Past, present, and future
Analytics at Loyalty NZ

V. Morder
SUNZ 2014
The undisputed customer loyalty experts

To create, maintain and motivate loyal customers for our Participants

Win the customer again and again. Be an indispensable part of a consumer’s life. Value every day.
The Past
New Zealand’s leading loyalty programme

- 2.6 million card holders
- 300K transactions per day
- 750K rewards each year worth $70M
- 75 Brands
- Approximately 50 campaigns each month
- Over 24M emails each year
- 100K Facebook likes
The points and rewards we issue are not just a reward for loyalty but a reward for the data we collect.
LOYALTY NEW ZEALAND and
Fly Buys – “Dream a Little”

BUSINESS MODEL

• Many ways for consumers to collect points, as the coalition of participants covers the full range of retail products. Strong retention.
• Participants pay LNZL for each point collected.
• The carrot is the reward. “Dream a Little” is ‘the one thing’.
• Cycle of usage and redemption.
• Leading innovator in the industry.
• Recognised from the start that the real value is from the data.
Data on 75% of all NZ Households

Preferences and Lifestyles
Basket Data (to SKU level)
Contact Details and DPIDs
Spend and Visits (value and frequency)
Where and when they shop
Census and Property Data
Response history
Redemption
Online Data

Shopping behaviours for the last 17 years across major retail brands
History of data and analytics
In the beginning....

• Data
  • Small, manual, fixed

• Systems
  • Static, relational

• Analytics
  • Sophisticated statistics and mathematics
  • Retrospective
  • Hand-crafted variables
  • Static view
  • Long time lags
WHAT DO WE DO?

• We help you solve business problems by applying a range of analytic techniques to transform raw data into valuable information and actionable insight.

• The team is obsessed with helping our partners get to know and understand their customers and prospects better, as understanding a customer's needs is more than just knowing their name and address. We do this so you can build a stronger, more relevant relationship with these customers.

• In turn, the customer receives more relevant offers, reducing marketing waste and increasing cut-through.
Ensuring Data Consistency

• Our Analysts are focused on the customer and what drives them. The team wants to ensure we are continually building and enhancing our single view of the customer.
  – This view needs to be readily available for all analyses, reports, models, campaigns, etc...
• Same data can feed into our communication management framework
  – Capture data about interaction
  – Use relevant customer data to drive the message/offer
• Analysis data combined with customer interactions maximises our understanding of what drives the customer and ensures relevance of communications
# Building Servicing Capability

<table>
<thead>
<tr>
<th>BUSINESS NEED</th>
<th>LOYALTY NZ PRODUCTS</th>
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<tbody>
<tr>
<td>Acquisition</td>
<td>Customer Profiling, Mapping, Propensity Modelling, Smarter Targeting, Outlet Reporting</td>
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<td>Retention</td>
<td>Segmentation, Churn Modelling, Cross-Sell Modelling,</td>
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<td>Product cross-sell, up-sell (SKU data)</td>
<td>BEST – Buyer Evaluation &amp; Selection Tool</td>
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<td>Cross-Sell Modelling, Up-Sell Modelling</td>
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<td>Improve operational efficiency</td>
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<td>Outlet Review/Profile/Optimisation</td>
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<td>Dominant Spend Mapping</td>
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<td>Mapping</td>
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<td>Letterbox Optimisation</td>
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<td>Analytics Partnership</td>
<td>FSAP (Full Service Analytical Partner)</td>
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<td>Key Performance Indicators</td>
<td>Reporting, bespoke and automated through Loyalty Centre</td>
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</tbody>
</table>
Final Prepare – SVC 1.0

Data Warehouse

- Rewards
- Cardholders
- Transactions
- Census
- Account
- Scores
- SKU Transactions

Final Prepare

Analysis Output

- Profiles
- Campaigns
- Models
- Mapping
- Reporting
The Present
History of data and analytics

Over time....

• Data
  • Bigger data, coming from various systems, more timely

• Systems
  • Operational systems
  • More storage required
  • Relational databases
  • Computing power increased

• Analytics
  • Applying stats to business, banks, retail, telecommunications, etc...
  • Same statistical principles applied, but now on hormones with software
  • Sample size no longer an issue.
Analytical Capabilities

Counts -- Frequencies
Simple statistics - means, sums, variance
Reports - Counts, stats, and changes over time
Profiles – ttest and chisq comparisons
Visualisation – Graphs, plots
Mapping – customer, outlet locations
Analysis -- what is important
Cluster, Segmentation - factor analysis, princomp, etc...
Models – Logistic, GLM, NN, etc...
Optimisation – Marketing Optimisation
Simulation – System Dynamics, Microsimulation
Forecasting -- macro economics
Knowledge Management -- Nuggets of what we know
Dimensions of Data

- Account: customer account information
- Demographics: age, gender, income
- Geographic: where you live
- Account Behaviour: payment and redemption
- Transactions: spend at our partners (total $, when)
- Campaign Activity: what you were sent, response
- Lifestyle: in depth lifestyle questions
- SKU Transactions: items in your basket
- Online activity: the Fly Buys website
- Mobile activity: Fly Buys activity, where located
- Social activity: all website activity
Power of Data and Analytics combined

FINAL PREPARE – SVC 1.0

Knowledge Management
Recommendation Engine
Forecasting
Simulation
Optimisation
Cluster, Segmentation
Models
Analysis
Mapping
Visualisation
Profiles
Reports
Simple statistics
Counts

Analytical Services to Date

Account
Demographics
Geographic
Account Behaviour
Transactions
Campaign Activity
Lifestyle
SKU Transactions
Online activity

CUSTOMER INTELLIGENCE • MARKETING SERVICES • LOYALTY PROGRAMMES
The Future
Where the world is heading

- Digital data will continue to grow faster than traditional data
- Digital representation of all our transactions and activity
- Retail environment craves more info to keep up with competition

- And our customers expect us to use it instantly
The Future: Big Data

- Sheer magnitude of data captured by digital world:
  - Web
  - Social
  - Free form text
  - Retail Transactions
  - Mobile device activity
  - Software logs
- Cannot be managed by traditional data management tools
- Unstructured to a large degree
- Data is distributed, so difficult to perform traditional queries for analysis. Need new analysis tools to work in this environment.
- Applications and needs are for real time.
Big Data at Loyalty

• Last 24 months we have put a new web-server called Harry.
  • Postgres System
  • Captures web activity
  • Integrates with Service Centre.

• Plans are for Harry expand to incorporate
  • Core Fly Buys rewards, transactions, and points processing
  • Smart phone app behaviour
  • Real time recommendations

Big Data is blowing out our Data and Analytics Matrix.....
Blowing out the Matrix

FINAL PREPARE – SVC 1.0

Analytical Services to continue to expand

- Real time maps
- Visual Analytics
- Real time reporting
- Recommendation Engine
- Forecasting
- Simulation
- Optimisation
- Cluster, Segmentation
- Models
- Analysis
- Mapping
- Visualisation
- Profiles
- Reports
- Simple statistics
- Counts

- Account
- Demographics
- Geographic
- Account Behaviour
- Transactions
- Campaign Activity
- Lifestyle
- SKU Transactions
- Online activity
- Mobile activity
- Social activity
- Location
- Weather data
Implications for Analytics

• Some data and models are old style: static, historical looking.
  • One model or segmentation applied across all customers (Final Prepare)
  • Still very important to have these.

• More and more models using data based on current activity.

• Examples
  • Real time decisions are rule-based and trigger from observed activity.

• Recommendation engines customise items for every individual
  • Recommendation based on product preference model down to the person.
Going from Unstructured....
... to Structured data

• Modeling and analysis still requires that data to have a structure.

• Find and define your associations. Applies to:
  • Text mining
  • Web logs activity
  • Smart phone behaviour
  • Consumer behaviour.

• New analytical tools need to view, query, model, and score new data structures in real time.
Recommendation Engine

• Combine big historical string with new information as it comes in....

• Update weights

• Output recommendations

Slow moving models and characteristics (FINAL PREPARE)

Fast moving new data (Hadoop, Postgres, e.g.)
iPhone App Recommendations

Vincent Morder
MY POINTS BALANCE
919

Liquorland

Jagermeister Rap... $14.99
Offer valid from 10/02/2014 to 23/02/2014

Crabbie’s Alcohol... 6 for $36.00
Offer valid from 10/02/2014 to 23/02/2014

Aquila Sparkling ... $8.99
Offer valid from 10/02/2014 to 23/02/2014

Gunn Estate Whi... 2 for $20.00
Offer valid from 10/02/2014 to 23/02/2014

Herringbone Hill... $8.99
Offer valid from 10/02/2014 to 23/02/2014

Shingle Peak Cha... $10.99
Offer valid from 10/02/2014 to 23/02/2014

Montana Classics... $9.99
Offer valid from 10/02/2014 to 23/02/2014

Lindauer Brut 75... $10.99
Offer valid from 10/02/2014 to 23/02/2014
Visual Analytics
What we are SEEING so far with VA

- Still testing it out in The Lab.

- Organisational alignment:
  - Selling new customer engagement scores internally
  - Single source of truth

- Rapid feedback during development
- Quicker delivery of reports
- Sets the data free

- Sets up data for others to explore from their perspective.
WHO IS OUR CUSTOMER
AND WHAT DO THEY DO?

John David
Peter Michael
Smith Wilson
Brown Taylor
Margaret
Williams

Most likely to shop at these hours:

4:00 PM
11:00 AM
12 Noon
5:00 PM
3:00 PM

Most likely to shop at:

Average age: 50
Born on: October 10
Average points balance: 394 pts
Length of membership: 10 yrs

Average spend:

$20 (daily spend)
$7,500 (yearly spend)

FlyBuys

New World $20 Gift Card
Domestic Flight Reward

New World $50 Gift Card
New World $75 Gift Card
Product add-on seat & bag

Most likely to redeem:

*Based on unique redemption events in 2018. **For 2013 (excluding Airpoints conversions)
Maps Available Online
SKU Reports to Key Partners and Suppliers

Category Reporting Dashboard

Analytical period ending: 12 January 2014

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<th>Sales</th>
<th>Uplift</th>
<th>Retailer Profits</th>
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<th>Funnel of Purchasers</th>
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</table>

Who is buying my products? Indexed vs. the total

Gender Indexed vs. the Category

Age Indexed vs. the Category

Income Indexed vs. the Category

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Microsimulation

• My personal favourite!
• For forecasting
• Still testing it out in The Lab

Steps
  1. Sum up micro data
  2. Macro models to establish levels
  3. Map to micro level to calibrate individual scores
  4. Update micro data
  5. Back to Step 1 again.

Also great for establishing baseline rates.
Words of Wisdom

Digital representation of everything

......and analytics is catching up to fill a huge void

Analytics are absolutely necessary

- brute force is not enough
- must contextualise the data

Expertise to find the right balance between machine learning and human creativity

Only humans can add the story and the context.