



Quantifiable Value of Information in Direct Marketing

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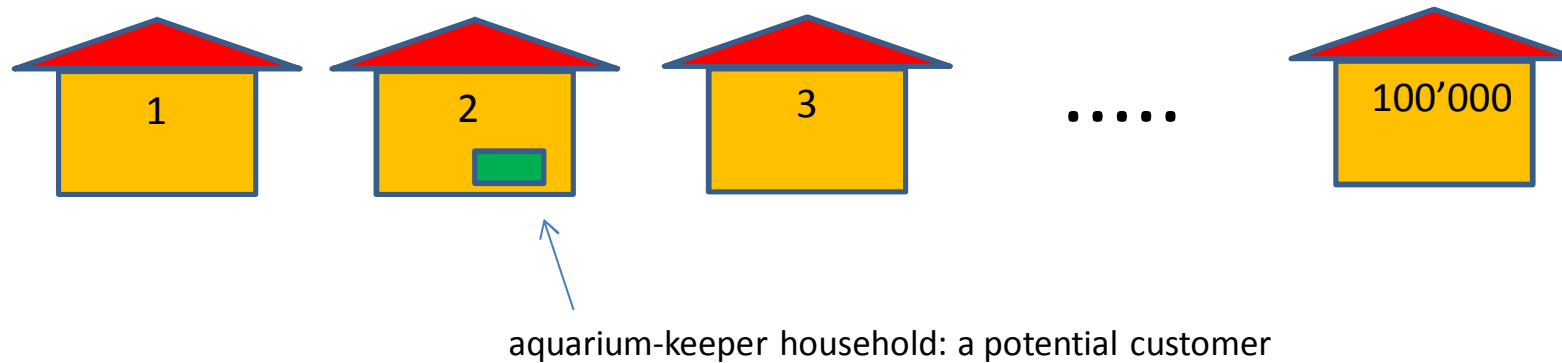
Mail-order company: Angelic Fish Foods



Angelfish, *Pterophyllum scalare*

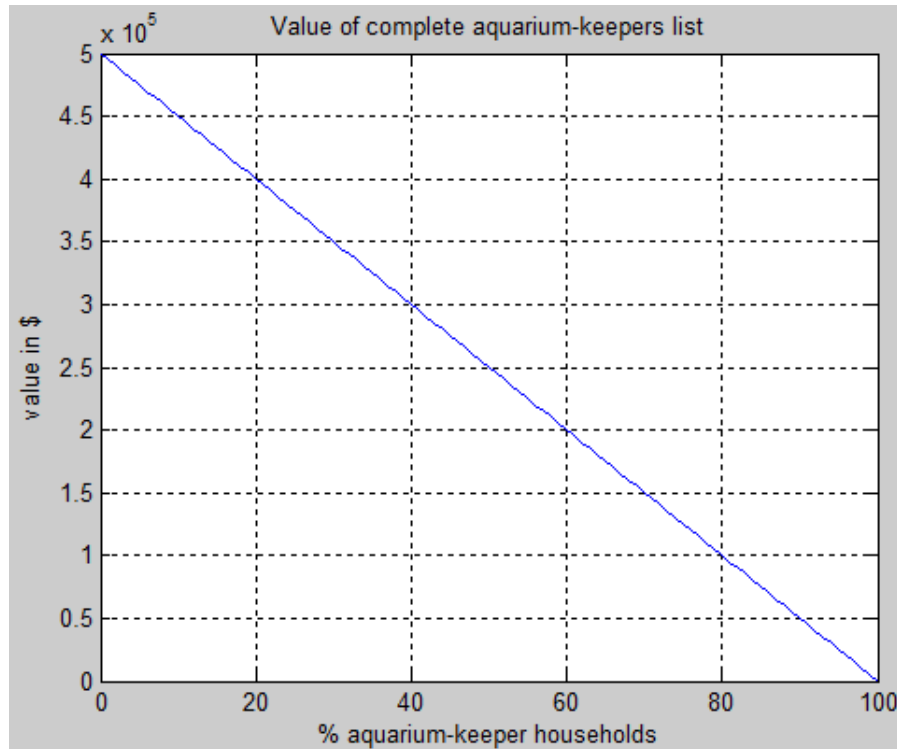
- Sells fish food to aquarium keepers
- Sends copies of colorful mail-order catalogs to potential customers by ordinary post, and receives orders by telephone, mail or fax
- Plans to launch a new product *Angel food* for angelfish with a direct mailing campaign
- Each promotional snail mail to a household costs \$5

Case 1: Households in Gondwanaland

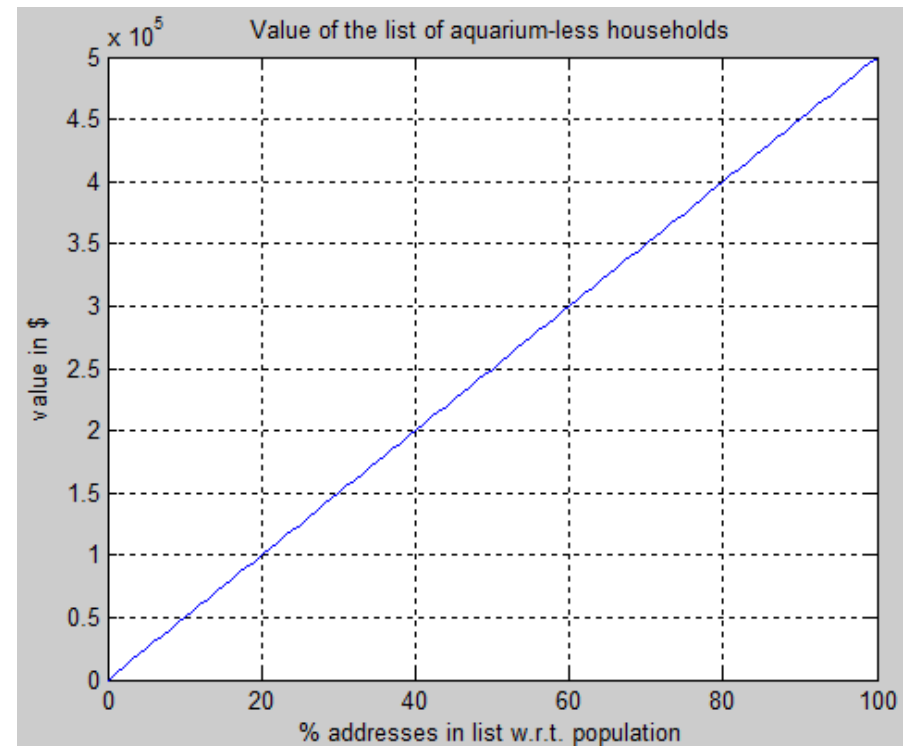


- There are 100'000 households in Gondwanaland, some of them possibly with aquariums
- Each promotion mail for the new fish food “Angelfood” to a household costs \$5
- Only aquarium-keeping households are potential customers for Angelic Fish Foods; the probability of response from an aquarium-less household is zero
- Gondwanaland is a new market area; Angelic Fish Foods has no information and no clues whatsoever about the aquarium-keeper households
- Goal: Reach every aquarium keeping household with promotion mails whatever it may cost

Case 1: Value of Information



Information value of the complete list of aquarium-keeper households in Gondwanaland as a function of aquarium-keepers percentage



Information value of the list of aquarium-less homes in Gondwanaland as a function of the total number of addresses in the list as a percentage of the whole population

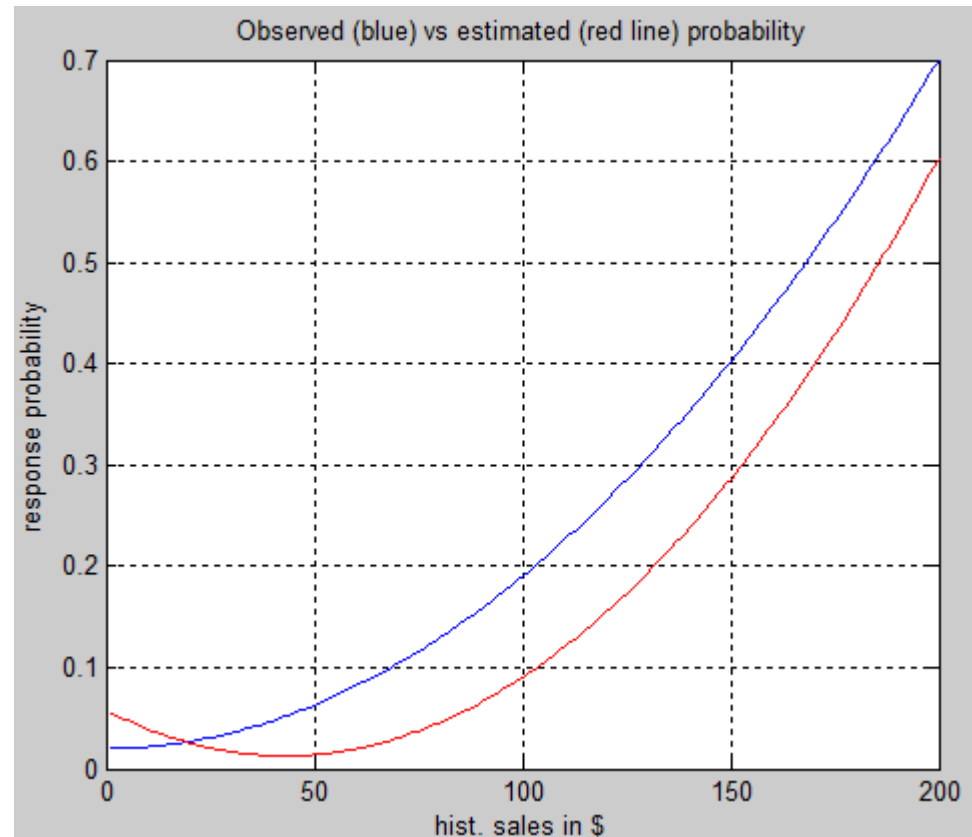
Case 2: Goal is maximizing earnings from the campaign

- “ Angelic Fish Foods has 11'000 existing customers in Gondwanaland (all aquarium-keeping households)
- “ Promotion mails are sent only to these existing customers.
- “ Angelic Fish Foods earns \$50 from a food package if a customer responds to promotion mail.
- “ Each household (i.e. customer) can order only one food package.
- “ Response (to promotion mail) means \$45 net earnings, no response means \$5 net loss.
- “ Historical sales data are used for guessing the response probability of customers.
- “ Goal of the campaign: Maximize net earnings

Direct marketing strategy:

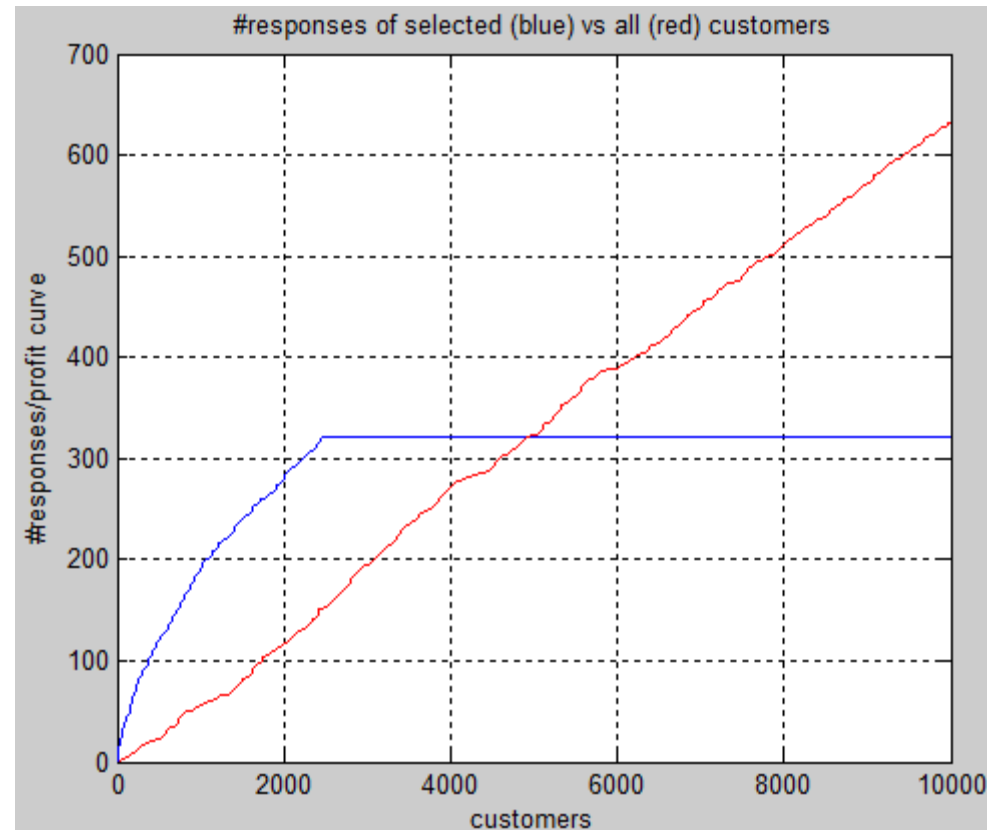
- Evaluation campaign: 1000 promotion mails are sent to randomly selected customers to evaluate the probability of response as a function of historical sales data (sales amount of cichlid foods for each customer)
- Promotion mails are only sent to the selected customers from the rest whose expected net earnings are larger than zero.

Case 2: Real and estimated response probabilities



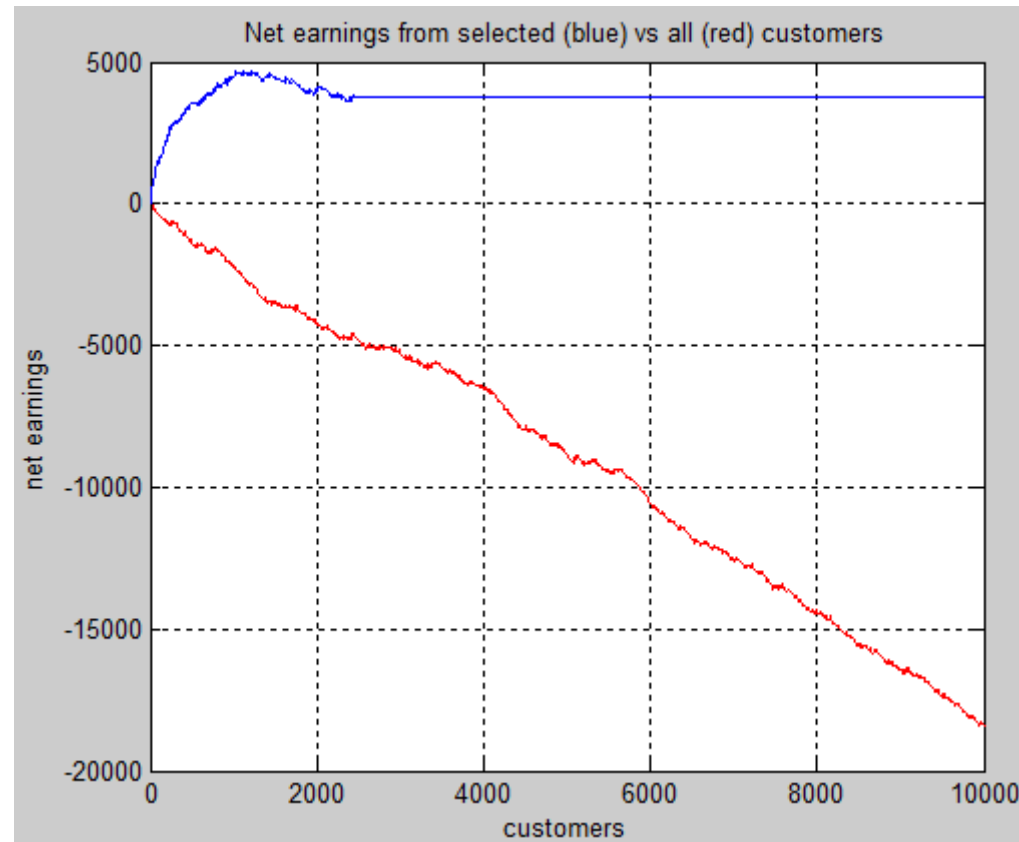
- “ Blue curve: Real conditional probability as a function of historical sales data, which is used to generate historical and observed response data of the customers.
- “ Red curve: Estimated conditional probability curve which is constructed according to the response data obtained in the evaluation campaign.

Case 2: Lift curves (number of customer responses)



- “ Blue curve: Cumulated number of responses by ordered customers (with scores in descending order from left to right) to whom promotion mails are sent.
- “ Red curve: Cumulated number of responses by all customers without any selection or ordering; reference case without customer scoring.

Case 2: Profit curves (net earnings)



- “ Blue curve: Net earnings from ordered customers (with scores in descending order from left to right) to whom promotion mails are sent.
- “ Red curve: Net earnings from all customers without any selection or ordering; reference case without customer scoring.

Download matlab files

Matlab (*.m) files for the simulation of mentioned example cases can be downloaded at finaquant.com/download

How to run the simulation?

1. Make sure that all files are in the current (working) directory of matlab/R
2. Enter command:

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matlab> script_ValueOfInformation
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