CREATIVE
BUSINESS
DECISIONS

CBD INTRODUCTION

SMARTER MODELS, SMARTER DECISIONS

BY
CREATIVE BUSINESS DECISIONS

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About CBD

Creative Business Decisions is a decision management solutions company, headquartered in Princeton, New Jersey.

We help our clients:

- ***Increase their customer base without increasing risk.***
- ***Reduce default rates and save on credit losses.***
- ***Help Automate and provide consistent decisions in lending.***
- ***Measurably lower the cost of collections.***
- ***Increase the lifetime value of customer relationships.***

Over the last 30+ years, we have helped hundreds of large and small companies around the world, to optimize returns on their credit portfolios through the optimal use of our custom built empirical, generic, judgmental and behavioral scoring models.

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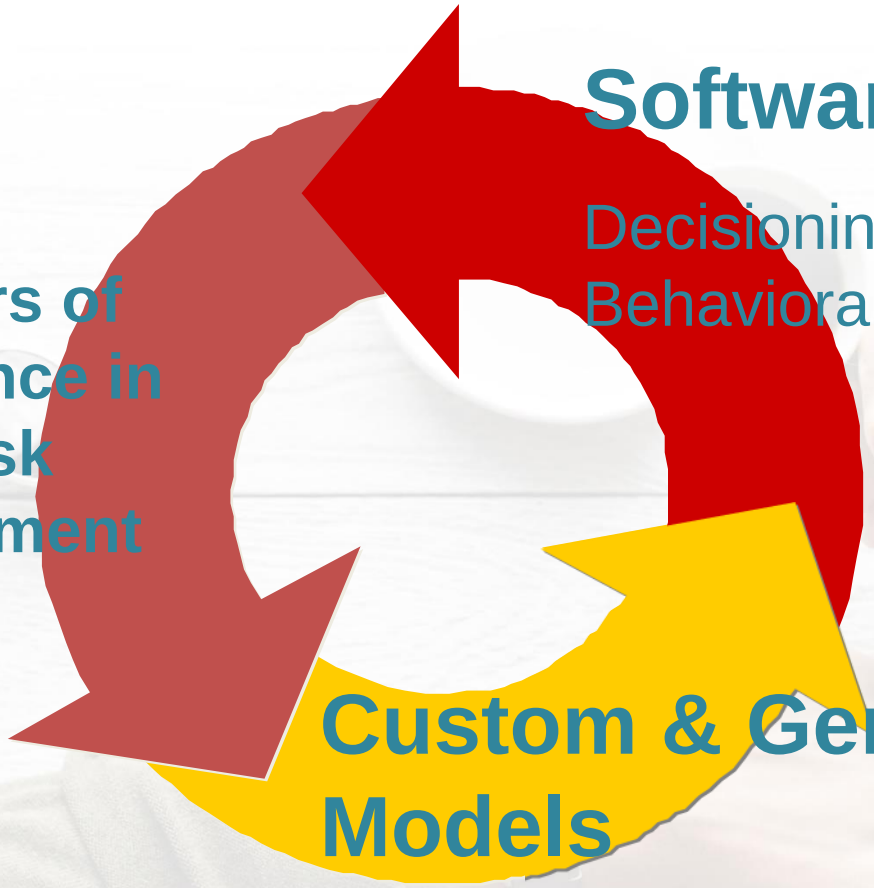
The CBD Advantage



Software

Decisioning &
Behavioral Solutions

30+ Years of Experience in credit risk management

Custom & Generic Models

Advanced Analytics – Artificial Intelligence

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Customer Segments

- Auto finance – Prime, Non-Prime, Sub-Prime, BHPH
- Financial institutions – banks, credit unions, mortgage and finance companies
- Retail lenders – Furniture stores, jewelry stores, auto dealers, leasing companies
- Medical Lending companies
- Utility and telecom companies – telephone, cellular, cable, electric and gas
- Credit card issuers
- Insurance companies
- Internet based retailers of high-end products.

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Generic and Custom Scorecards

- Well tested Generic scorecards for Furniture, Medical, Auto and other verticals
- Scorecards developed using a very large data sample of sub-prime and near prime applicants from various regions
- Large amount of Data available for testing of generic scorecards based on region
- Custom Scorecards developed using client's data and history
- Artificial Intelligence applied to enhance various Scorecards

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Advantages of Credit Scoring

- Enhanced Effectiveness of Credit Decisions
- Lower Cost of Processing
- Consistency of Lending Decisions
- **Automate Lending decisions**
- Monitoring & Tracking for Greater Management Control
- Marketing Data for Cross Selling of Additional Products
- Compliance with Federal & State Credit Regulations Easily Demonstrated

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Select Customers

C&F Financial Corporation
Focused on You

AMERICAN EXPRESS

Pelican AutoFinance LLC

citigroup

YAMAHA

Fleet

TFC TIDEWATER FINANCE COMPANY

verizon

CARE CREDIT

EDS

THE BANK OF NEW YORK

Fidelity BANK
that's how.

MARKONE FINANCIAL

Garfinckel's

Royal Furniture

SUMMIT AUTO FINANCE

Ivan Smith FURNITURE
Saving you more on the look you want.

HSBC The world's local bank

AT&T

KITCH ACCEPTANCE CORP.

verizon wireless

ZALES
THE DIAMOND STORE®

US AUTO CREDIT

Mercedes-Benz

Moody's Investors Service

NATIONWIDE ACCEPTANCE CORP.

usbank
Five Star Service Guaranteed

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Some Benefits attained by clients

PARTIAL LIST:

APEX ; CAR HOP ; CARE PAYMENT ; FREEDOM ACCEPTANCE CORP ; GAFCO ; KITCH ACCEPTANCE ; MARK ONE ; PEARSON PUBLISHING ; YAMAHA AUTO FINANCE ; ROYAL FURNITURE; IVAN SMITH FURNITURE; TEXAS FIRST BANK ; CAPITAL BANK ; AC AUTOPAY; CORNWELL TOOLS, VERIZON, U S AUTO, UNITED AUTO

- Lowered cost of processing using CBD's software. Cornwell Tools, Freedom Acceptance, and Summit Auto are spending substantially less.
- All clients have attained consistency in making Lending Decisions
- Automated lending decisions (Tidewater is doing 100% automated decisions)
- Monitoring & Tracking accomplished for greater management control by most clients
- Compliance with Federal & State Credit Regulations can be easily demonstrated using scorecards

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Score Used For Automating Decision Making

Using Custom scorecard OR Generic-custom scorecard

INDUSTRY SPECIFIC SCORECARDS HAVE BEEN CREATED BY CBD BASED ON A HUGE SAMPLE OF HISTORICAL DATA OBTAINED OVER MANY YEARS. A SCORECARD OF CHOICE CAN BE DEPLOYED ON THE CBD SERVERS, OR IN SOME CASES, A SOFTWARE MODULE AND HANDED OVER TO YOUR PROCESSOR FOR IMPLEMENTATION WITHIN THEIR INFRASTRUCTURE

- A Score can be Used to Make Auto Decisions
- Score Ranges can be Used to Define Pricing Tiers (or programs) Based on Risk
- These Ranges are Picked From a Performance Projection Table that Comes with every Scorecard – Custom or Generic
- This Table Shows the Lending Risk at Each Score

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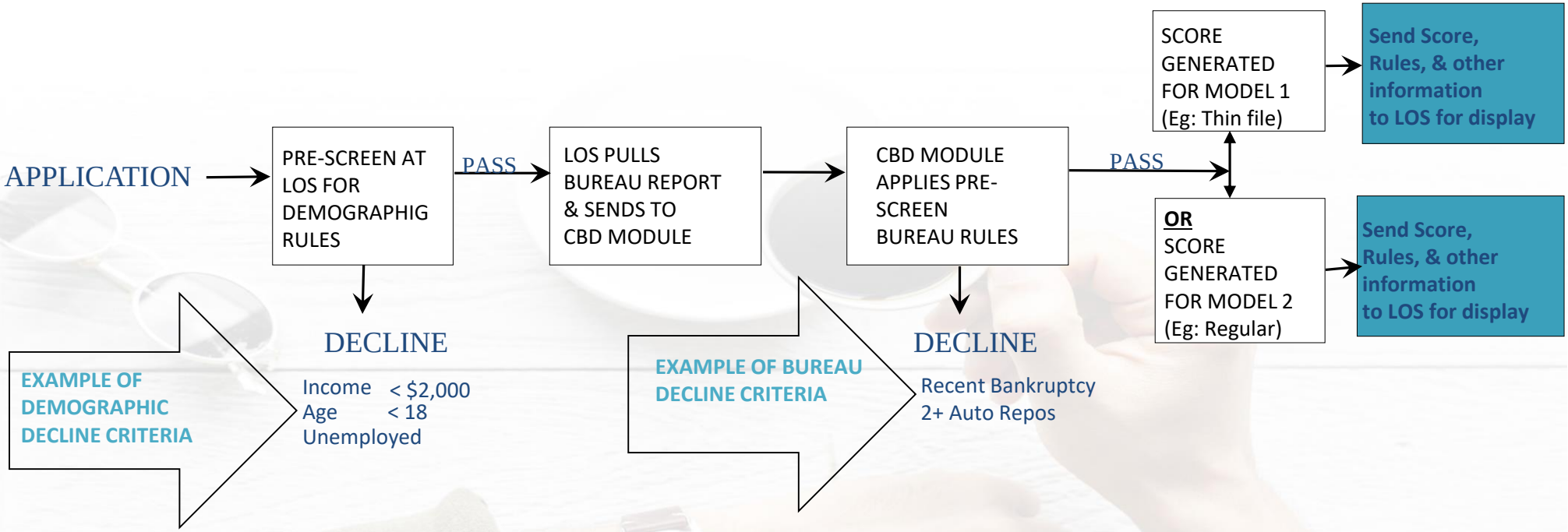
Suggested Flow



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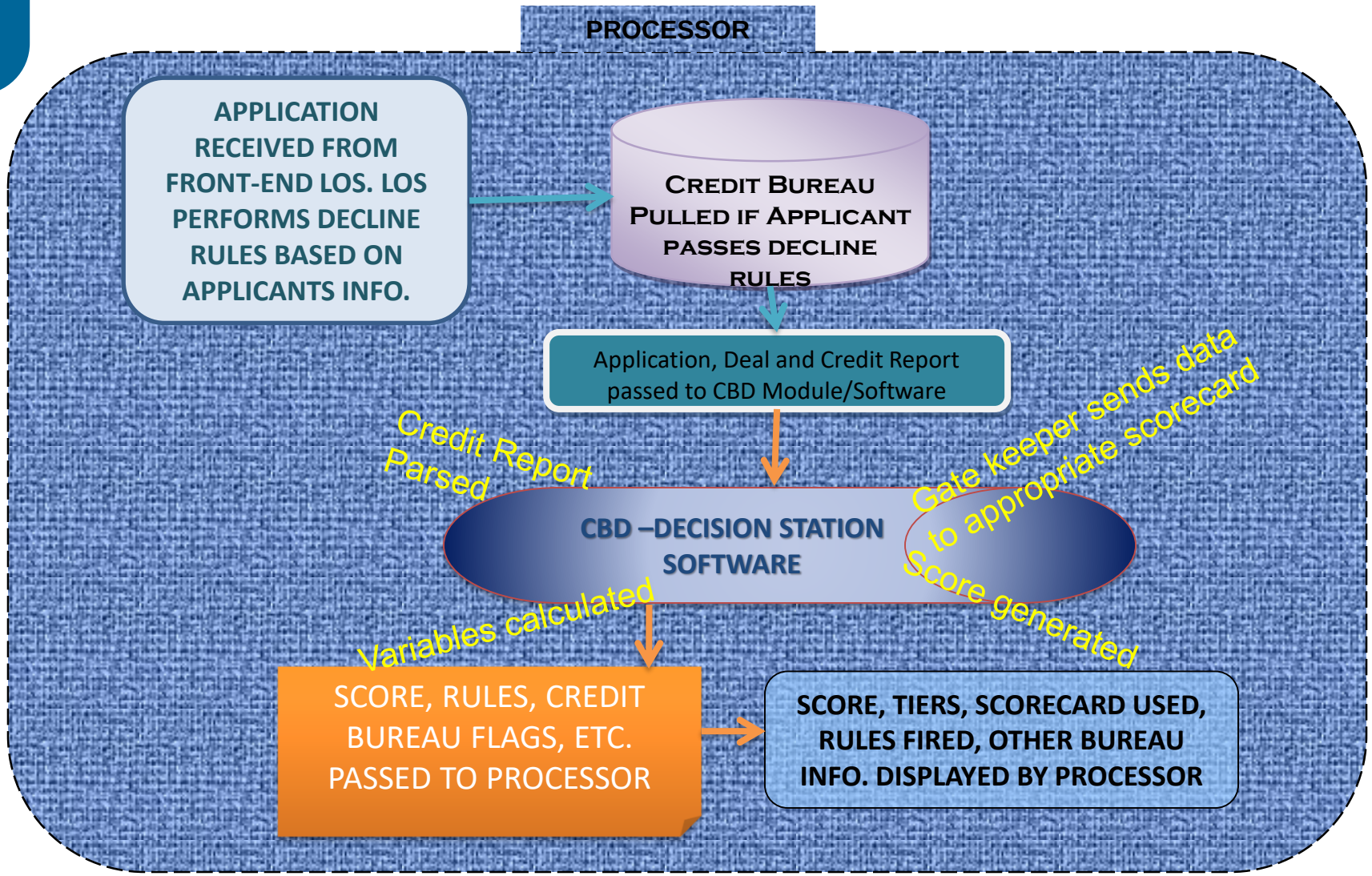
Suggested Flow cont….d



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Example of Rules that can be programmed in the module

Pre Bureau Decline Rules:
1. Age < 18
2. Below minimum Income $x,xxx ($x,xxx joint)
3. Not gainfully employed.

Post Bureau Decline Rules:
1. SSN OR Joint SSN misused
2. No credit bureau report.
3. FICO not available OR FICO SCORE < X
4. CBD SCORE < X
5. More than 6 Inqs. in recent 14 days, Mort and Auto compressed
6. DTI > 65% or Disposable Monthly Income < $x,xxx
7. Disposable Monthly Income < $x,xxx then Review
8. First or second Mortgage 60 DPD
9. Bad pay after Bankruptcy Ch-7 within 3 years
10. Settled for less than full Balance

Policy and Fraud Declines
1. Income > $100,000 and Age < 26
2. Income > $180,000
3. Primary & Joint SSN are the same
4. (primary) SSN does not match bureau
5. Any trade greater than 90 DPD
6. Multiple Auto Repos in X years
7. Ch 7 bankruptcy filed last 90 and not discharged
8. Charge-off greater than $2000 excluding Medical trades

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CREATIVE BUSINESS DECISIONS

SAMPLE OF A PERFORMANCE PROJECTION TABLE (PPT) THAT COMES WITH SCORECARD

Cut-off Score	Accept Rate at Cut-Off	Cumulative Accept Rate	Good/Bad Odds at Cut-off	Cumulative Good/Bad Odds of Accepts	Good/Bad Odds of Declines	Good Rate at Cut-Off	Cumulative Good Rate of Accepts	Cumulative Good Rate of Declines
310	0.50984	0.50984	362.03867	362.03867	6.49589	99.72455	99.72455	86.65936
300	**0.34353**	**0.85336**	**274.37401**	**328.34327**	**6.47068**	**99.63686**	**99.69637**	**86.61433**
290	3.23620	4.08956	174.85315	207.53771	6.23611	99.43134	99.52047	86.18042
280	4.82866	8.91822	123.63985	165.56664	5.88944	99.19769	99.39964	85.48503
270	6.47890	15.39713	87.42658	130.28378	5.43038	98.86912	99.23829	84.44882
260	4.88292	20.28005	61.81993	107.80768	5.09124	98.40815	99.08095	83.58297
250	9.40235	29.68241	43.71329	78.99219	4.44972	97.76353	98.74988	81.65045
240	**6.98096**	**36.66337**	**30.90996**	**64.67746**	**3.98094**	**96.86618**	**98.47741**	**79.92347**
230	8.91635	45.57972	21.85664	50.03311	3.39551	95.62490	98.04049	77.24949
220	10.40736	55.95708	15.45498	37.52357	2.72337	93.92281	97.40419	73.14264
210	7.61169	63.59876	10.92832	30.82409	2.22832	91.61659	96.85773	69.02418
200	**9.24559**	**72.84435**	**7.72749**	**24.00991**	**1.62085**	**88.54195**	**96.00159**	**61.84437**
190	5.85874	78.70309	5.46416	20.29370	1.22353	84.53009	95.30378	55.02654
180	4.37381	83.07690	3.86375	17.45204	0.92928	79.43971	94.58055	48.16722
170	3.49419	86.57108	2.73208	15.21173	0.69258	73.20529	93.83163	40.91853

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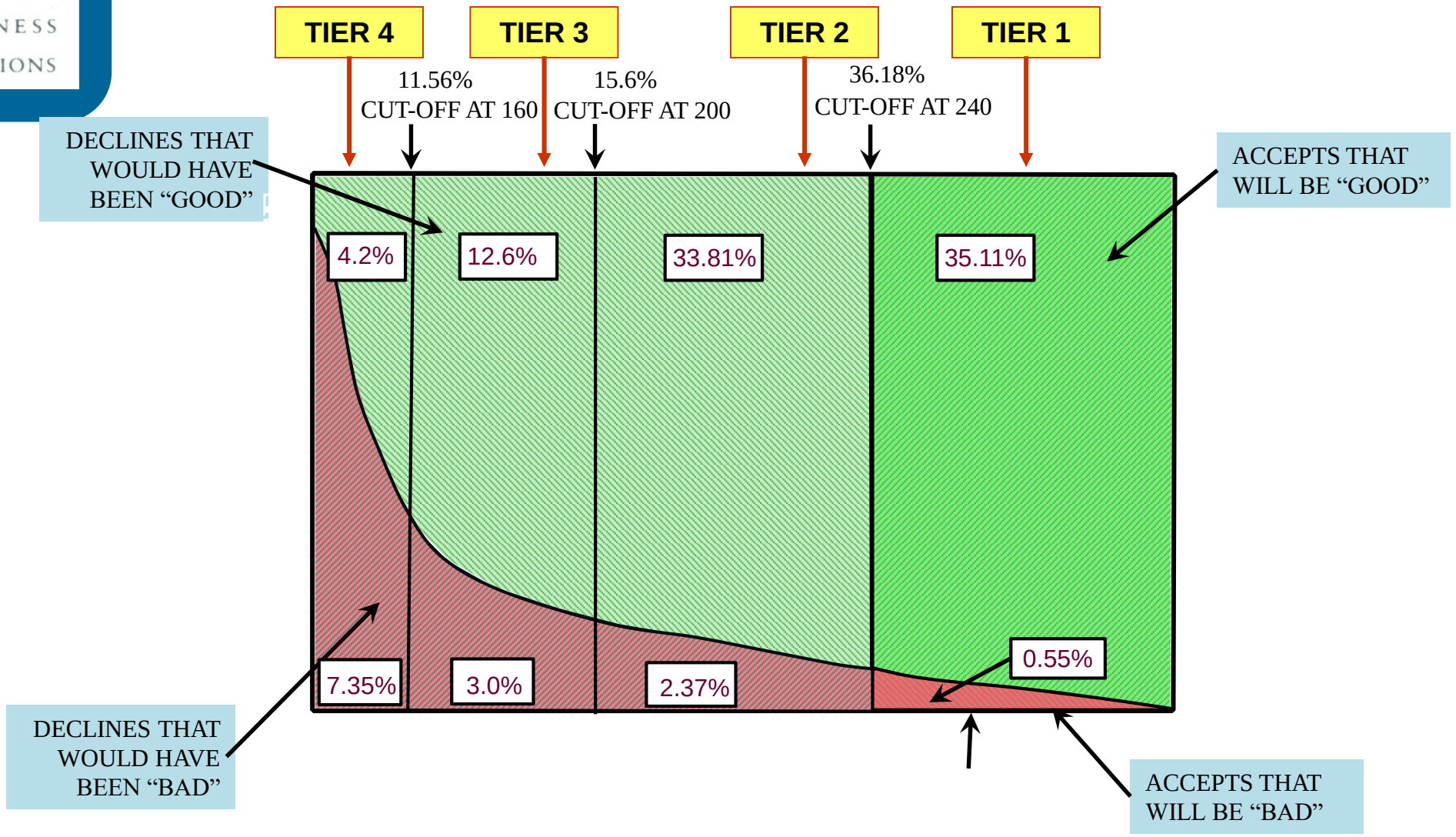
Decision outcome graph base on PPT – Pricing structures



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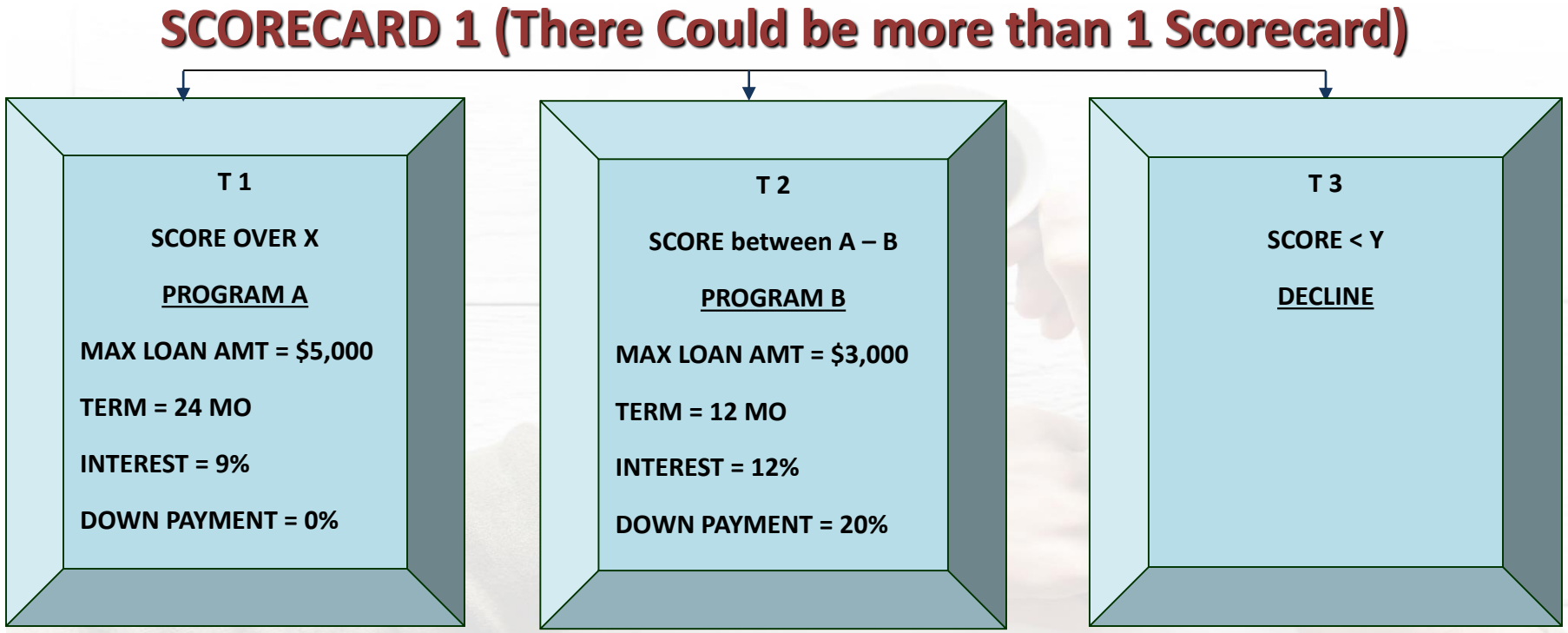
Example of Score rules based on PPT

To be displayed by processor



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Example of Results to be displayed by Processor

SCORECARD – X CBD SCORE – XYZ TIER – PREFERRED	DECISION – ACCEPT/DEC RULE/S FIRED – YES/NO
RULES FIRED	5 – More than X inquiries
MAX LOAN AMT	XYZ
INTEREST RATE	XYZ
TERM	XYZ
DOWN PAYMENT %	XYZ

OTHER ITEMS THAT CAN BE DISPLAYED	
BUREAU MESSAGE	SSN not matching
PRODUCT	XYZ
D T I	XYZ
DISPOSABLE INCOME	XYZ
CLINIC/BRANCH/OFFICE	XYZ

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Monitoring & Recalibration

Monitoring of Scorecard performance is important for Industry Specific Models.

- The actual model must be monitored as to its performance and as to changes in population distributions.
- Results from applying management's credit evaluation criteria must be monitored and, if necessary, these criteria may need modifying

CBD produces the following reports as part of Monitoring exercise…

- Evaluation Scoring Performance Monitoring or Dynamic Delinquency Report
  - This report shows the distribution of accounts by delinquency performance groups and by score range.
- Population Distribution or Population Stability Monitoring Report
  - This report shows the distribution of numbers of accounts by score range, for each model.
- Good-Bad Population or Characteristic Analysis Monitoring Report
  - This report shows the distribution of numbers of “good” and “bad” applicants by score range for each model.

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Monitoring standards

Monitoring standards should be developed to detect shifts in

- DEMOGRAPHIC CHARACTERISTICS OF THE APPLICANT POPULATION
- PERCENT OF APPLICANTS FALLING IN EACH SCORE RANGE
- "BAD" RATE PREDICTIONS

CBD will require application information, raw bureau reports and payment performance information to generate the monitoring reports.

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Re-calibration

Depending upon the Monitoring results, the following may be done:

- **the cut-off scores may need to be adjusted, or**
- **the points assigned to the variables may need to be modified.**

As more experience is gained, the scorecards should to be monitored to determine whether expected delinquency levels are being maintained. This ongoing monitoring will involve analyses using performance information to conduct the following tests:

- **Is the scorecard differentiating creditworthy from un-creditworthy customers at a statistically significant rate?**
- **Is there a shift in the distribution of applicants across the score ranges?**

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Software

- A scorecard can be placed in a software module that can be accessed using multiple methods or technology systems. The module can reside at LOS servers or CBD servers.
- For Auto Lenders, A module can be created for Pricing of deals. The module can be pinged multiple times with changed criteria to get an appropriate decision.
- A basic LOS can be used that will house the scorecards, pull the report and place the applicant in a tier based on the calculated score.

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Partners and Integrations

- T C I – Loan Origination System
- DEFI – Loan Origination System
- GOLD POINT – Loan Origination System (with AR system)
- LAUNCHER – Loan Origination System
- MICROBILT – Alternative Data Provider
- CARLETON – Loan Origination System
- POINT PREDICTIVE – Income Verification and Fraud
- SMART CSC – Loan Origination System

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