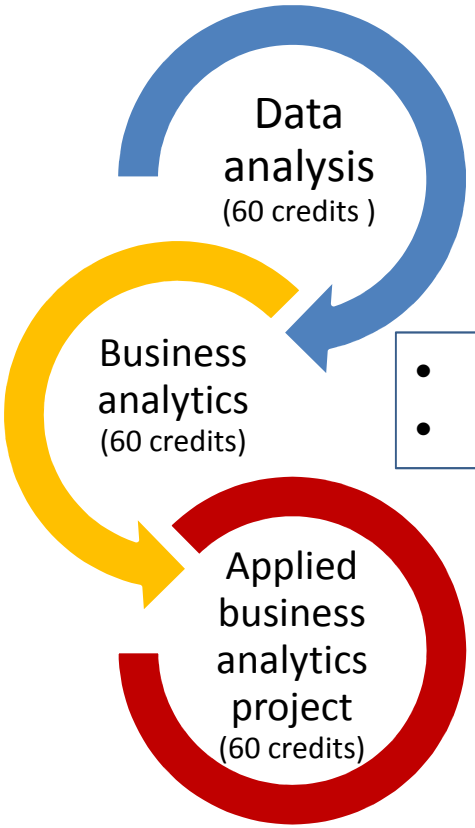
Massey University

Masters in Analytics [Business - Marketing]

180 credit masters	Start Feb. 2015	Block mode	12 or 24 months

Massey University



- Data visualisation
- Data mining

- Return on Marketing Investment
- Customer Insights

- Practical project in collaboration with business/organization

Customer insights in a nutshell

Categorizing

Predicting

Example of a segmentation

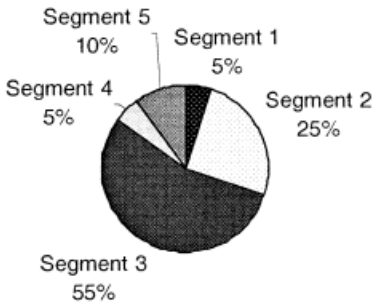
	Small amount per purchase	High amount per purchase
<3 purchases	Low value clients	High value clients
≥3 purchases	Active budget clients	Stars

Examples of developments

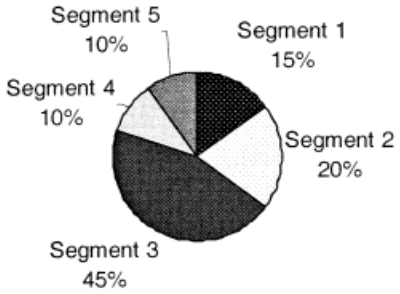
- More data and statistical analysis for segmentation
- Longitudinal segmentation models
- Segmentation models with covariates
- International segmentation models

International applications

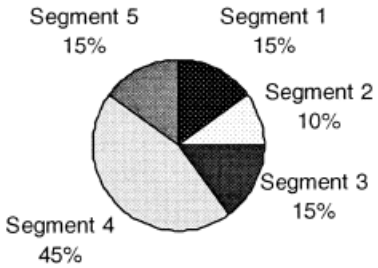
Netherlands



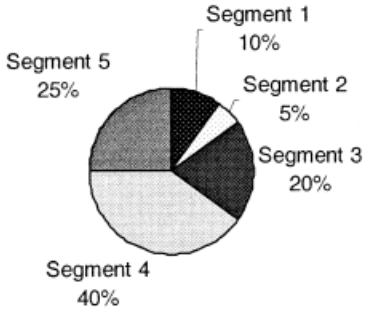
Germany



Australia



NZ

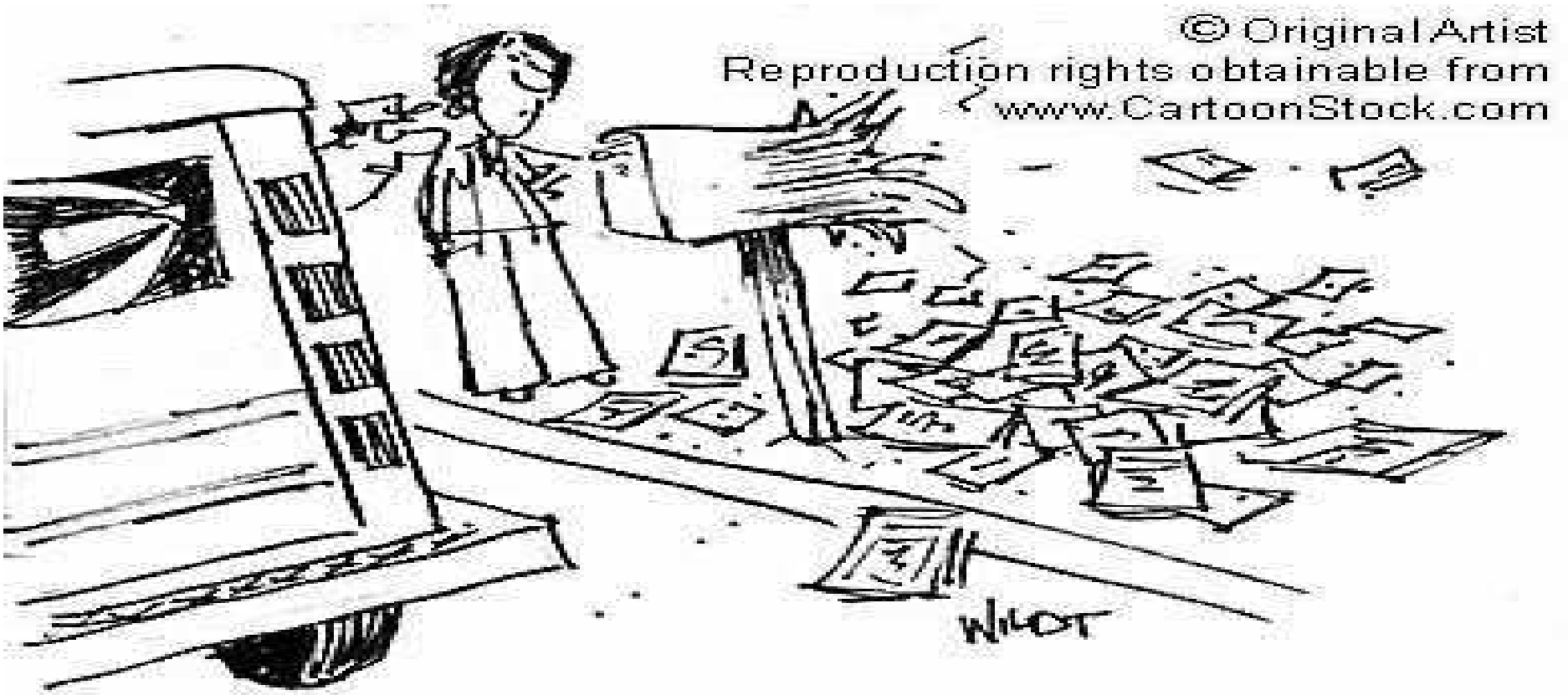


Bijmolt, T.H.A., Paas, L.J., Vermunt, J.K. (2004), "Country and consumer segmentation: Multi-level latent class analysis of financial product ownership", *International Journal of Research in Marketing*, 21 (4), 323-340

A segmentation of European countries based on household financial product portfolios

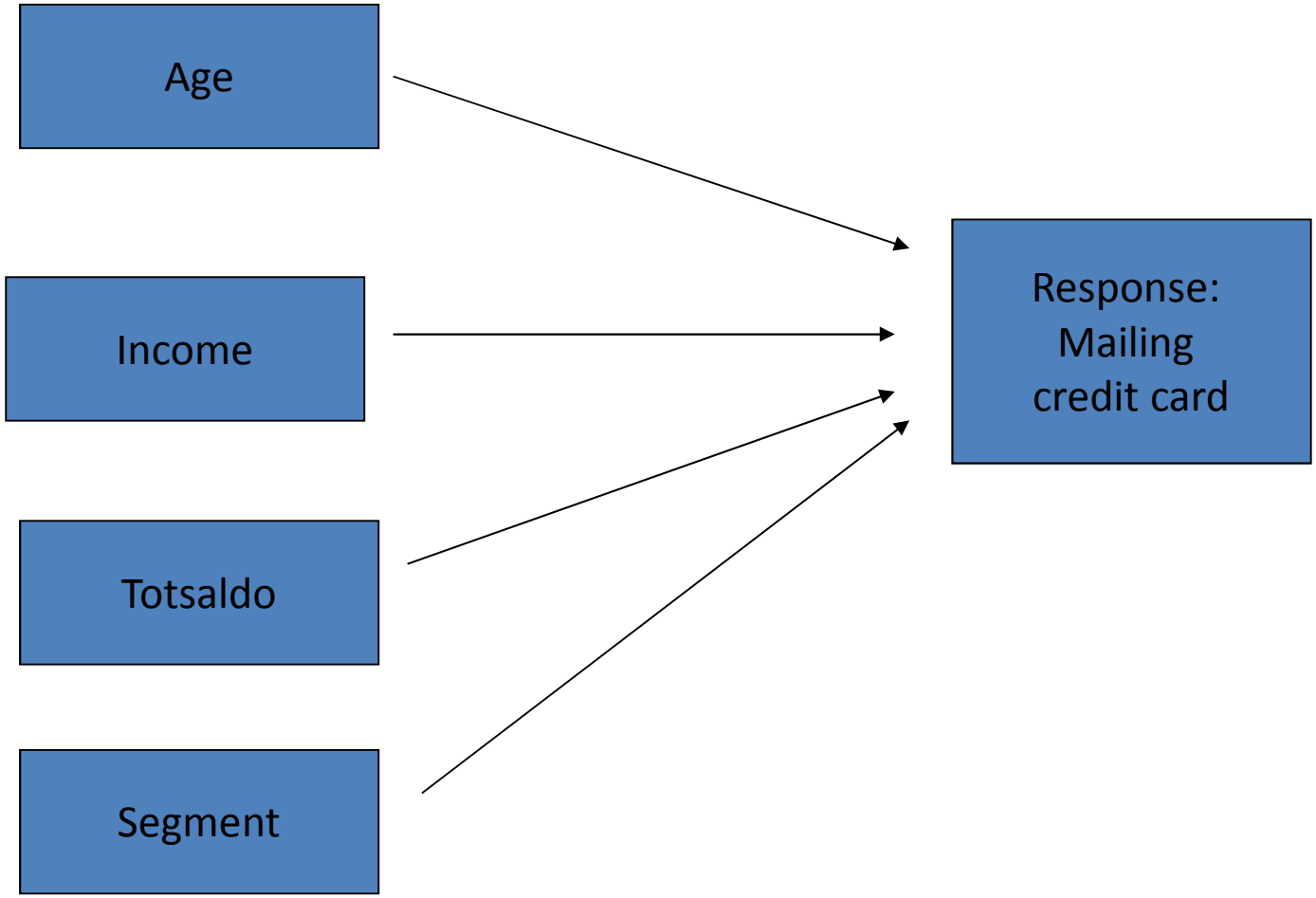
Country segment	Relative size	Posterior probabilities of country-segment membership $\{P(Z_j=t\|Y_j)\}$[a]	
		Country	Probability
1	0.256	Belgium, Germany (East), Germany (West), The Netherlands	1.000
		Luxembourg	0.811
2	0.260	Austria, Denmark, Finland, Sweden	1.000
		Luxembourg	0.189
3	0.175	Great Britain, Ireland, Northern Ireland	1.000
4	0.119	Italy, Portugal	1.000
5	0.064	Spain	1.000
6	0.064	Greece	1.000
7	0.064	France	1.000

Predictive model, e.g., postal mail



"Whoa! A classic case of mailbox catalog overload blowout!

A predictive model

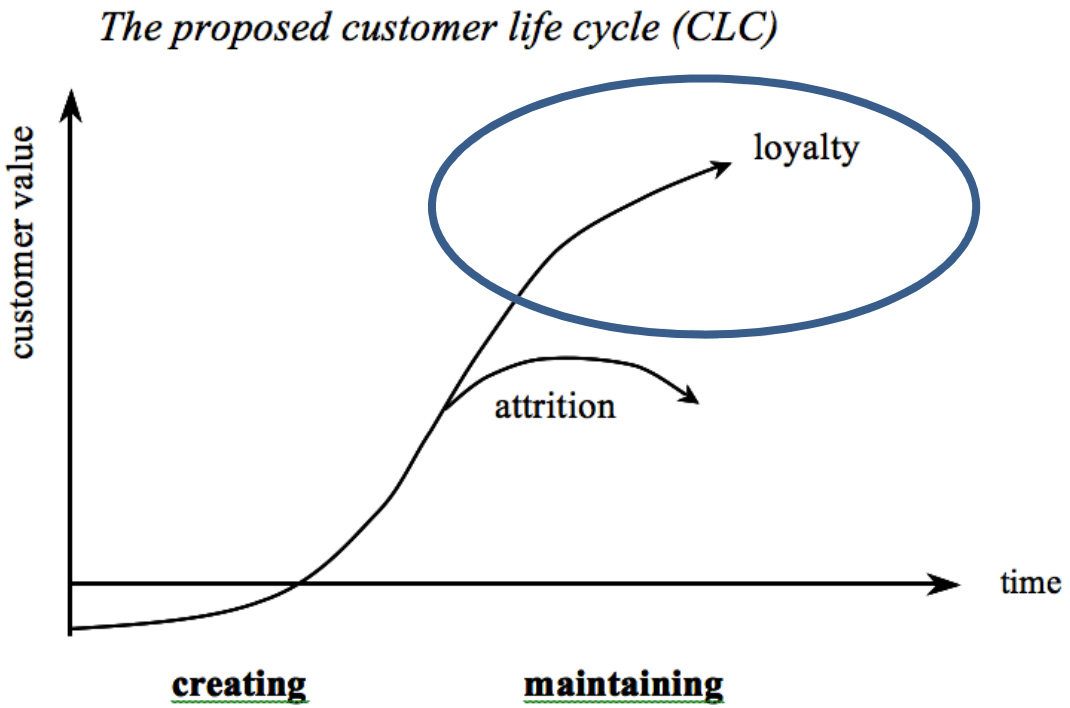


Selection of potential respondents

- Customers where exp(yield) > costs

- Example, if a mailing costs $1 and the expected yield of a response is $100 select all customers with a response probability of at least 1/100 x 100% = 1%

A preferred alternative



- Acquires the person as a customer;
- Reinforces the customer relationship by cross-selling products;
- Keeps him or her as a loyal customer; and
- Turns the customer into an ambassador.

Product ladders

Paas, L.J. (2009), "Acquisition pattern analysis for evolutionary database marketing", *The Service Industries Journal*, 29 (6), 805-812.

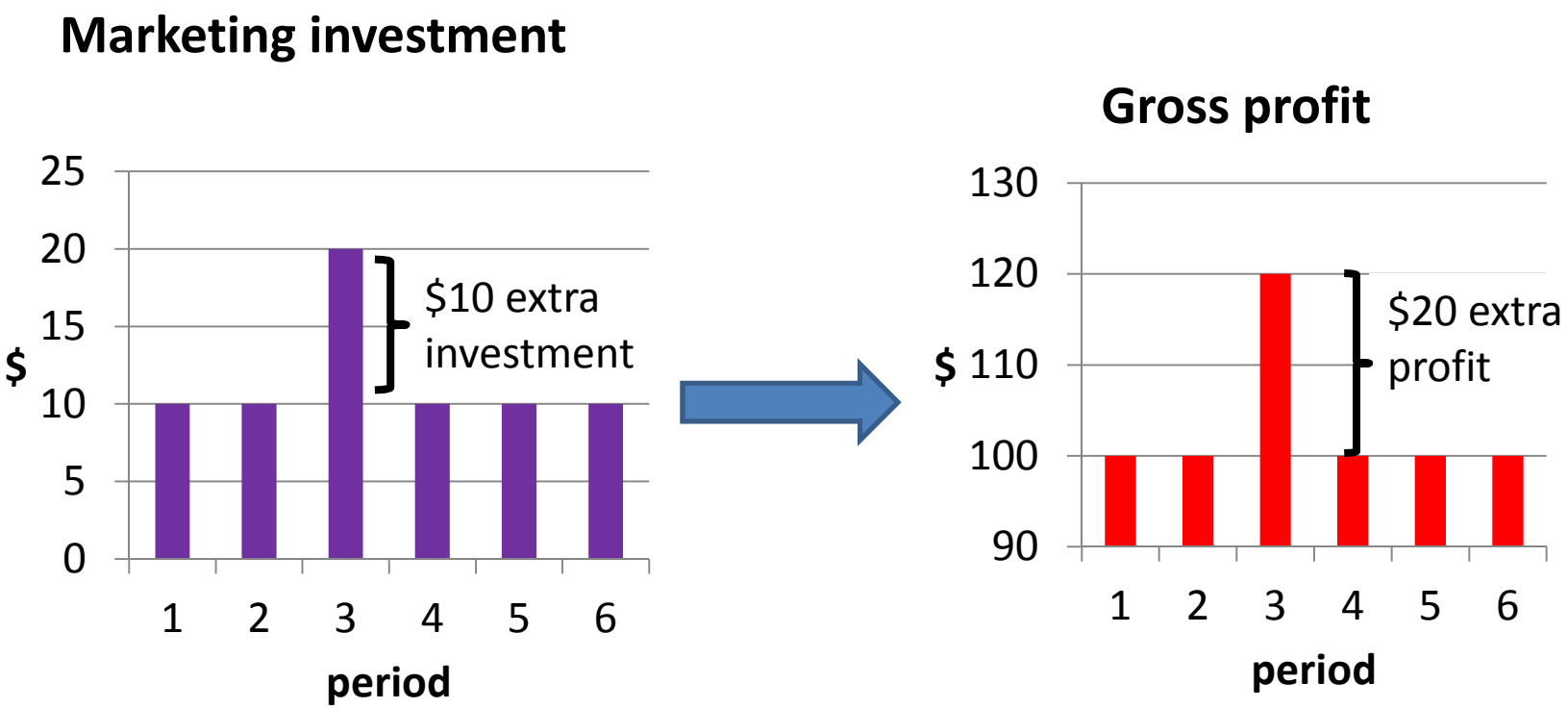
Return on Marketing Investment

Return = $0.10-$1 = -$0.90

Return = $1-$1 = 0

Return = $10-$1 = $9

Essence of approach



Return on Investment = $\frac{\$20-\$10}{\$10}=\$1$

Measuring the Return: Practice

creating: new products, services

communicating: advertising, social media

delivering: distribution

exchanging: pricing

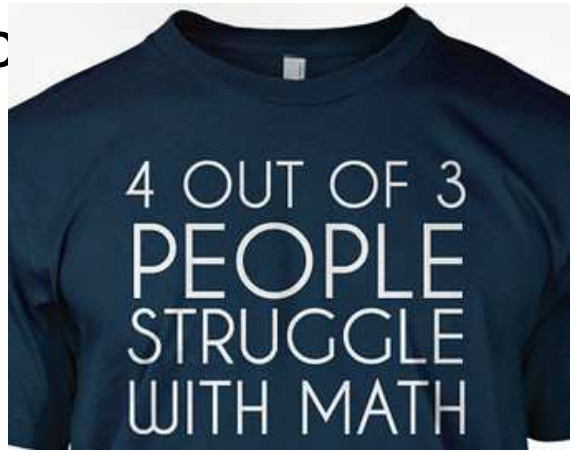
Messy reality:
Fickle consumers, fierce competitors, seasonality, product-harm crises, price wars, recessions, etc.

Solution: Big data and sound statistical models

Sales, profits

Why lack of business analytics in marketing practice?

- Resistance:
  - "Marketing is not quantifiable"
  - "Models are never complete"
  - "Analyses are backward loc
  - Fear for negative ROI
- Difficult:
  - Econometrics, statistics, …
  - Costs (time and money)



Overcoming barriers

- Overcoming resistance
  - Intuition and models are complements
  - No black boxes
  - Discuss outcomes in terms of business decision making
- Overcoming skills shortage
  - Massey University's Masters in Analytics [Business]
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