Credit Scoring In The Leasing Industry

ELA Credit & Collection Management Conference

June 9 – 11, 2002

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Discussion points

- Leasing Overview
- Scoring 101
- Application of Scoring in the Leasing Industry
- ROI of Scoring
- Q&A
Leasing Industry & Scoring
Leasing Industry

The question is NOT “Do I use scoring?” but “Which score should I use?”

- Quick, cost effective decisions are critical
- Competes with banks, specifically the credit card industry, for small businesses working capital needs
- Scoring provides a cost effective risk management tool
- Custom and Generic scores are prevalent
  - Custom for high volume operations
  - Generic for Bank / Middle Market Lessors and Brokers
    - D&B Leasing Industry Model
    - FICO Liquid Credit
    - Experian BIS – NEW Lease Decision Score
    - PayNet Lease Score
Small Ticket Leasing

Case Study

Customer / Vendor / Dealer / Broker Requirements

1) Say Yes . . . ALWAYS

2) Tell Me . . . QUICKLY

3) Fund Me . . . NOW

CUSTOMERS DEMAND MORE APPROVALS . . . FASTER
Score Plus Leasing Case Study

A Knowledge-Based Credit Decision System

Score Plus = Scoring Models + Validated Policy

Credit Knockout Credit Knockout
Analyst Review

All Applicants
Credit Score
Policy Rules

Auto Approve

Faster & Better Decisions

F

D

F

Auto Decline

Analyst Review

A,B,C
“Through The Door” Applications

Distribution Of Applications

Approved And Booked Deals

Distribution Of Approved Deals

Use of Score Plus To Help Risk Rate The Portfolio Will Improve The Ability To Manage New & Existing Customers
Scoring 101
Statistical Model Development

Pictorial Overview

Scoring Utilizes Past Experiences To Statistically Predict Future Events

Historical Data

Statistical Analyses

Predict Future Events

Statistical models provide a superior risk tool by:
1. Picking the most significant predictors of risk from 100’s of possibilities.
2. Determining the relevant importance of each predictive variable (aka Weight).
New Application Models

Assess the creditworthiness of new lease applicants

- **Credit Bureau Data: Commercial & Consumer**
  - Dun & Bradstreet & Experian BIS
    - Trade Data, Public Records, Business Tenure
  - Consumer Bureau For Business Principals
    - Small Office / Home Office and Start-ups

- **Application Data**
  - Unique ID Information for Matching
    - Name, Street Address, City, State, ZIP, Telephone
  - Information Specific To Deal
    - Equipment Type: Office, Computer, Construction,…
    - Channel: Vendor, Broker, Direct, Private Label,…
    - Deal Size: Micro, Small, MidTicket,…
Statistical Model Development

Types Of Scoring Models

Behavior Models

Monitor the credit risk of existing customers

- New Lease Authorizations
- Dynamic Portfolio Monitoring: Loss Reserves
- Early Stage Collections

Internal Customer Data

- Profile Data
  - Tenure, Equipment Type, Exposures...
- Accounts Receivable Data
  - Payment Detail, Aging, Write-offs....

Bureau Data

- Similar to New Application Model But Significantly Less Important
  - “Hit” Versus “No Hit” Model
Statistical Model Development

Steps In Developing Scoring Models

**Identify Business Objective: The Goal Of The Model**

- **Type Of Model:** “New Accounts … Existing Customers”
- **Data Available:** “What do you need?” … “What do you have?”
- **Behavior to be Predicted:** “What Is A GOOD / BAD Account?”

**Database Design**

- **Specify Timeframes**
- **Pull Data**
- **Develop Model Development Sample**

**Conduct Segmentation Analysis**

- **Maximize Model's Predictive Power**
- **Apriori Versus Statistically Determined**
Statistical Model Development
Steps In Developing Scoring Models

Preliminary Model Development

- Create Data Attributes (100’s)
- Identify Predictive Bi-Variate Candidates (30 - 75)
- Determine Statistically Significant Model Variables (10 – 25)

Holdout Validation And Finalize Model Model

- Development Vs. Holdout Sample. Preferably Forward Sample.

Implementation And Testing

- Programming Of Technical Specifications Into Product System
- Testing Up To 1,000 cases. Production Versus Model Code
## Credit Model Development

### Database Design

<table>
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<th>Time Period</th>
<th>-12</th>
<th>-11</th>
<th>-10</th>
<th>-9</th>
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<th>-3</th>
<th>-2</th>
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</table>

**G:** Account currently in Good standing  
**B:** Account currently in BAD standing.

- **Behavior Models** typically require 24 - 36 months of customer history including a 6 – 12 month Historical Window of A/R past payments.
- **New Account Models** require a minimum of 12 - 24 months and **DO NOT** have a Historical Window since no history exists with the firm.
Segmentation Rationale

Increase Scores Performance By Finding The Optimal Number of Homogeneous Groups To Develop Models
Segment Identifiers

Differences In Customer’s Product
- True Lease vs. Finance Lease

Exploit Differences In Information Content
- Current Payers vs. History of Late Payment

Account For Differences In Behavioral Drivers
- Large vs. Small Firms

Account For Unique Characteristics Of Credit Policy
- Special Or Preferential Treatment for Large Exposures

Exploit External Data When Available
- Bureau Hit vs. No / Thin Hit
Predictiveness Index
Model Screening Effectiveness

Calculating The PBDS PI

Assuming a 10% BAD Rate

A perfect model would screen out 100% of the BADS in the worst 10%

The Predictiveness Index measures the Models “perfect” percentage

\[ P = (\text{Area X} + \text{Area Y}) \]

is the capture rate from perfect predictiveness

\[ M = \text{Area Y} \]

is the capture rate of the estimated model

\[ \text{PI} = \frac{M}{P} \]

A PI of 55 suggests that the estimated model captures 55% of the perfect area
Application of Scoring in the Leasing Industry
Statistical Model Development

Methods Of Score Estimation

- Best: Custom Statistical Credit Scores
- Better: Generic or Industry Credit Scores
- Good: Rules Based Systems
New Application Model
Small to Mid Ticket Leasing

Statistical decision tool that measures future credit risk

Generally used for transactions under $100,000

The Goal Is To Effectively Automate The Majority Of Real Time Decisions At Time Of Application

Uses application, credit bureau

Accurately Speeds The New Credit Decision Process
New Application Model
Small Ticket Leasing

Optimizing Data Sources Using Advanced Statistical Methods
Score Classes 1, 2 & 3 are designed to be Low to Moderate Risk, Score Class 4A is High Risk, Score Class 4B Very High Risk and Score Class 5 is Extreme Risk.

* Average Risk is set to 100. A value of 25 represents 1/4 of the average risk, a value of 450 is 4.5 times above the average risk.
Behavior Scoring Models
Multiple Applications To Maximize Profits

**Authorization**
Assesses the risk from expanding a credit relationship with an existing account

- Automation of credit decisions and line management
- Reduces credit costs and increases revenues

**Collection**
Assesses the risk that a delinquent account will become severely delinquent or written off

- Prioritizes early stage collection activities
- Reduces collection costs and lowers delinquency rates

**Recovery**
Evaluates the recovery rate of severely delinquent or written off accounts and can be used for pricing a portfolio

- Rank orders accounts by expected recovery dollars
- Maximizes recovery rates
Leasing Behavior Model

Custom Versus Generic Scores

For the 30% of Highest Risk customers, the custom model identifies 868 additional BADs.

Custom Behavior Score:
- KS = 0.38
- PI = 51.36

Commercial Score:
- KS = 0.15
- PI = 19.32
Risk Grades determine Approved / Decline decision. A, B, C are Auto Approved up to $75,000 Exposures. D requires further review by an analyst and F’s are Auto Declines.
Return On Investment Using Scoring
### ROI Of Improved Credit Decisions

**Based Upon One Year Of Volume**

<table>
<thead>
<tr>
<th>Risk Grade</th>
<th>Old Approval Rate</th>
<th>New Approval Rate</th>
<th>Incremental Deals</th>
<th>Loss Rate</th>
<th># Losses</th>
<th>$ Loss</th>
<th>Profit</th>
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<tbody>
<tr>
<td>A</td>
<td>98.0%</td>
<td>99.5%</td>
<td>42</td>
<td>0.8%</td>
<td>0</td>
<td>$1,331</td>
<td>$9,979</td>
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<tr>
<td>B</td>
<td>95.0%</td>
<td>99.0%</td>
<td>764</td>
<td>2.5%</td>
<td>19</td>
<td>$76,356</td>
<td>$183,254</td>
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<tr>
<td>C</td>
<td>92.5%</td>
<td>97.5%</td>
<td>1,225</td>
<td>5.5%</td>
<td>67</td>
<td>$269,577</td>
<td>$294,084</td>
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<tr>
<td>D</td>
<td>75.0%</td>
<td>70.0%</td>
<td>(750)</td>
<td>15.2%</td>
<td>(114)</td>
<td>$(455,818)</td>
<td>$(179,928)</td>
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<tr>
<td>F</td>
<td>20.0%</td>
<td>0.0%</td>
<td>(328)</td>
<td>32.9%</td>
<td>(108)</td>
<td>$(431,122)</td>
<td>$(78,624)</td>
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<tr>
<td>Total</td>
<td>87.4%</td>
<td>89.0%</td>
<td>953</td>
<td>(135)</td>
<td>$(539,676)</td>
<td>$228,766</td>
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**Improved decisions using Credit Ratings will allow you to approve better credits (A, B & C) and avoid unprofitable credits (D & F).**

**Loss Avoidance:** Avoiding losses from D & F credits.

135 additional net losses avoided at $4,000 per loss. **Total Loss Savings = $539,676.**

**Approve More Deals:** Approving more A, B & C credits.

953 additional deals booked. **Incremental Profit = $228,766**

**TOTAL ANNUAL PROFIT INCREASE = ($539,676 + 228,766) = $768,442**
Thank you for your time and attention
Questions / Comments?