



Data Driven Marketing

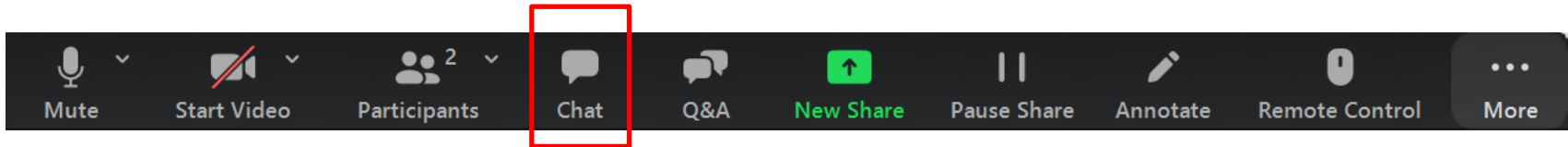
Jarlath Quinn

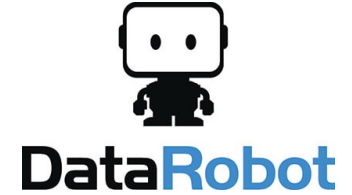
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FAQ's

- Is this session being recorded? Yes
- Can I get a copy of the slides? Yes, we'll email a PDF copy to you after the session has ended.
- Can we arrange a re-run for colleagues? Yes, just ask us.
- How can I ask questions? All lines are muted so please use the chat facility – if we run out of time we will follow up with you.





- Premier accredited partner to IBM, Predictive Solutions and DataRobot specialising in advanced analytics & big data technologies
- Work with open source technologies (R, Python, Spark etc.)
- Team each has 15 to 30 years of experience working in the advanced and predictive analytics industry
- Deep experience of applied advanced analytics applications across sectors
 - Retail
 - Gaming
 - Utilities
 - Insurance
 - Telecommunications
 - Media
 - FMCG



Wanted: More types of machine learning

Now that we're big into machine learning in the cloud, perhaps we should start thinking about how to do it better



BIG DATA
6 Analytics Trends Heading into 2020

Artificial Intelligence can diagnose a brain tumor in just two minutes

Insurance Data May Predict ALS, Research Shows

JANUARY 8, 2020 BY M

Woolworths uses analytics to find stores

The winds of change: The future of predictive analytics in wind farm reliability

You may have noticed, there's a lot of interest in Machine Learning and AI these days...

How Machine Learning in Retail is Changing Businesses?
Engagement and supply chain management are the two top Machine Learning in the retail

The Problem with Hiring Algorithms

By: Brian Gallagher, Ethical Systems

OPINIONS

HOW TO USE PREDICTIVE ANALYTICS IN CRICKET

13/01/2020

Health Data Meets Artificial Intelligence And Machine Learning

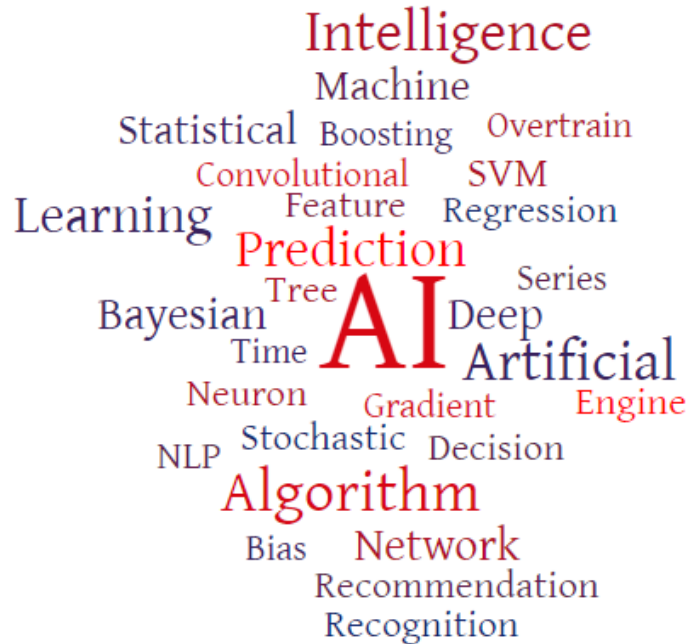
Digital Planet

Machine Learning In Everyday Life

97,000 jobs in analytics and data remained vacant in 2019: Report

Oracle Leverages Deep Learning To Detect Financial Crime

Oracle is using deep learning to find matching patterns for graph analytics within its compliance platform.



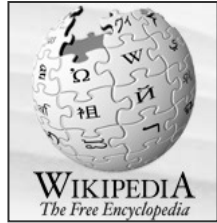
What we talk about when
we talk about AI and
Machine Learning

Intelligence
Machine
Statistical Boosting Overtrain
Convolutional SVM
Learning Feature Regression
Prediction
Bayesian Tree AI Series
Time Artificial
Neuron Gradient Engine
NLP Stochastic Decision
Algorithm
Bias Network
Recommendation
Recognition

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**Predictive
Analytics**





“Predictive analytics encompasses a variety of statistical techniques from data mining, predictive modeling, and machine learning that analyze current and historical facts to make predictions about future or otherwise unknown events.”



“Predictive analytics encompasses a variety of statistical techniques from predictive modeling, machine learning, and data mining that analyze current and historical facts to make predictions about future or otherwise unknown events.”

What do these approaches all have in common?

Table (34 fields, 7,043 records)

File Edit Generate

Table Annotations

		\$R-Churn	\$RC-Churn	\$R1-Churn	\$RC1-Churn	\$R1-Churn	\$L-Churn	\$LC-Churn
1	ing	No	0.889	No	0.930	11	No	0.734
2	ing	Yes	0.889	Yes	0.705	39	Yes	0.593
3	ing	Yes	0.556	No	0.729	25	No	0.545
4	ing	No	0.778	No	0.812	23	No	0.681
5	ing	No	0.889	No	0.883	8	No	0.677
6	ing	No	1.000	No	0.986	10	No	0.843
7	ing	No	0.889	No	0.883	8	No	0.578
8	ing	Yes	0.556	Yes	0.605	41	Yes	0.505
9	ing	No	0.556	No	0.796	34	No	0.687
10	ing	No	0.778	No	0.779	43	No	0.604
11	ing	Yes	1.000	Yes	0.705	39	Yes	0.643
12	ing	No	0.778	No	0.883	8	No	0.769
13	ing	Yes	1.000	No	0.558	35	No	0.615
14	ing	No	1.000	No	0.986	10	No	0.815
15	ing	No	0.778	No	0.880	26	No	0.604
16	ing	No	0.556	No	0.729	25	No	0.554
17	ing	Yes	0.556	Yes	0.503	29	No	0.511
18	ing	No	0.778	No	0.750	45	No	0.651
19	ing	Yes	0.556	No	0.796	34	No	0.533
20	ing	Yes	0.556	No	0.812	23	No	0.638
21	ing	No	0.778	No	0.883	8	No	0.573

OK

They generate new data

What do we mean when we talk about ‘Predictive Analytics’?



- Ironically, it's not *always* about prediction *per se*
- But Predictive Analytics can always *create new data*
- These data take the form of estimates, probabilities, forecasts, recommendations, propensity scores, classifications or likelihood values
- The acid test of an analytical *model* is how accurate these new data are
- But the usefulness of an analytical *application* depends on the *decisions* we take as a result of these new data

Core Applications in Marketing



attract

Acquire customers:

- Understand who your best customers are
- Connect with them in the right ways
- Take the best action maximize what you sell to them



grow

Grow customers:

- Understand the best mix of things needed by your customers and channels
- Maximize the revenue received from your customers and channels
- Take the best action every time to interact



retain

Retain customers:

- Understand what makes your customers leave and what makes them stay
- Keep your best customers happy
- Take action to prevent them from leaving

Predictive
Customer Analytics

Acquire
Grow
Retain



Typical Analytical Applications

- **Segmentation**
 - Customer Behaviour
 - Life Time Value
 - Loyalty
- **Predictive Modelling**
 - Campaign Response
 - Cross-Sell/Up-Sell
 - Customer Acquisition
 - Retention Scoring
 - Real Time Recommendations
- **Other Applications**
 - Basket Analysis
 - Price Elasticity
 - Time Series/Forecasting
 - Sentiment Analysis

Why is this important to organizations?

- **Acquiring customers is expensive**
 - Not unusual to cost **6 times** as much as retaining them
 - Understanding who is *most likely* to convert is very cost effective
- **80% of a company's profits come from 20% of its customers**
 - Need to understand these customers requirements
 - How they behave and what keeps them happy
- **Increasing customer retention rates by 5% increases profits by 25% to 95%.**
 - Study by Bain & Company, working with Earl Sasser of Harvard Business School

Incremental gains in one business area can lead to *extremely* compelling ROI



Working with data models

At the heart of Predictive Analytics is the model

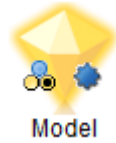
- Predictive Analytics uses historical data from many people/incidents
- Age, Gender, Average Spend, Product Category, Region, Tenure etc.
- With known outcomes/results
- Responded, upgraded, defaulted, recommended, cancelled, donated, failed, renewed etc.
- To build a reusable model



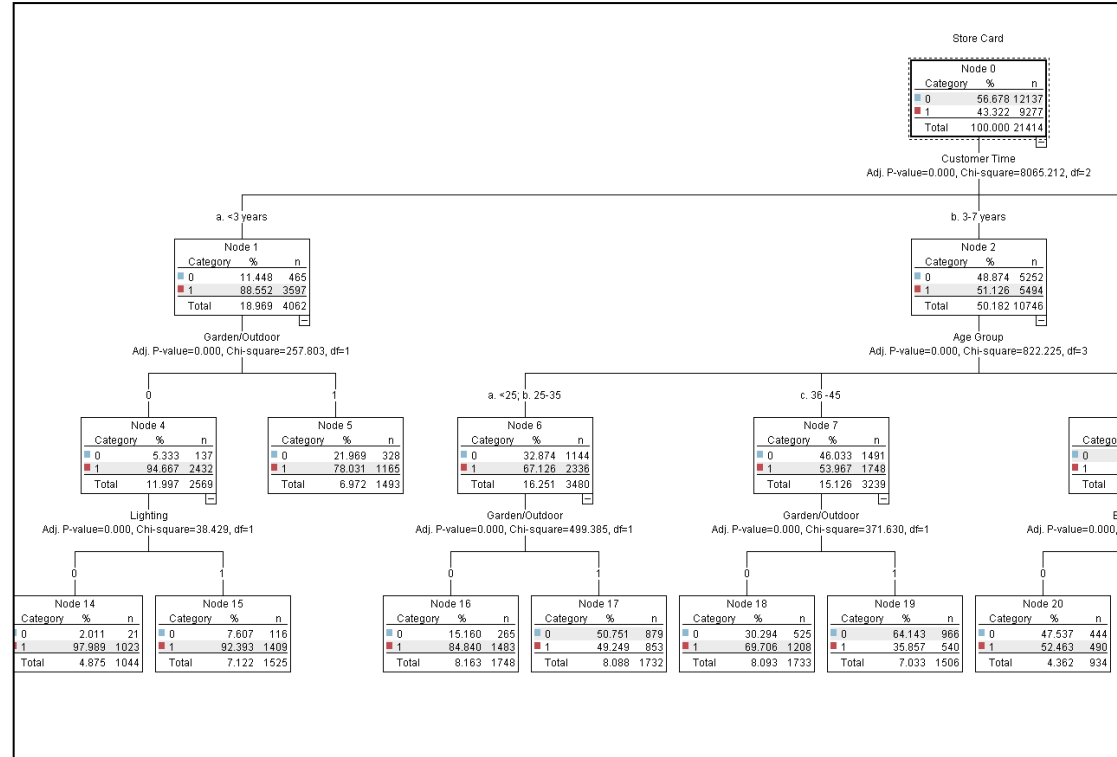
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At the heart of Predictive Analytics is the model



- The resultant model is a *pattern or formula* that can be examined and tested
- Moreover, it can be treated as a *physical object*
- Or an important asset that can be deployed in a wide variety of ways before being archived



At the heart of Predictive Analytics is the model

- We can take new data from individuals or incidents...
- Age, gender, average spend, sentiment, tenure, time since last visit
- Using a model based on the same information...
- Generate probability values, likelihood scores and estimates
- In other words.....predictions



Model

**32% CHANCE OF
CANCELLATION**

**Predicted Lifetime
Value = £938**

0.13 probability
of purchase

**Estimated
NPS = 6**

At the heart of Predictive Analytics is the model

- We can then **deploy** the predictions through multiple channels to make better decisions



Proactive vs. Dynamic Deployment

- **Proactive (outbound)**

- Integrated with existing campaigns
- Can set the decision agenda
- Can be planned in advance
- Less costly and simpler than dynamic but also *less timely & accurate*



- **Dynamic (inbound)**

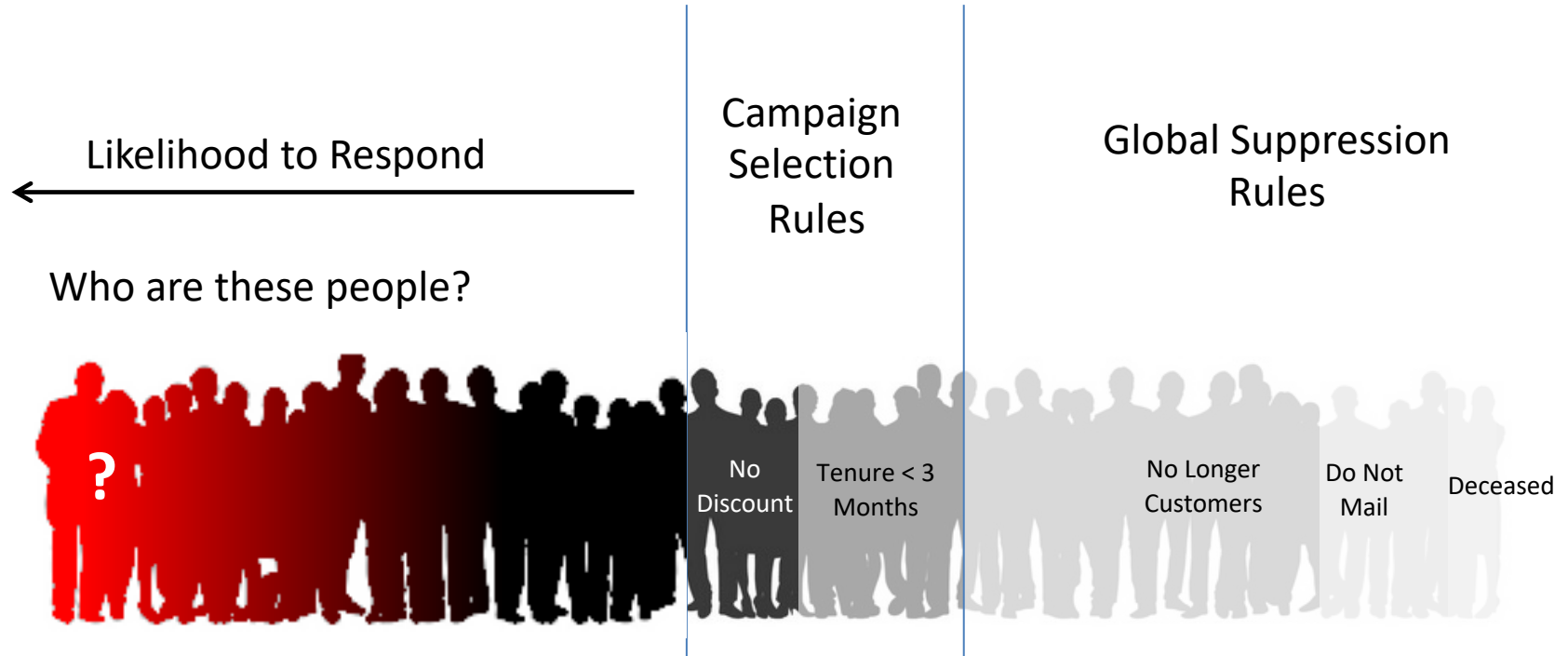
- Offers based on *new data* in real time
- Opportunity to gather new, important information
- Opportunity to revise offer/action – e.g. retain, cross-sell
- Outcome can be captured immediately
- Requires greater investment than proactive approaches



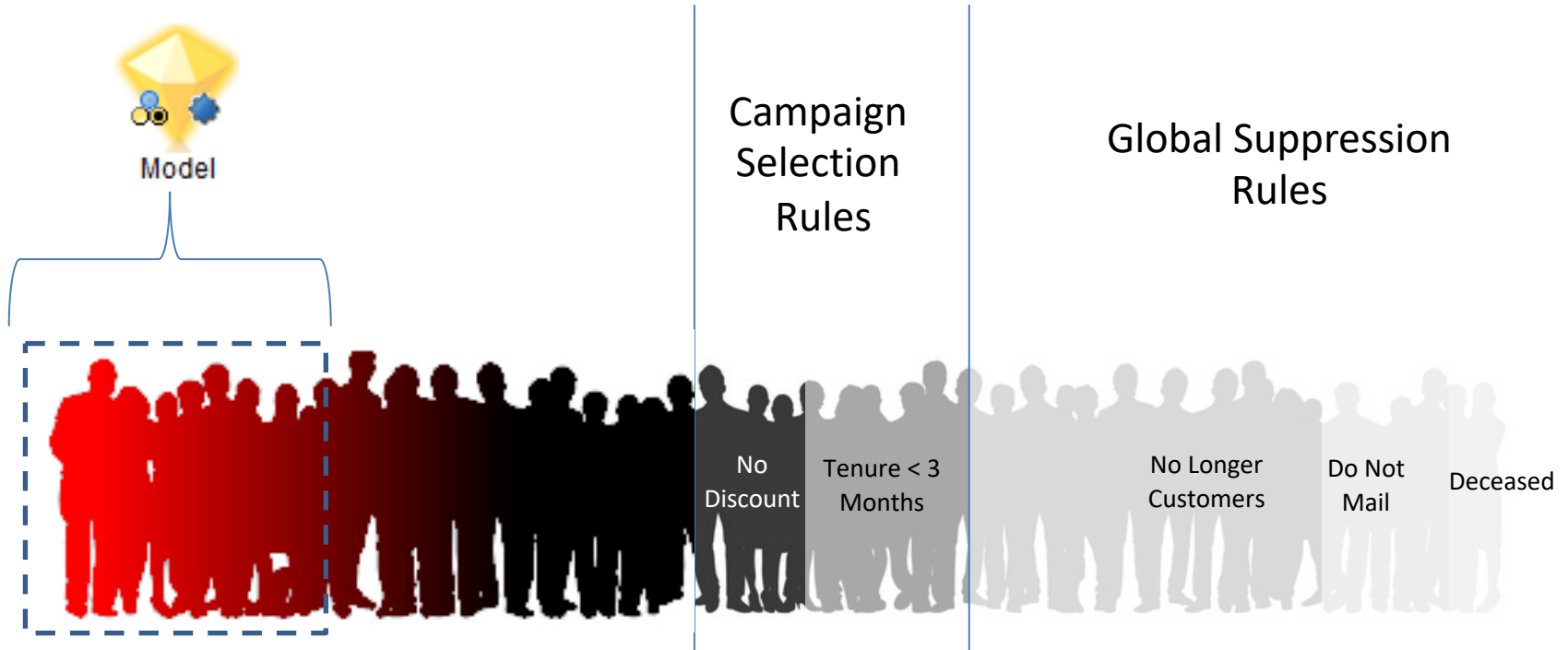


Predictive Modelling

In Marketing, Predictive Analytics enhances the existing campaign selection process..



By finding the *most likely* responders...





Segmentation

Example: How are your customers characterised?

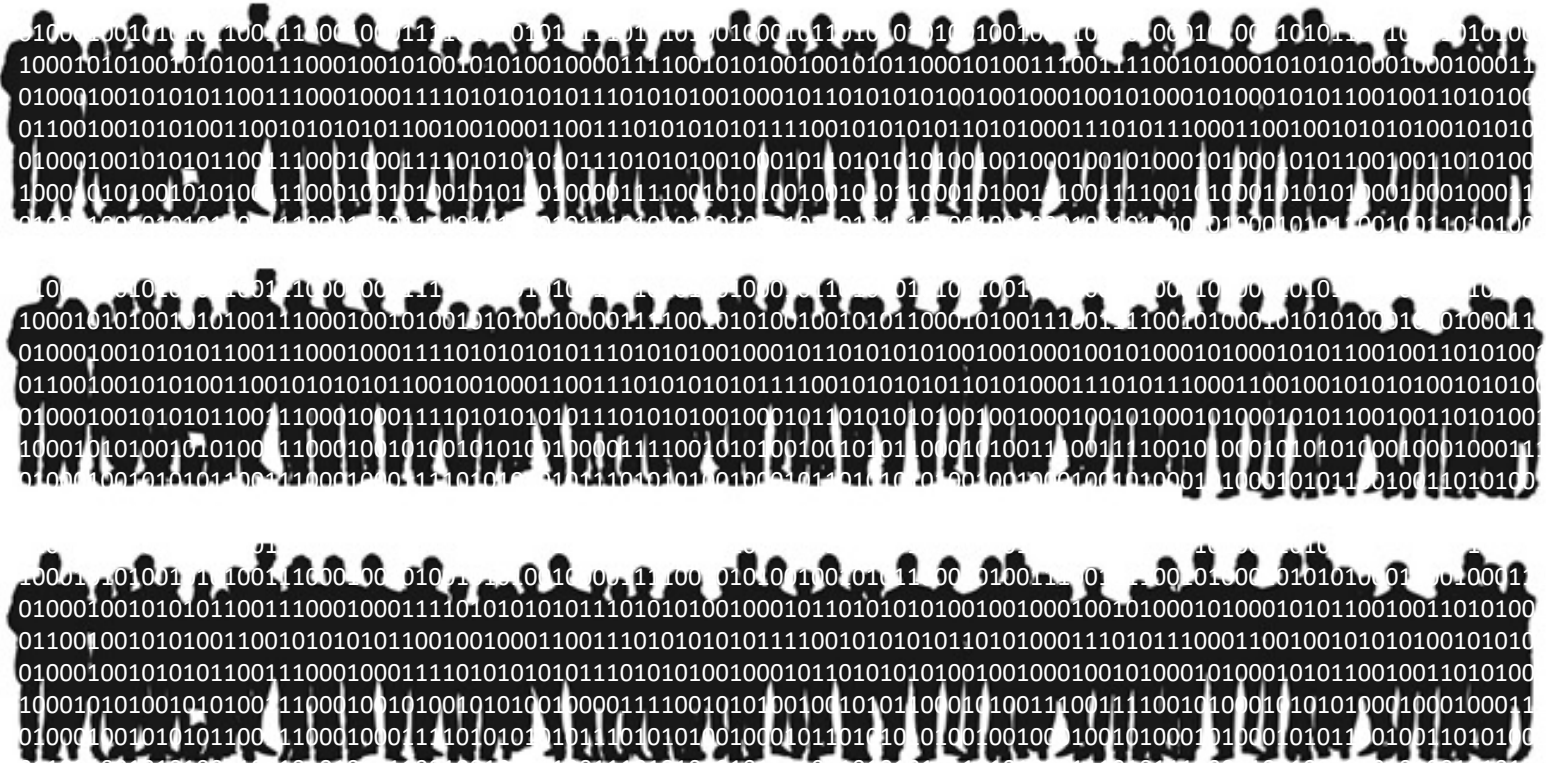
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Using data to uncover customer segments



Deeper customer understanding = more appropriate interactions



‘Unsupervised’ techniques like cluster analysis can uncover subtle differences and previously hidden groups



Association models

What do we offer Anna?

- 31 years old
- Estimated income > £28K
- On average spends £26
- Usually pays with credit card
- Not eligible for discount offer
- In the last 6 weeks bought these items -



What is the next most relevant product to offer her?





Let's look at an example...

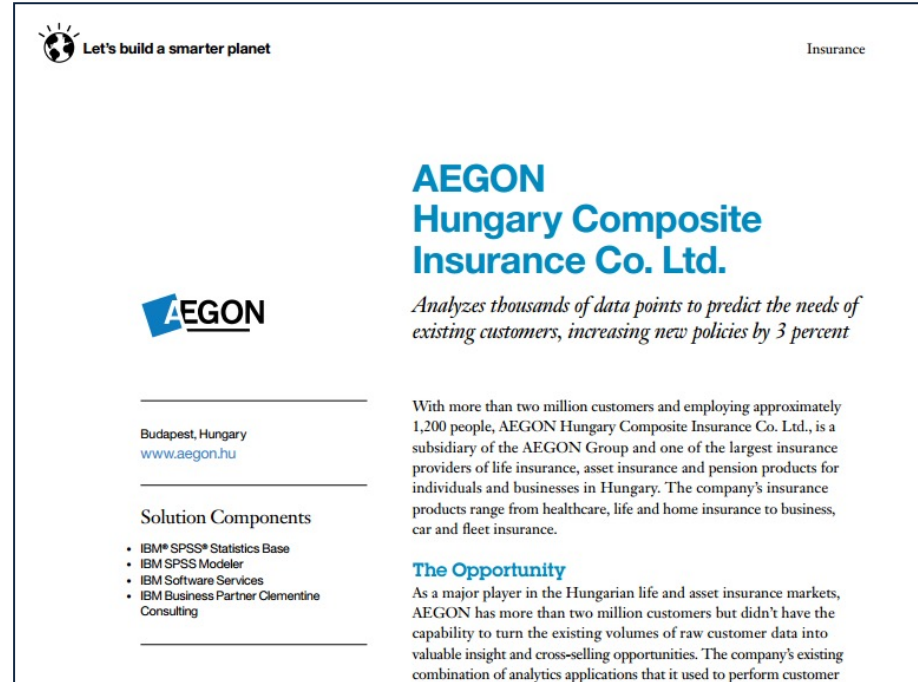
Practical Questions

- Why this particular area of focus?
- How has this been measured thus far?
- What metrics are we trying to hit?
- Who is impacted?
- How will it be tested?
- What are the costs associated with errors?
- What will be done differently as a result of the application?
- How will know you if it worked?
- How will it be updated or maintained?



AEGON

- Improved customer response by 78% through a targeted direct marketing campaign that precisely reflects customer needs
- Increased policy purchases by 3% , from 5% to 8%
- Expected to boost cross-sell opportunities by selecting qualified customers and predicting type of insurance offerings needed



The slide features the IBM logo and the slogan "Let's build a smarter planet" in the top left corner. The word "Insurance" is in the top right. The AEGON logo is centered on the left. Below it, the text "Budapest, Hungary" and "www.aegon.hu" is displayed. A horizontal line separates this from the "Solution Components" section, which lists: "IBM® SPSS® Statistics Base", "IBM SPSS Modeler", "IBM Software Services", and "IBM Business Partner Clementine Consulting". To the right, the heading "AEGON Hungary Composite Insurance Co. Ltd." is followed by a quote: "Analyzes thousands of data points to predict the needs of existing customers, increasing new policies by 3 percent". Below this is a paragraph about the company's size and products, and a section titled "The Opportunity" describing the use of analytics for customer insights.

Let's build a smarter planet

Insurance

AEGON
Hungary Composite
Insurance Co. Ltd.

Analyzes thousands of data points to predict the needs of existing customers, increasing new policies by 3 percent

With more than two million customers and employing approximately 1,200 people, AEGON Hungary Composite Insurance Co. Ltd., is a subsidiary of the AEGON Group and one of the largest insurance providers of life insurance, asset insurance and pension products for individuals and businesses in Hungary. The company's insurance products range from healthcare, life and home insurance to business, car and fleet insurance.

The Opportunity

As a major player in the Hungarian life and asset insurance markets, AEGON has more than two million customers but didn't have the capability to turn the existing volumes of raw customer data into valuable insight and cross-selling opportunities. The company's existing combination of analytics applications that it used to perform customer

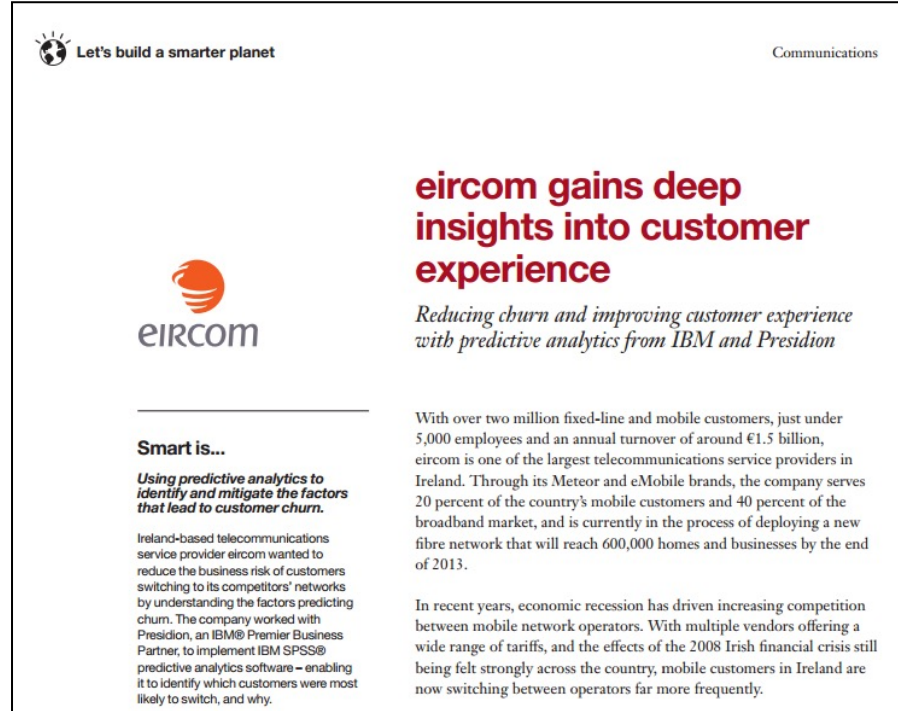
Budapest, Hungary
www.aegon.hu

Solution Components


- IBM® SPSS® Statistics Base
- IBM SPSS Modeler
- IBM Software Services
- IBM Business Partner Clementine Consulting

Eircom

- “Our analytics team discovered that customer experiences during the on-boarding process when they join our mobile network have a significant effect on the likelihood of churn.”
- Enabled eircom to identify the most effective ways to improve the customer experience – reducing churn on key customer journeys by around 6%



Let's build a smarter planet Communications


eircom

eircom gains deep insights into customer experience

Reducing churn and improving customer experience with predictive analytics from IBM and Presidio

Smart is...

Using predictive analytics to identify and mitigate the factors that lead to customer churn.

Ireland-based telecommunications service provider eircom wanted to reduce the business risk of customers switching to its competitors' networks by understanding the factors predicting churn. The company worked with Presidio, an IBM® Premier Business Partner, to implement IBM SPSS® predictive analytics software – enabling it to identify which customers were most likely to switch, and why.

With over two million fixed-line and mobile customers, just under 5,000 employees and an annual turnover of around €1.5 billion, eircom is one of the largest telecommunications service providers in Ireland. Through its Meteor and eMobile brands, the company serves 20 percent of the country's mobile customers and 40 percent of the broadband market, and is currently in the process of deploying a new fibre network that will reach 600,000 homes and businesses by the end of 2013.

In recent years, economic recession has driven increasing competition between mobile network operators. With multiple vendors offering a wide range of tariffs, and the effects of the 2008 Irish financial crisis still being felt strongly across the country, mobile customers in Ireland are now switching between operators far more frequently.

C Spire Wireless

- United States' largest privately held wireless communications company
- Enhanced customer satisfaction levels
- Improved the effectiveness of retention campaigns by 50 %
- Boosts cross-selling and up-selling, with sales of select accessories rising by 270%.

 Let's Build A Smarter Planet



C Spire Wireless connects more closely to customers

Reducing churn and increasing sales through analytical decision management

Smart is...

Giving employees real-time recommendations on how to maximize and enhance every customer interaction

Finding new, more effective ways to reduce customer churn is at the heart of every telecommunications company's strategy, and C Spire Wireless is no exception. With customers expecting more and mass marketing techniques losing their impact, the company felt that the key to success lay in getting to know its customers better and putting this information into the hands of front-line employees.

Consumers have limited patience with being treated as one of the pack: they want their service providers to address their needs as individuals. In the high-stakes telecommunications business, how do companies get the right messages to the right people and create that personal connection?

C Spire Wireless knew that the answer to this question lay in getting to know its customers better and – most importantly – putting this insight into the hands of the employees who interact with these customers in stores, via email or web, and over the telephone.

Customer-led strategy

As the United States' largest privately held wireless communications company, C Spire Wireless competes with public companies that have the advantage of greater size and more resources. Nevertheless, the

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The insider's guide to predictive analytics

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 - Assist with selection, pilot, implementation & support of analytical tools
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 - Guided consulting & training to develop in house skills
 - Delivery of classroom training courses / side by side training support
 - Identification & recruitment of analytical skills into your organisation
- **Advice and Support**
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 - Technical support services around SPSS



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Thank you