Anticipatory Analytics – The Path Toward Future Truth

Paul Ballew
Chief Data & Analytic Officer
30 years into my journey the speed of technological change is still hard to comprehend.

In 1995 there were 16 million internet users daily.
In 2013 there are 2.5 billion internet users daily – enabled by 1.5 billion smart phones (introduced in 2005!)
30 years ago we were in search of the basic tools

- Lack of transactional data – surveys, surveys and more surveys
- Latency issues
- Storage and computing power – remember the days of megabytes or sharing a PC with other team members
- Analytic methods – descriptive at best
- … fragmented views of the truth that lacked foresight in most cases
“Computing power will double about every two years”
30 years later core issues have been addressed, giving rise to others

- Transactional data overwhelming problem formulation, increased reliance on tools vs. methods
- Storage and processing power – our head is now in the clouds
- Analytic capabilities that can allow us to filter, determine casualty and be both prescriptive and proscriptive
- New capabilities to understand the character and quality of data in ways that were never before possible
- … However we are still struggling to get to a complete view, determine causality and to transform our understanding into foresight and action
Private fixed investment – IT equipment & software has become an increasingly important component
Big Data is Not Enough
LET’S SOLVE THIS PROBLEM BY USING THE BIG DATA NONE OF US HAVE THE SLIGHTEST IDEA WHAT TO DO WITH
The Square Kilometer Array Project: Exploring the Universe with the world’s largest radio telescope

A global science project unprecedented in size and scale using radio astronomy to explore deep into the universe. Allows us to receive signals through barriers that light waves cannot penetrate.

Source: www.skatelescope.org
SKA will create an incredible explosion of data…

*Just a lot of noise without an organized approach*

- **Enough fiber optics to wrap two times around Earth!**
- **A central computer with the processing power of 100M PCs!**
- **Data collected in one day that would take 2M years to playback on an iPod!**
- **Dishes that produce 10 times the global internet traffic!**

Source: www.skatelescope.org
It’s not just about DATA!
Big Data at D&B

192 million
Job postings from over 3 million businesses incorporated into predictive insight data

10 billion
Rows of data stored in the D&B database for the last 18 months alone

5 million
Changes per day processed by D&B’s Intelligence Engine

17 million
Global traditional linkages

65,000
Variables tested for custom analytics

128 million
Purchase transactions representing $210 billion in spend

25 years of bankruptcy coverage

Ethics ratings for 2 million businesses

80 detailed-level trade variables produce proprietary derived attributes

310 elements in risk & marketing archived data

3 billion routable IP addresses

25 million Inquiries on businesses per year

2 million unique websites

178 million public filings in D&B’s Public Records Database

112 million unique supply chains mapped through D&B’s network discovery process

1 billion corporate sub-domains

135 million active businesses globally

4 million OSHA investigations on commercial entities

2.9 million historical deeds

11.6 million foreclosures

11.5 million building permits

25 million Inquiries on businesses per year

Over 20,000 unique data sources feed into the D&B database

Real estate insight on 7 million commercial properties.

3 billion routable IP addresses, 2 million unique websites, and 1 billion corporate sub-domains

192 million job postings from over 3 million businesses incorporated into predictive insight data

10 billion rows of data stored in the D&B database for the last 18 months alone

5 million changes per day processed by D&B’s Intelligence Engine

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Foresight is accomplished by breaking down “big data” into actionable insights.

**BIG DISPARATE SOURCES OF DATA**

- Customer Cross-border Inquiries
- Global Trade Experiences
- Customer Match Inquiries
- Call Center Activity
- Customer Portfolio Monitoring
- Other Proprietary Sources
- Third Party Exchange
- WorldBase Updates
- Intelligence Engine Traffic

**SIGNAL EXTRACTION**

**ADVANCED ANALYTICS**

**MATERIAL CHANGE & PREDICTIVE MODEL GAINS**

**QUALITY ENHANCEMENTS**
Analytic solutions offering greater transparency, precision, and foresight into future behavior can help you optimize your interactions globally.
What if there were no segmentation tools to help you manage risk and opportunities?

Where would you focus?

Accounts would turn ‘bad’ seemingly at random.

Treat every account the same?
Using firmographics you’ll find some bads but still largely a random walks

No account segmentation + Firmographics

Suppress,

Narrowed universe, but still too large for effective decision making
The addition of predictive insights provides the ability to segment and target with increasing levels of precision.

<table>
<thead>
<tr>
<th>No account segmentation</th>
<th>+ Firmographics</th>
<th>+ AR/Trade and Paydex</th>
<th>+ Standard Risk Score</th>
<th>+ Composite Risk Score</th>
</tr>
</thead>
</table>

- **Bad account**
- **Good account**

Take action
Combining different analytic lens provides a powerful, holistic view to help you target more effectively in a dynamic environment

<table>
<thead>
<tr>
<th>Segment</th>
<th>Summary</th>
<th>Marketing Action</th>
<th>Viability</th>
<th>Total Loss</th>
<th>Delinquency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It’s All Good</td>
<td>Promote - solid acquisition targets</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimal financial considerations</td>
<td>Good</td>
<td>Avg</td>
<td>Good</td>
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<td></td>
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<td>Avg</td>
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<td>Avg</td>
<td>Avg</td>
<td>Avg</td>
</tr>
<tr>
<td>2</td>
<td>Cash is Not King</td>
<td>Viable, just slow to pay</td>
<td>Good</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May need special finance offer</td>
<td>Good</td>
<td>Avg</td>
<td>Bad</td>
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<td></td>
<td></td>
<td>Avg</td>
<td>Bad</td>
<td>Bad</td>
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<td></td>
<td></td>
<td></td>
<td>Bad</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Here Today…</td>
<td>Promote higher margin offers</td>
<td>Bad</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lifetime value may be small</td>
<td>Bad</td>
<td>Avg</td>
<td>Avg</td>
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<td></td>
<td></td>
<td>Bad</td>
<td>Avg</td>
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<td>Bad</td>
<td>Good</td>
<td>Avg</td>
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<td></td>
<td></td>
<td>Bad</td>
<td>Avg</td>
<td>Avg</td>
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<tr>
<td>4</td>
<td>Identity Crisis</td>
<td>Proceed with caution</td>
<td>Good</td>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responders may never pay you</td>
<td>Good</td>
<td>Bad</td>
<td>Good</td>
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<td></td>
<td>Avg</td>
<td>Good</td>
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<td>Bad</td>
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<td>Good</td>
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<td>Bad</td>
<td>Bad</td>
<td>Avg</td>
</tr>
<tr>
<td>5</td>
<td>Danger Danger!</td>
<td>Save your money</td>
<td>Avg</td>
<td>Bad</td>
<td>Bad</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suppress and avoid</td>
<td>Bad</td>
<td>Good</td>
<td>Bad</td>
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<td></td>
<td>Bad</td>
<td>Avg</td>
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<td>Bad</td>
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</tbody>
</table>

GOOD < Average D&B Bad Rates < BAD
Yet is better segmentation sufficient in an era of “Big Data”? We believe the answer is no.

<table>
<thead>
<tr>
<th>Foundational</th>
<th>The full commercial opportunity</th>
<th>D&amp;B Full Universe, Identity Resolution, Linkage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmographic</td>
<td>Prospects that ‘look’ like best customers</td>
<td>SIC, Employees, Multiple-Dimensional Size, Geo, Predictive Proxies</td>
</tr>
<tr>
<td>Strategic</td>
<td>And have right risk-reward balance</td>
<td>Standard Scores</td>
</tr>
<tr>
<td>Strategic</td>
<td>And have greatest estimated spend potential</td>
<td>Custom Expenditure Model</td>
</tr>
<tr>
<td>Strategic</td>
<td>And have greatest potential for future growth</td>
<td>Material Change™</td>
</tr>
<tr>
<td>Strategic</td>
<td>And are most likely to engage you</td>
<td>Custom Response Model</td>
</tr>
<tr>
<td>Advanced</td>
<td>And most likely to engage via specific channel, at specific time, with specific offer</td>
<td>Customer and Lead Management Actions</td>
</tr>
</tbody>
</table>
In order to identify “in motion” customers and prospects we are introducing cutting edge B2B behavioral analytics to anticipate the future needs of customers and prospects.

BEHAVIORAL ANALYTICS BASED ON:

Non-Traditional Data
- Activity Signals
- Behavior Trends
- Event Freq.

AND

- Changes in Traditional Data Sources

Material Change (US)

Intelligent Change Management (Global)

- Provides our clients with business intelligence identifying the reasons for changes to a company’s firm-o-graphic information.
- ICM solution will assist our customers by:
  - Alerting them to change *(see it coming)*
  - Identifying change *(understand the type of change that has taken place)*
  - Managing change *(integrate account information dynamically)*
- ICM creates possibility of tracking changes around business growth or decline, address changes, business restructuring, etc.
This goal is achieved by building a comprehensive approach to segmentation (who), actionable insights (what) and a closed loop process (how)
Thank you!