Data Mining & Advanced Analytics
Expansiendo el alcance de sus modelos predictivos

Mariano Urman
Sales Engineering Manager
Current Situation
Users of Advanced Analytics

- Two types of users:
  - Builders of analytical models
  - Users of analytical models
- In an enterprise, there tends to be just a handful of builders
- In theory, there should be many, many more users
Model Deployment Challenges

• How do you get a model into the hands of the person who will be using it?

• How do you ensure the data used to score the model is consistent with the data used to build that model?
  o Is the data the same?
  o Is consistency automatically enforced?

• Models evolve over time – how can the model be updated without causing a lot of re-work?

Answer: Combine Analytics and Business Intelligence
MicroStrategy Data Mining Vision
Data Mining Services Vision

Leverage and Extend the BI Infrastructure

Deploy Advanced Analytics to Business Users

Relevant, Proactive & Provide a Competitive Edge

Leverage and Extend the BI Infrastructure

“50-75% of data mining is preparing a good dataset”

Enterprises using MicroStrategy have business rules & definitions that can be easily leveraged for Advanced Analysis. Users can focus on analysis, rather than collecting, integrating and modeling data from disparate systems.

Deploy Advanced Analytics to Business Users

Provide deep, rich analytics that hide the complexity of the underlying statistics. Users don’t have adapt to new applications or interfaces, the application delivers sophisticated results to the touch points already used by MicroStrategy users: Web, Dashboards, Excel, PowerPoint, Alerts, Mobile, etc.

Relevant, Proactive & Provide a Competitive Edge

Organizations gain a competitive advantage when they can increase the sophistication of their applications to go beyond basic historical reporting to deliver strategic proactive insight. Specifically including predictive and model driven metrics, as well as predictive analytic alerts.
Analytical Competitors

• Sports:
  o The A’s & Moneyball → MLB → Soccer, NFL, … → Everywhere
• Politics:
  o Voter Vault & 2004 → UK Parliament, Dems, … → Everyone
• Financial Services:
  o Fraud Detection → Credit Targeting, Churn, … → Must Have
• Pharmaceuticals:
  o Prescriptions → Who → Who → Why, … → Requirement
• Entertainment:
  o Motion Pictures → DVDs → Netflix, Gaming, … → Prerequisite
• In Every Industry:
  o Healthcare, Pharma, Retailers, Shipping, Telco, Travel, …

Key Challenge: Most companies have the data; It’s what to do with it!
Advanced Analytics

• Forecasting:
  o Sales, Costs, Profits, Inventory,…

• Classification:
  o Churn, Campaign management, Risk management…

• Association:
  o Market Basket Analysis,…

• Clustering:
  o Customer Segmentation, Product Segmentation,…
Combining Analytics & Business Intelligence
The Full Spectrum of Business Analytics in One Seamlessly Integrated Platform

**ANALYZE**
- Predictive Analytics
- OLAP Analysis
- Data Discovery

**MONITOR**
- Enterprise Reports
- Dashboards

**ACT**
- Alerts
- Transactions
“Building” and “Scoring”: How Data Mining Can Be Integrated Into BI Applications

- “Building” a predictive model is often an iterative process that requires knowledge of mining algorithms.
- “Scoring” is the process of applying the model to new data.
- All business users can take advantage of these scores.
  - Predictive analytics can be presented just like descriptive analytics.
  - Scorecards, Dashboards, Personalized, Slice-and-Dice → BI.
  - PhD is not required!
The Different Ways to Perform Scoring

• Three Approaches:
  1. Data Mining Tool does the scoring
  2. Database does the scoring
  3. BI does the scoring

MicroStrategy is the only BI Vendor to support them all!
Example: Scorecard combining descriptive & predictive

Customer Scorecard for Jackson Frazier

- **Churn Prediction**: Predicted to Churn
  - **Recommended Action**: High Risk: Offer a new high-end phone and 500 additional minutes
- **Churn Propensity**: 95.92%
- **Remaining Contract Value**: $9,589
- **Revenue Risk**: $9,197.22

- **Status**
  - High Risk: > $5,000
  - Med Risk: $3,000 - $5,000
  - Low Risk: $1,000 - $3,000
  - No Risk: < $1,000

- **Customer Revenue Details**
  - Monthly Fees: $699
  - Monthly Profit: $599
  - Lifetime Value: $394
  - Net Present Value: $394

- **Contract/Usage Details**
  - Active Months: 8 months
  - Current Months: 8 months
  - Remaining Months: 0 months
  - Renewals: 0
  - Avg Min per Month: 9,114 minutes
  - Problematic Calls: 11

- **Customer Demographics**
  - Address: 2060 N Center
  - Hawthorne, California 90250
  - E-mail: jfrazier91@free.edu
  - Household Count: 6
  - Income Bracket: >100K
  - Marital Status: Single
  - Education: Graduate
  - Gender: Male

**Revenue Risk Indicator**
- Off-Peak Minutes: 38%
- Peak Minutes: 64%

Jackson Frazier has a Revenue Risk of $9,197.22 and a Remaining Contract Value of $9,589.
Example: Scorecard combining descriptive & predictive

Customer Scorecard for Dargie Branson

- **Churn Prediction**: Medium Risk: Offer 300 additional minutes and free text messaging
- **Churn Propensity**: 33.33%
- **Remaining Contract Value**: $3,601
- **Revenue Risk**: $3,001.16

**Revenue Risk Indicator**

- $5,000
- $3,000
- $1,000
- $0

**Status**

- **High Risk**: > $5,000
- **Median Risk**: $3,000 - $5,000
- **Low Risk**: $1,000 - $3,000
- **No Risk**: < $1,000

**Revenue Risk Range**

- **Monthly Fees**: $500
- **Monthly Profit**: $400
- **Lifetime Value**: $1,602
- **Net Present Value**: $1,602

**Contract/Usage Details**

- **Active Months**: 15 months
- **Current Months**: 15 months
- **Remaining Months**: 0 months
- **Renewals**: 0
- **Avg Min per Month**: 7,521 minutes
- **Problematic Calls**: 0

**Customer Demographics**

- **Address**: 1513 Macintosh Way, Danard, California 95035
- **E-mail**: dbranson26@univ.demo
- **Household Count**: 5
- **Income Bracket**: 91-100K
- **Marital Status**: Married
- **Education**: Graduate
- **Gender**: Female

Dargie Branson has a Revenue Risk of $3,001.16 and a Remaining Contract Value of $3,601.
Example: Scorecard combining descriptive & predictive

### Customer Scorecard for Erich Catalano

<table>
<thead>
<tr>
<th>Churn Prediction</th>
<th>Predicted to Churn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended Action</td>
<td>No Risk: Do not offer this customer an additional promotion</td>
</tr>
<tr>
<td>Churn Propensity</td>
<td>98.61%</td>
</tr>
<tr>
<td>Remaining Contract Value</td>
<td>$1,014</td>
</tr>
<tr>
<td>Revenue Risk</td>
<td>$999.65</td>
</tr>
</tbody>
</table>

### Revenue Risk Indicator

- Off-Peak Minutes: 29%
- Peak Minutes: 71%

Erich Catalano has a Revenue Risk of $999.65 and a Remaining Contract Value of $1,014.

### Revenue Risk Range

<table>
<thead>
<tr>
<th>Status</th>
<th>Revenue Risk Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk</td>
<td>&gt; $5,000</td>
</tr>
<tr>
<td>Med Risk</td>
<td>$3,000 - $5,000</td>
</tr>
<tr>
<td>Low Risk</td>
<td>$1,000 - $3,000</td>
</tr>
<tr>
<td>No Risk</td>
<td>&lt; $1,000</td>
</tr>
</tbody>
</table>

### Customer Revenue Details

- Monthly Fees: $245
- Monthly Profit: $145
- Lifetime Value: ($2,362)
- Not Present Value: ($1,938)

### Contract/Usage Details

- Active Months: 41 months
- Current Months: 17 months
- Remaining Months: 24 months
- Renewals: 1
- Avg Min per Month: 2,199 minutes
- Problematic Calls: 3

### Customer Demographics

- Address: 2243 Grandview Ave, Oxford, Ohio 45056
- E-mail: ecatalano17@aol.com
- Household Count: 5
- Income Bracket: 41-50K
- Marital Status: Married
- Education: High School
- Gender: Male
Advanced + Agile Analytics

Experiment with insightful visualizations to find patterns, trends, and relationships
Demo
Summary
Summary

• Turn your enterprise data into a competitive advantage
• End users can simultaneously use descriptive and predictive analysis alongside traditional BI capabilities
  o Prompting
  o Slice and Dice
  o Thresholds and Alerts
  o New Metrics based on predictive metrics
  o Deliver content with predictive metrics via e-mail, mobile, etc..
  o Scorecards and Dashboards with predictive metrics
• Be an Analytical Competitor by using BI to Out-Think & Out-Execute the rest of your industry
Gracias!
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