



Swiss Re
III

Finding New Opportunities with Predictive Analytics

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23rd Annual CAA Conference

December 5, 2013

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Agenda

- First a Story
- What is Predictive Analytics?
- Predictive Underwriting
- Examples
- Conclusions

First a Story



What is Predictive Analytics?

- Exploits patterns in historical/transactional data to find opportunities
- Extract information from data and use it to predict trends and behaviour patterns

Examples of Intelligent Data Use

- Retail industry
- Credit scores
- Car Insurance
- Fraud detection

Applications for Insurance

■ Find and Retain Profitable Business

- Cross Selling
- Direct Marketing
- Upselling

"You haven't applied for protection, but based on what we know about you, we will pre-approve you and make you an offer"

■ Improve Operational Efficiency

- Optimize underwriting resources
- Reduce underwriting and speed up processing time

"Now that you are applying for protection, let's run some data on you to remove certain tests, and speed up the process"

What is the opportunity for life insurance?

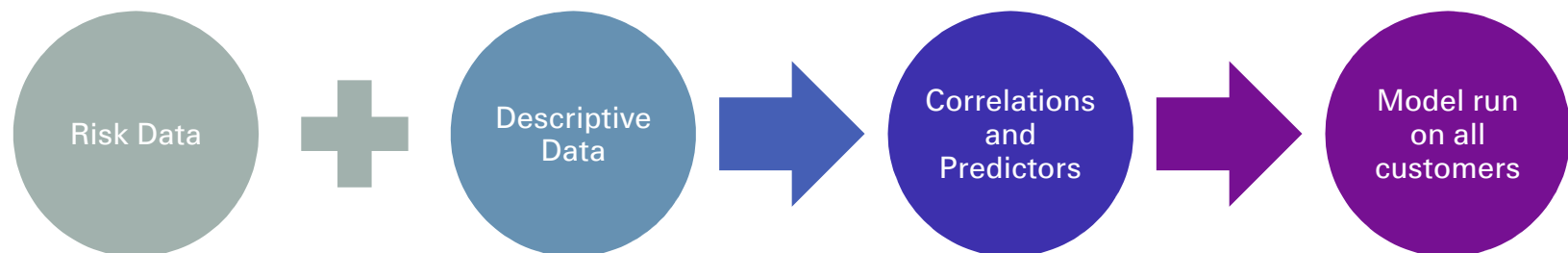
- Underwriting is a pain for customers
- Insurance is still sold and not bought
- Irregular contact with the customer
- Info spread over multiple providers

What if insurance was easy-to-buy for the healthy majority of the population?

- Enhanced customer experience associated with buying insurance
- Sales staff better enabled to make the sale
- Technology is finally leveraged for a single, seamless view of the client

Predictive Underwriting

- Are there any correlations between lifestyle factors and mortality?
- Want to reach a view on customer's health status with the least amount of questions or tests
- Need two comparable depersonalized data sources
- Link underwriting decisions with independent descriptive data
- Algorithm determines the likelihood of each customer to be a certain risk



Building a predictive model

- Any information held on a customer **could** be predictive of their health status – let the data do the talking
- Combining all the predictive variables, an algorithm is built that ranks each customer from worst to best prospect, in terms of "likelihood of being given standard rates at application stage"

➔ Probability of being a bad risk = $1/(1+e^{-y})$

$$y = a + bx_1 + cx_2 - dx_3 + ex_4 + fx_5 + gx_6 + hx_7 - ix_8 + jx_9 - kx_{10} - lx_{11} + \dots +$$

where:

x_1	is age related
x_2	is related to value of home
x_3	is a brand identifier
x_4, x_5, x_7	are related to occupation
x_6, x_9, x_{11}	are account activity related
x_8, x_{10}	are neighbourhood / community related

How is it Different?

- Traditional underwriting is about identifying the unhealthy minority amongst the applicants



- Predictive Underwriting enables us to approach the healthy majority of the population (those who have not applied for protection)
 - result is a much greater pool of potential customers

How does it Compare? UK example

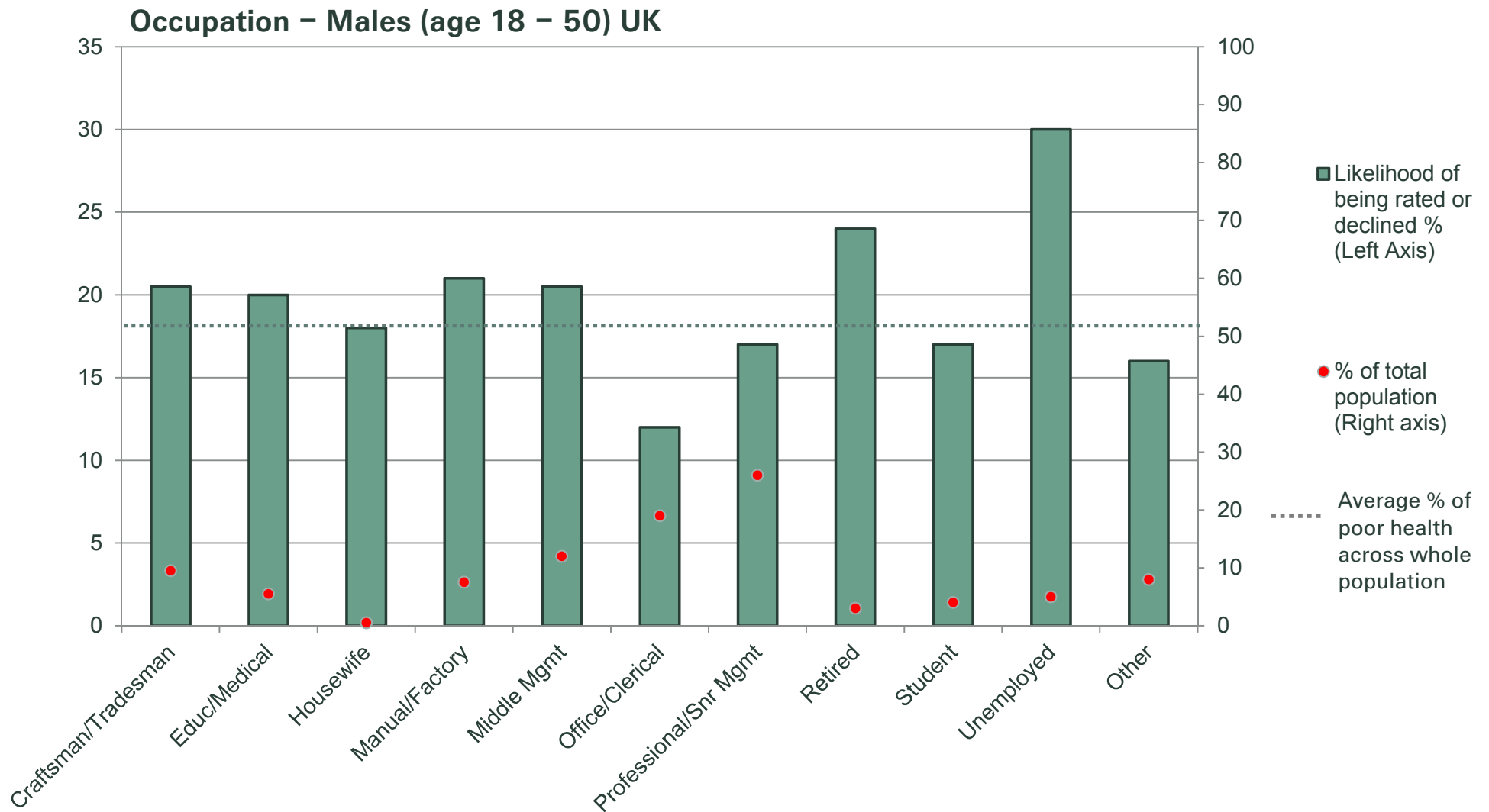
Categories	Typical paper application Fully Underwritten	Swiss Re Predictive Underwriting proposition
Number of questions	20+	1 – 5 tick-box
Time taken to complete	up to 45 mins	<5 min
Point of sale acceptance	up to 40%	100% of those who confirm good health
Guaranteed claims payments	up to 70%	Up to 100%
Number of products offered	Many	1
Advised/Non advised sale	Advised	Non advised
Issue of non-disclosure	High	Significantly reduced



Examples

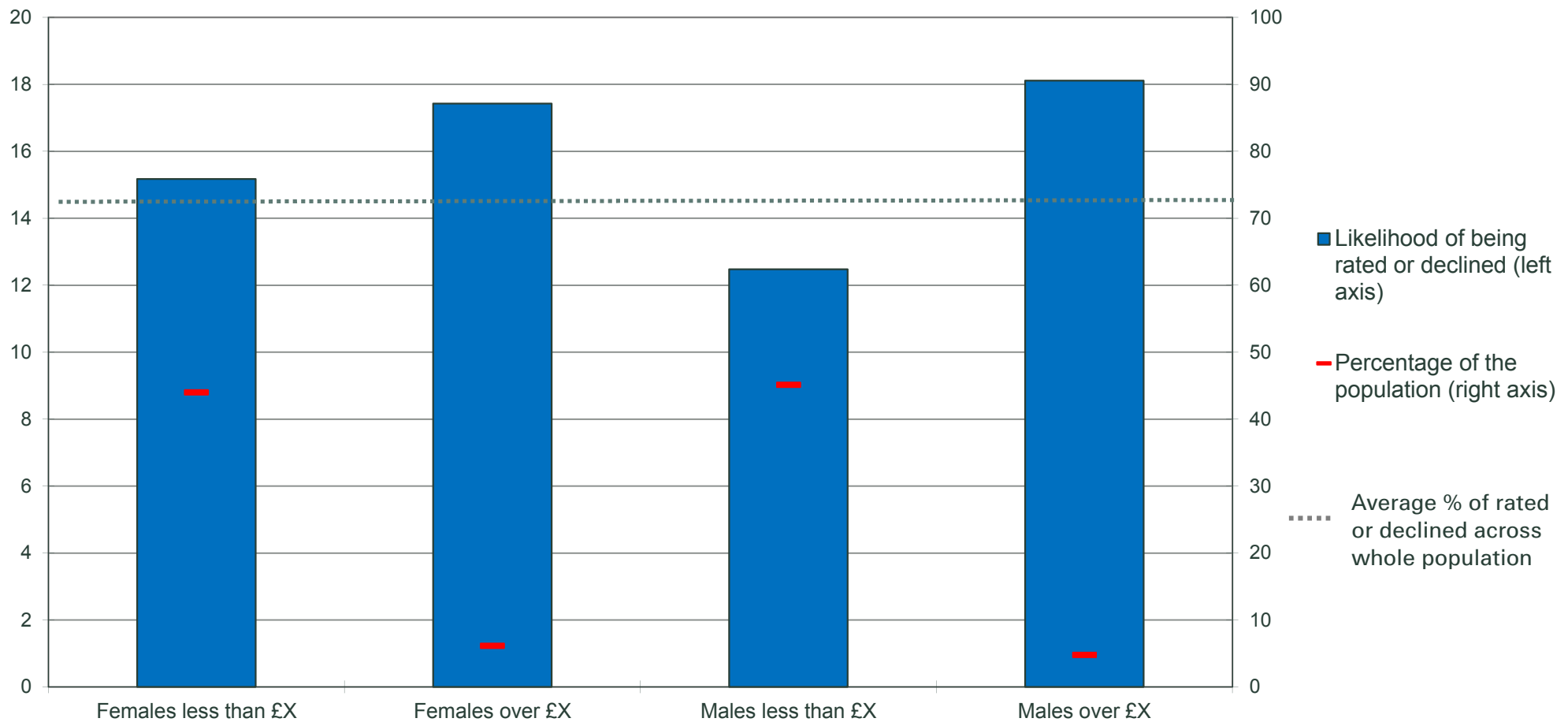
- The following are real examples taken from UK data found in depersonalized datasets

Correlations: occupations and health



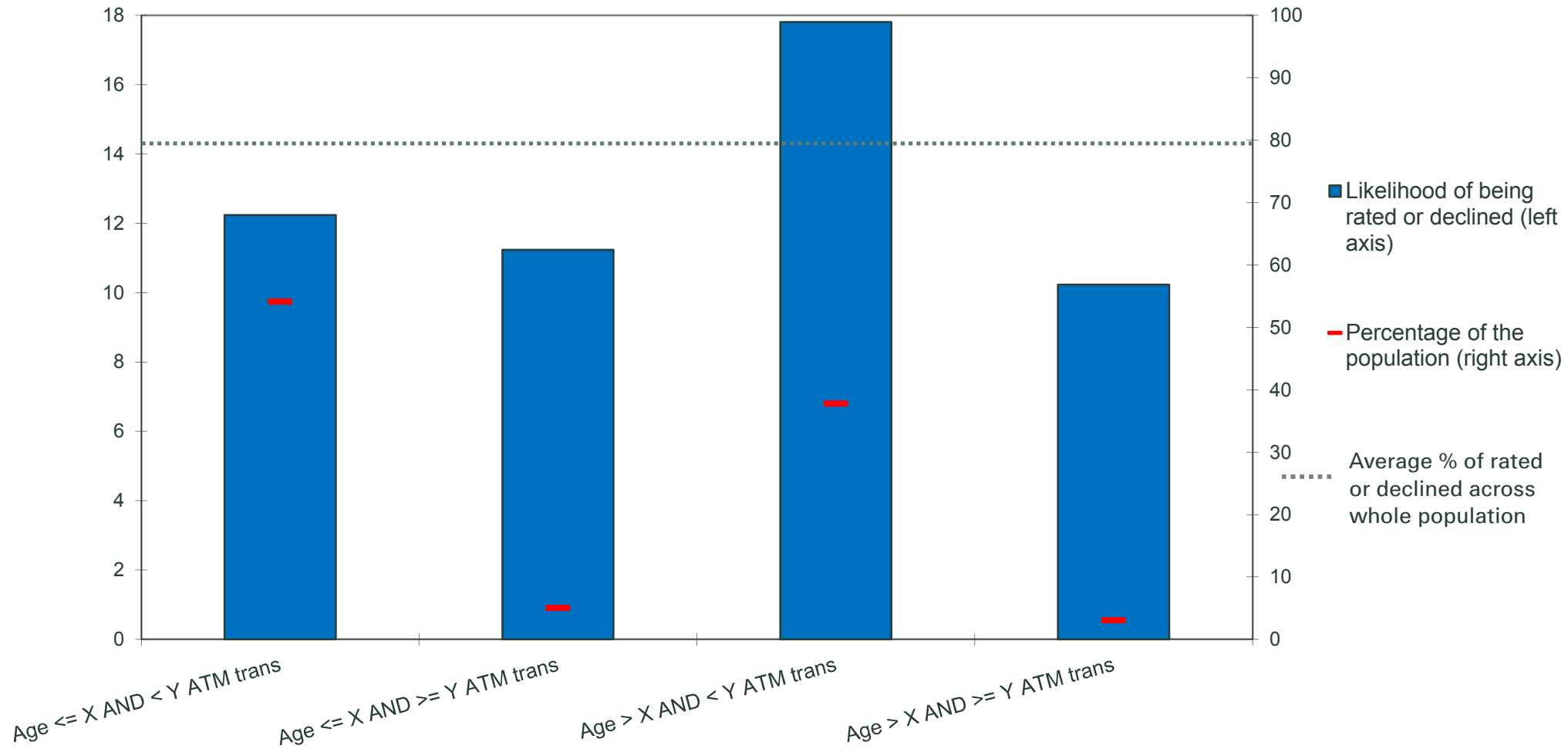
Digging deeper...

Value of Health Transactions in last 12 months (UK Bancassurer)



Further refining...

ATM cash withdrawals in last month (UK Bancassurer)



What are we learning?

- This is a new way to contact customers to make them an offer and does not need to be in conflict with the advice sale model, can work as a complement to it
- Personal "prompt" increases likelihood to buy
- Opportunity to significantly reduce cost of acquisition (e.g. telephone sales dropped from 45m to 7m due to the reduced underwriting)
- Response rates are highest when combined with effective "Propensity to buy" modelling
- The consumer places value on the existing "financial" relationship
- Increased response rates witnessed around key life events – they are a real opportunity to engage with the customer

Conclusions

Our industry has a lot of data....



But those companies that combine this with effective analytics will realize a competitive edge

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Thank you

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