

Intellection 360 **an affordable solution for debt collection management**

July 2013



GDS-MODELLICA
RISK MANAGEMENT SOLUTIONS

Intellection360 is a solution that allows to implement debt collection strategies and case management based on lender's data thru the borrower life cycle, by using specific rules, scoring models, strategies and decision flows according to credit type and borrower's profile.

Main Features

CASE CENTER

Collections Workflow - Internal

Collections
Manag.

Execute
manual and
automatic
actions

Skip Tracing

Integration
with Power
dialer

Call Center

3rd Party Collection Workflow

3rd Party
Agencies
Management

3rd Party
Agencies
Assignment

Effectiveness
Metrics

Negotiations

Commission's Management

Forwarding/Approval/W-off

Promises and Refinance Mgmt

STRATEGY

Decision Engine

Segmentation
and actions

Score based
strategies

3rd party
assignment
strategy

Analytics

Behaviour
data

Multiple
scoring models

Reporting

Decision
Intelligence

Jasper Reports
Integration

Dashboard
Metrics in
Case center

Preventive and Early Collections

- Automate the Collection Management Process
 - ◆ Reduction of Manual efforts and other inefficient cost
 - ◆ Increase recoveries by working better in each case
 - ◆ Increase recoveries by managing better the working queues
 - ◆ Increase recoveries by managing automatic actions like sms, letters, IVR emails, credit card blocking, etc
- More effective collections
 - ◆ Combining the best strategies with the collections capacity and the priorities
- Effective control of 3rd party collection agencies
 - ◆ Reduce errors and misunderstanding in the 3rd party assignment
 - ◆ Use decision engine and scorings to assign each case

Process flow

- Design of the required interfaces for the creation of the client database, including import and validation
- Creation of the historical variables and calculation of the “trend indicators”, based on internal and possibly on external data (eg. Credit Bureaux)
- Processing of data thru Decision Engine that will allow the implementation of scoring, rules, criterion and strategies.
- Creation of statistical and MIS reporting.
- Dispatching to client of output containing the recommended decisions at borrower level.

Intellection360 Components

Case Center

Case management

Overall control over Process flows

User management

Case cueing assignment

Decision Engine

Rule Engine for Scoring and Decision

Automates Your Credit Policy Rules

Automates your credit strategies

Decision Intelligence

Reporting package for:

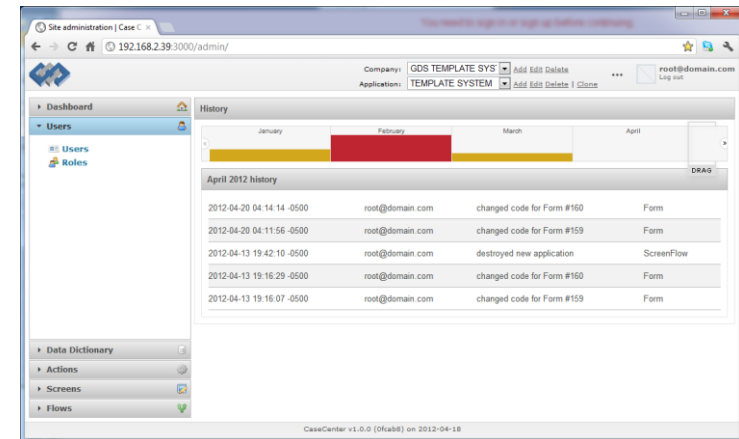
- ✓ Scorecard monitoring
- ✓ Portfolio monitoring



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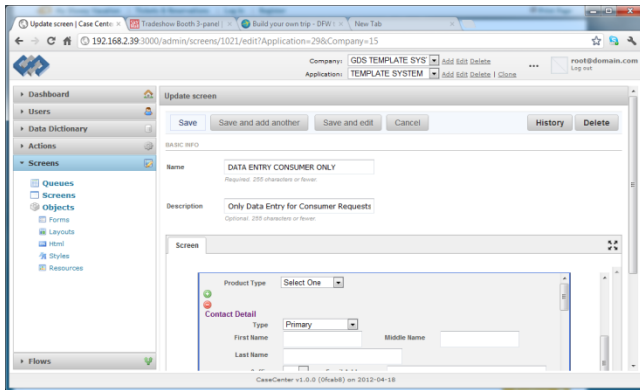
Case Center Overview

- ✓ Multi-user development environment
- ✓ Multi-tenant system
- ✓ Customer administered
- ✓ Flexible and intuitive
- ✓ On-line, 24x7 availability
- ✓ Cloud hosting
- ✓ Used also for credit application processing, customer management or any back office process automation

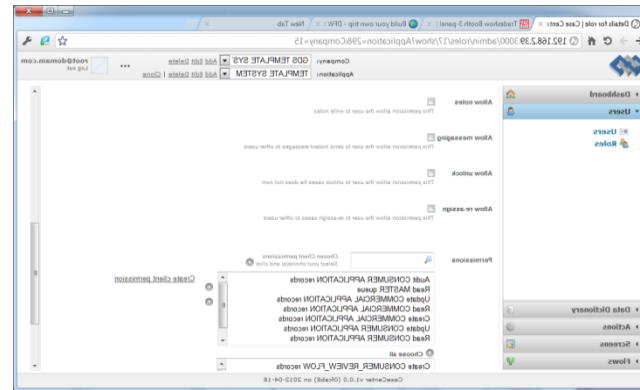


Case Center Administration.

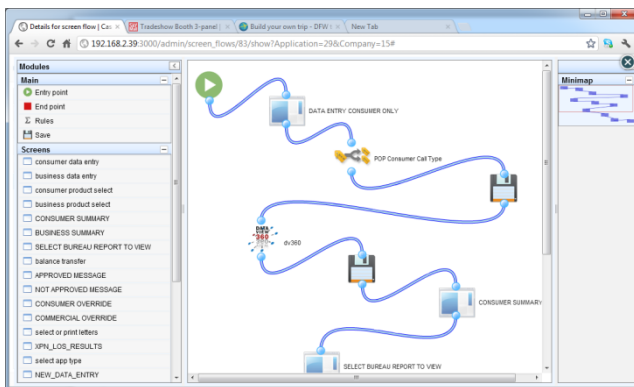
Build screens



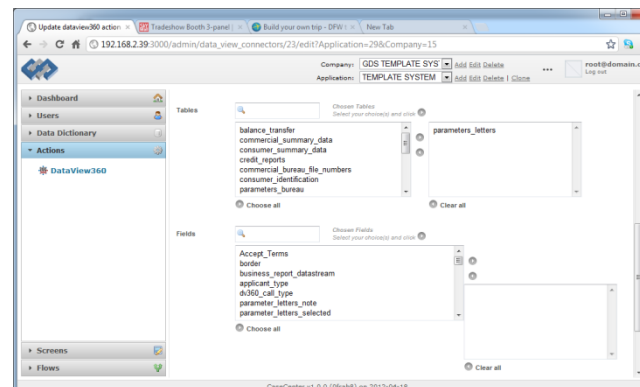
Administer Users and Roles



Drag and drop to create flows



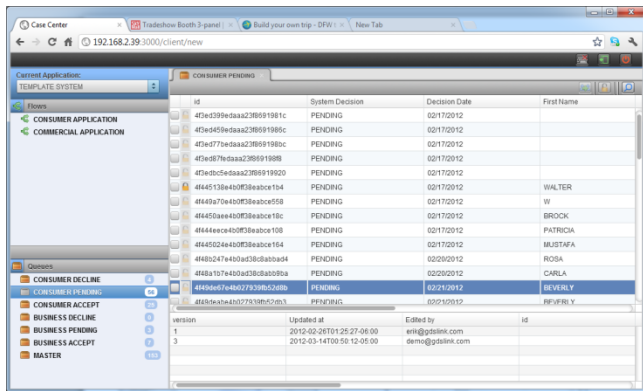
Full integration with Intellection360



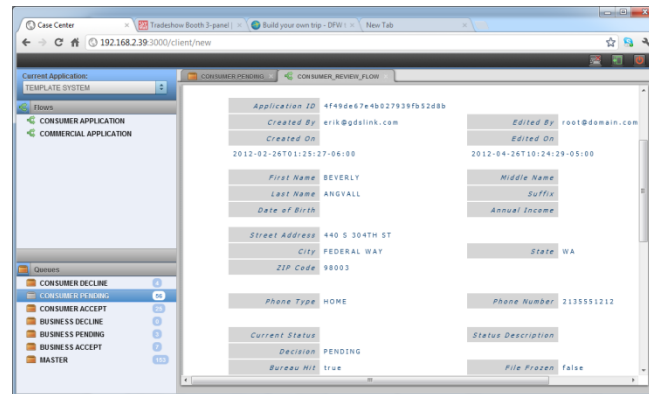
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End User Interface.

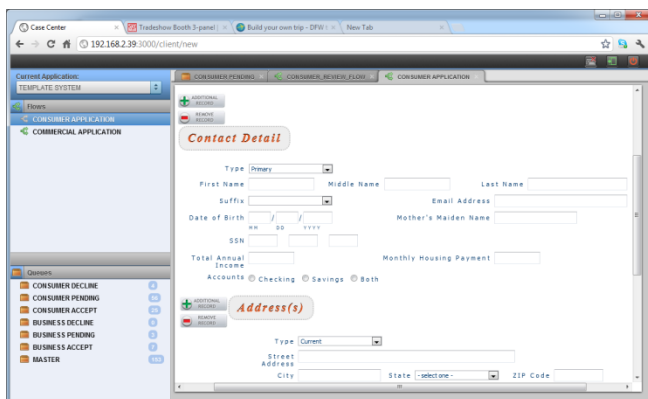
User Queues and Assignment



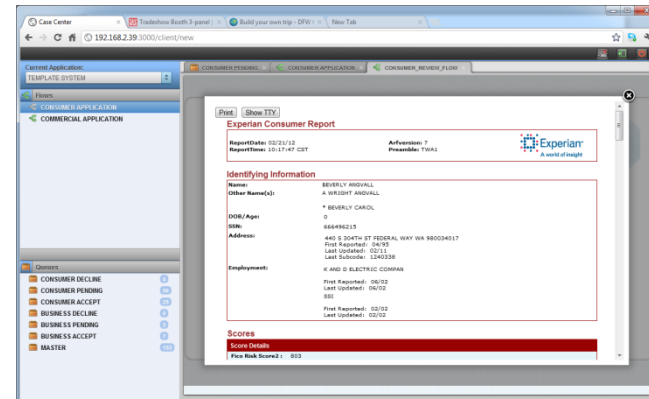
Review Collection Cases in queues



New flows



View credit bureau data



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Decision Engine

Code Credit Rules Into the System

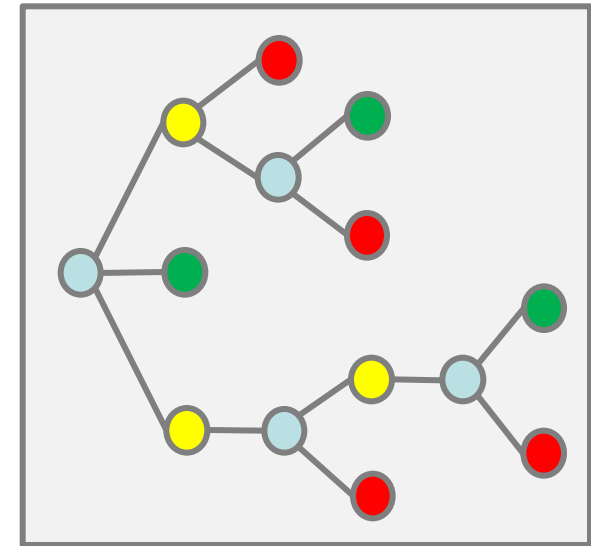
- Same Rules Every Time
- Champion/Challenger Ability

Calculate Variables and Scores

- Set Individual Limits and Interests Rates
- Calculate Complex Segmentation and Scores

Track Deviations

- Record Who Made Them and When
- Follow Their Impact Through the Lifecycle

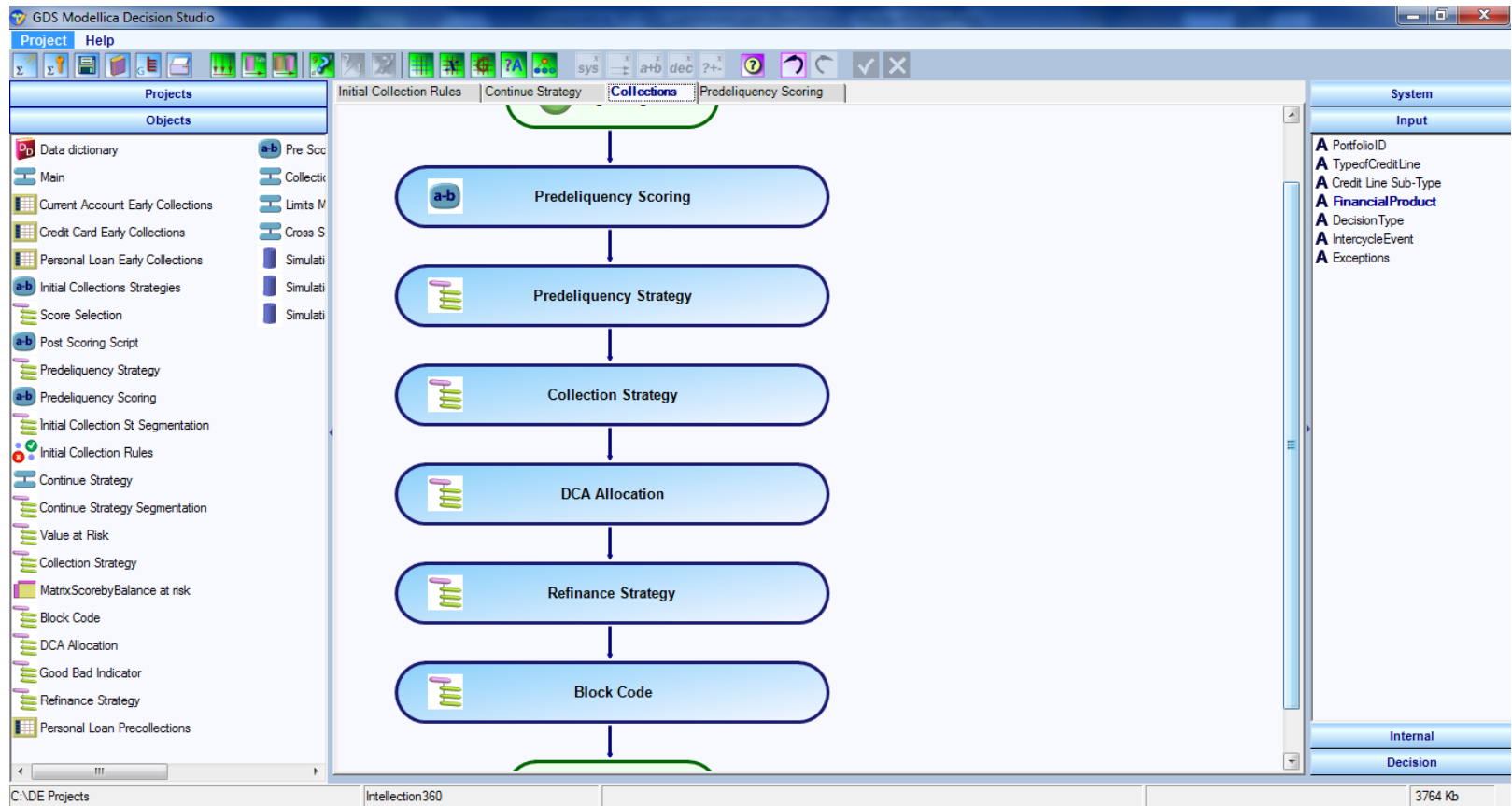


Risk-Defined Automated Rules and Scoring



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Automated Credit Policy



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Credit Data Enrichment™



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Decision Tree Format

The screenshot displays the GDS Modellica Decision Studio interface. The main window shows a decision tree for the 'Predelinquency Strategy' under the 'Initial Collection St Segmentation' tab. The tree starts with a 'Universe' node, which branches into '[Behaviour Score] < 700'. This node further branches into 'Else', which then branches into '[Numberof1ormoreMissedPaymentsLast3M]...'. This node branches into 'Score1:High Risk' and 'Score1:Low Risk'. The 'Score1:High Risk' node branches into 'High Risk', which then branches into 'SMS' and 'Call'. The 'Score1:Low Risk' node branches into 'High Risk', which then branches into 'Call'.

Segmentation	Object	PredelinquencyStrateg	PredelinquencyAction	PredelinquencyReason	PredelinquencyPriority
Universe					
[Behaviour Score] < 700		"High Risk"	"SMS"	"Prevention"	0
Else					
[Numberof1ormoreMissedPaymentsLast3M]...		"Lazy Payer"	"Call"	"Prevention"	2
Score1:High Risk					
Score1:High Risk		"High Risk"	"Call"	"Prevention"	1
Score1:Low Risk					

The interface also includes a 'System' panel on the right with 'Input' and 'Internal' sections, and a 'Decision' section at the bottom. The bottom status bar shows the file path 'C:\NDE Projects', the file name 'Intelligence360', and the file size '3764 Kb'.



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Scorecard Creation and Maintenance

GDS Modellica Decision Studio

Project Help

Projects

Objects

- Data dictionary
- Main
- Current Account Early Collections
- Credit Card Early Collections
- Personal Loan Early Collections
- Initial Collections Strategies
- Score Selection
- Post Scoring Script
- Predeliquency Strategy
- Predeliquency Scoring
- Initial Collection St Segmentation
- Initial Collection Rules
- Continue Strategy
- Continue Strategy Segmentation
- Value at Risk
- Collection Strategy
- MatrixScorebyBalance at risk
- Block Code
- DCA Allocation
- Good Bad Indicator
- Refinance Strategy
- Personal Loan Precollections

Continue Strategy | Collections | Predeliquency Scoring | Credit Card Early Collections | Personal Loan Early Collections | **Personal Loan Precollections**

Independent					
AgeofAccount	0-6	7-12	13-24	25-36	+36
BalanceAmount	Low Balance	10000-30000	30001-50000	+50000	
ExpectedTermstoRun	0-5	6-12	13-24	25-36	36+
Numberof1MissedPaymentsLast6M	0	1	2+		
WorstCustomerIndicatorLast6M	0	1	2	+3	

System

Input

- A PortfolioID
- A TypeofCreditLine
- A Credit Line Sub-Type
- A FinancialProduct
- A DecisionType
- A IntercycleEvent
- A Exceptions

Internal

Decision

C:\GDS Projects | Intelligence360 | 3764 Kb



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Matrix Tables

GDS Modellica Decision Studio

Project Help

Projects

Objects

- Data dictionary
- Main
- PLOAN MCP
- MCP PRE BUREAU
- POST BUREAU
- DISPOSABLE INCOME
- PLOAN SCORE
- CREDIT POLICY
- SET CREDIT LINE FACTOR
- SET CREDIT LINE
- SALARY MCP
- CALL TYPE
- SALARY OR PLOAN
- SCORE FACTOR
- Ploan Training Test File v2.Import
- Ploan Training Test Post v4.Import

SET CREDIT LINE FACTOR

	UNEMPLOYED	EMPLOYED	HOUSEWIFE	SELF EMPLOY	STUDENT
AGE					
18-25	0	5	2	4	2
26-40	0	7	5	5	4
41-62	0	10	5	7	4
63-100	0	5	2	4	2

System

Input

- A FIRSTNAME 9 AGE
- A MIDDLENAME A EMI
- A LASTNAME A PRK
- 9 HOMEPHONE 9 YEA
- A RESSTREETADDRESS A REI
- A RESCITY 9 MOE
- A RESPROVINCE 9 WO
- A EDUCATION 9 YEA
- A JOBTYP A GEI
- A CAROWNER A MA
- 9 SALARY 9 NUM

Internal

Decision

0

Cancel Accept

+ -

if score adverse table random max min round abs int va num isnum notnum text exp log

C:\DE Projects Personal Loan Training 2219 Kb



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Credit Data Enrichment™



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Data Engine – Collecting The Data

Probability Match Against Databases

- Certain Percent Pass Without Intervention
- List of Similar With All Picking Data Displayed
- Learning Algorithm Gets Better at Choosing

Parsed Data In the Decision Process

- Summarize Important Data from the Hits
- Calculate Characteristics from Raw Data
- Allow Automatic Decisioning with Bureau Data



Talk To Internal and External Data Sources



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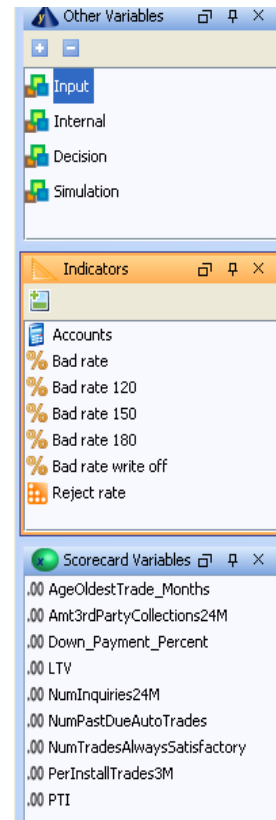
Credit Data Enrichment™



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Decision Intelligence

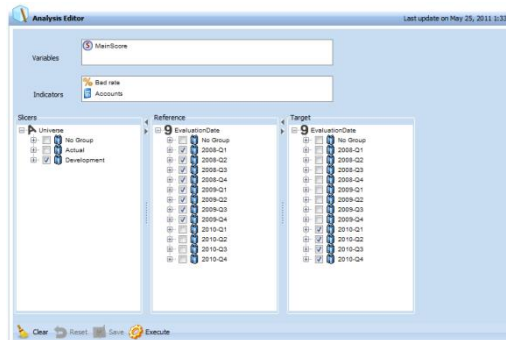
- ✓ Manage an unlimited number of
 - ✓ Decision systems
 - ✓ Scorecards
 - ✓ Datasets
- ✓ Build an unlimited number of indicators to be used in the analyses:
 - ✓ Collection ratios broken down by
 - ✓ Period
 - ✓ Channel
 - ✓ Promise to pay
 - ✓ Debt NPV



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Toolbox

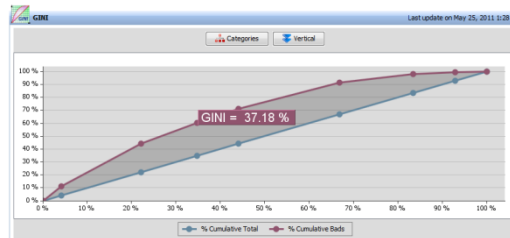
Analysis Editor



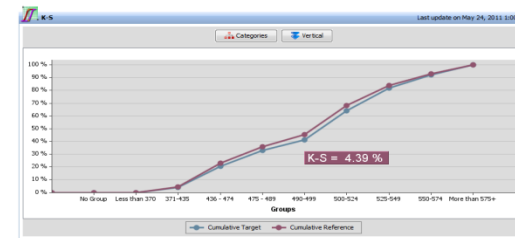
Query set up:

- Variables
- Indicators
- Population

Analyses



Performance Analysis:
- Scorecard performance



Stability Analysis:
- Model stability
- Characteristic stability



Characteristic Analysis:
- Variable performance

DECISION	Categories	FINALDECISION	Categories	Bad rate T	Bad rate R	Accounts T	Accounts R
Total				29.17%	32.58%	28,441	11,559
No Group				0	0	0	0
Approve				0	0	0	0
Decline				49.14%	50.31%	9,722	3,570
Decline (Total)				52.15%	53.12%	1,164	1,811
Decline (Total)				49.46%	50.93%	10,886	4,581
Refer				16.21%	19.92%	17,407	6,864
Refer (Total)				16.59%	20.54%	17,555	6,978


General Analysis:
- Single characteristic analysis
- Cross characteristics analysis




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Performance Analysis

- Scorecard performance
- Target-reference populations
 - e.g. instant comparison of development and current samples
- Filter by variables
 - e.g. refinance
- Indicators summary window
- Charts for reporting

 **Pivot Table** Last update on May 23, 2011 12:20 PM

MAINSCORE ▾ Categories ▾	Accounts	% Bad rate	BadRa...	Goods	Bads	Odds	Cum Goods	Cum Bads
Total	25,000	32.22%	0	16,946	8,054	2.1	100.00%	100.00%
+ No Group	0		0	0	0		0.00%	0.00%
+ Less than 370	0		0	0	0		0.00%	0.00%
+ 371-435	1,108	77.80%	0	246	862	0.29	1.45%	10.70%
+ 436 - 474	4,645	55.54%	0	2,065	2,580	0.8	13.64%	42.74%
+ 475 - 489	3,211	39.02%	0	1,958	1,253	1.56	25.19%	58.29%
+ 490-499	2,416	38.20%	0	1,493	923	1.62	34.00%	69.75%
+ 500-524	5,780	30.31%	0	4,028	1,752	2.3	57.77%	91.51%
+ 525-549	3,907	12.80%	0	3,407	500	6.81	77.88%	97.72%
+ 550-574	2,243	5.88%	0	2,111	132	15.99	90.33%	99.35%
+ More than 575+	1,690	3.08%	0	1,638	52	31.5	100.00%	100.00%

 **Summary** Last update on May 23, 2011 12:24 PM

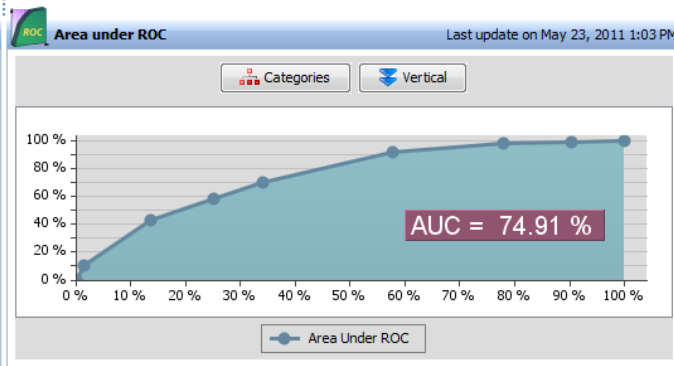
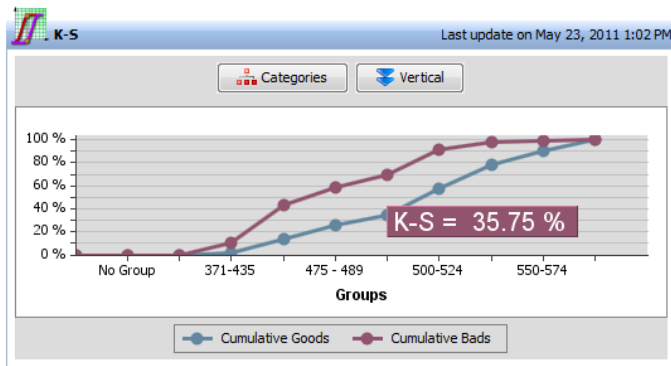
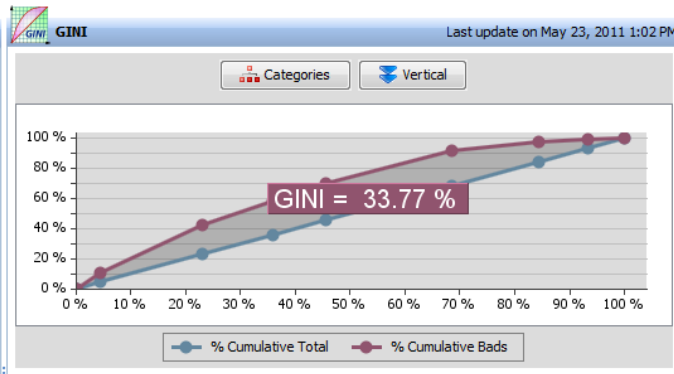
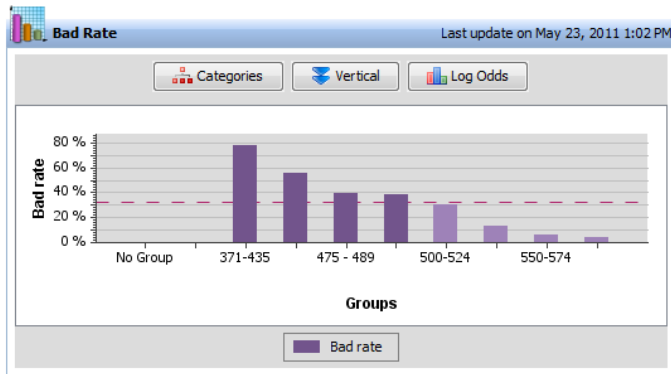
	GINI	K-S	AUC	Power
Groups	33.77%	35.75%	74.91%	1,024.15
Categories	34.88%	37.48%	75.73%	1,112.15



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Performance Analysis

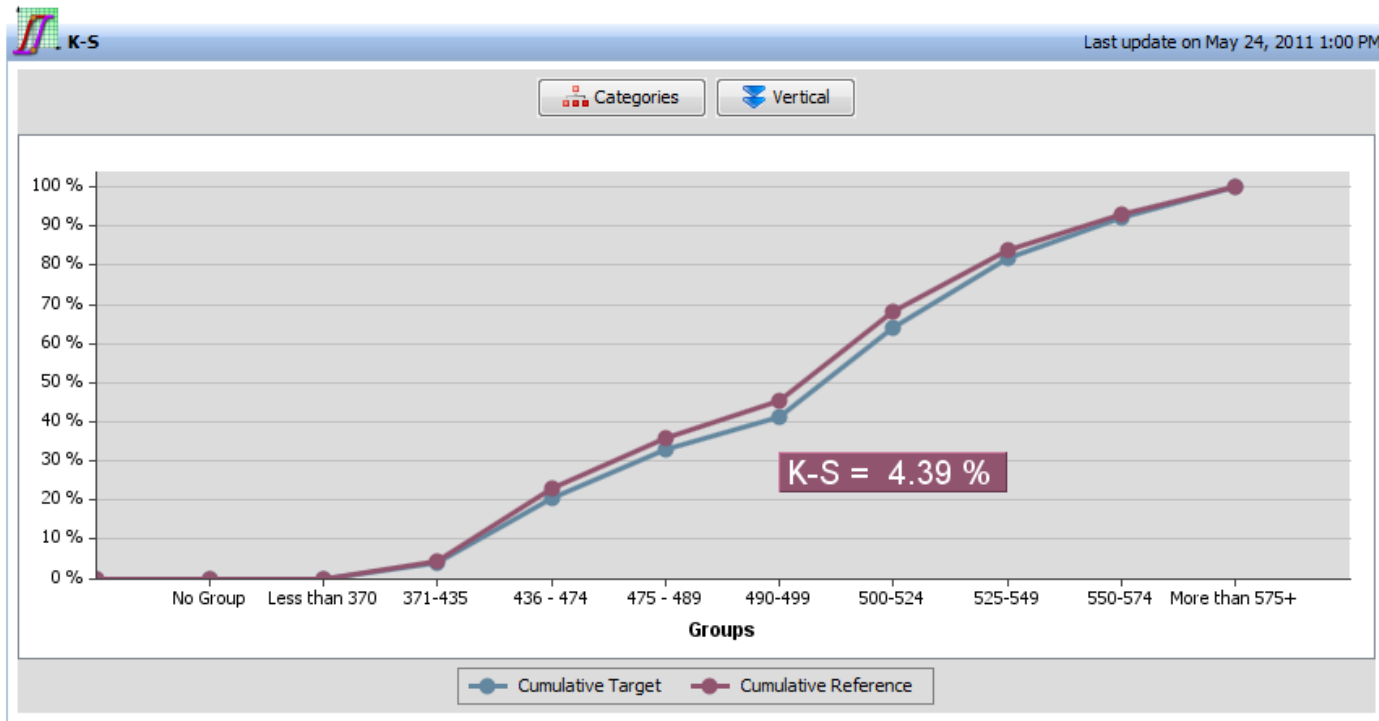
- Charts: Bad rate, GINI, AUC and K-S



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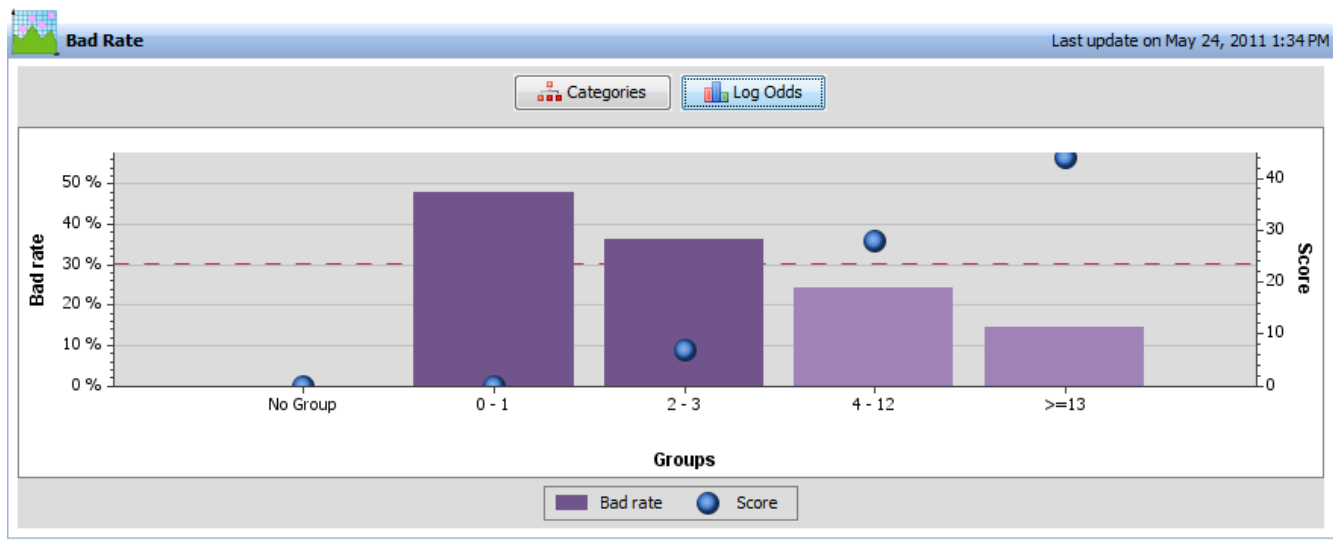
Stability Analysis

● Chart: K-S

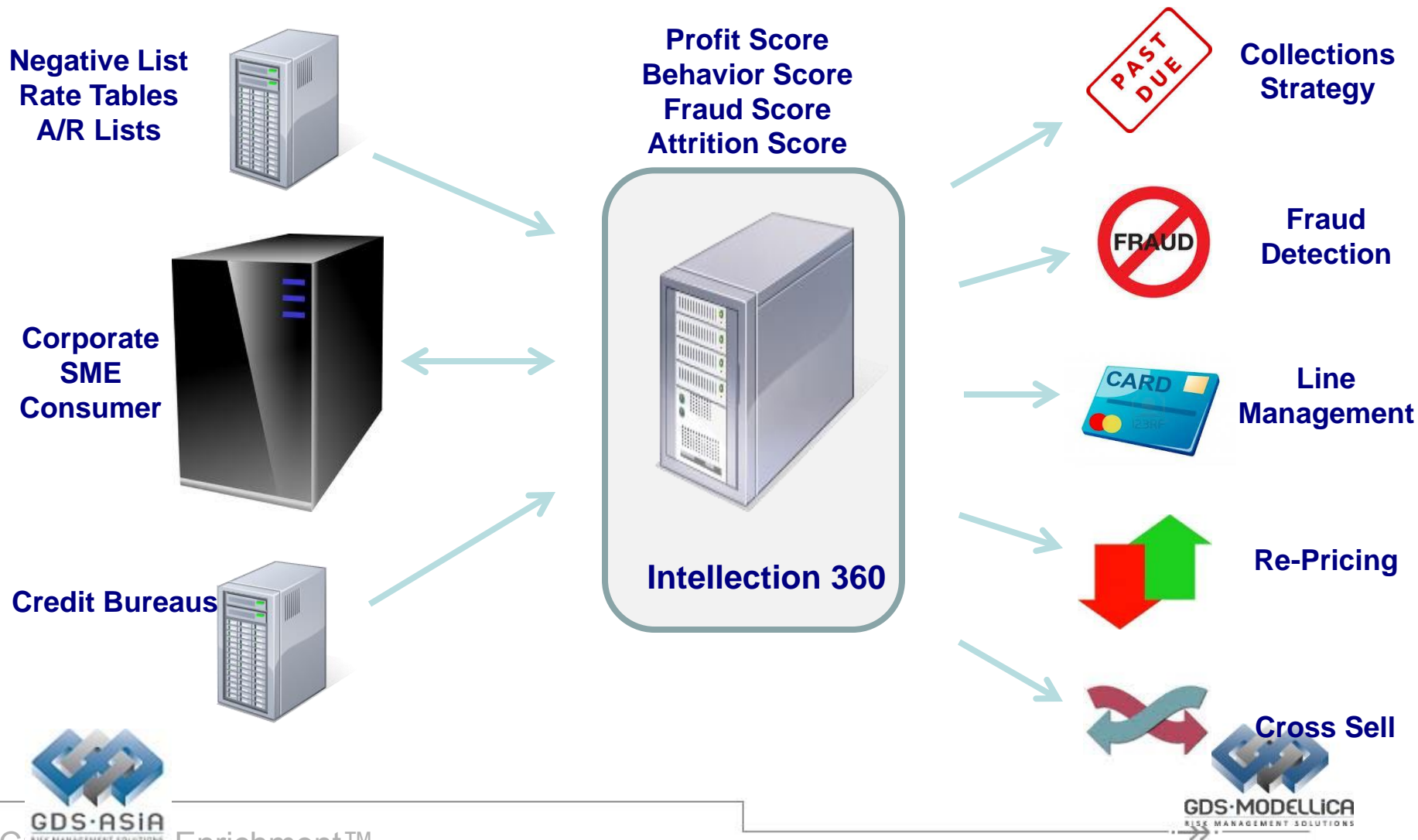


Characteristic Analysis

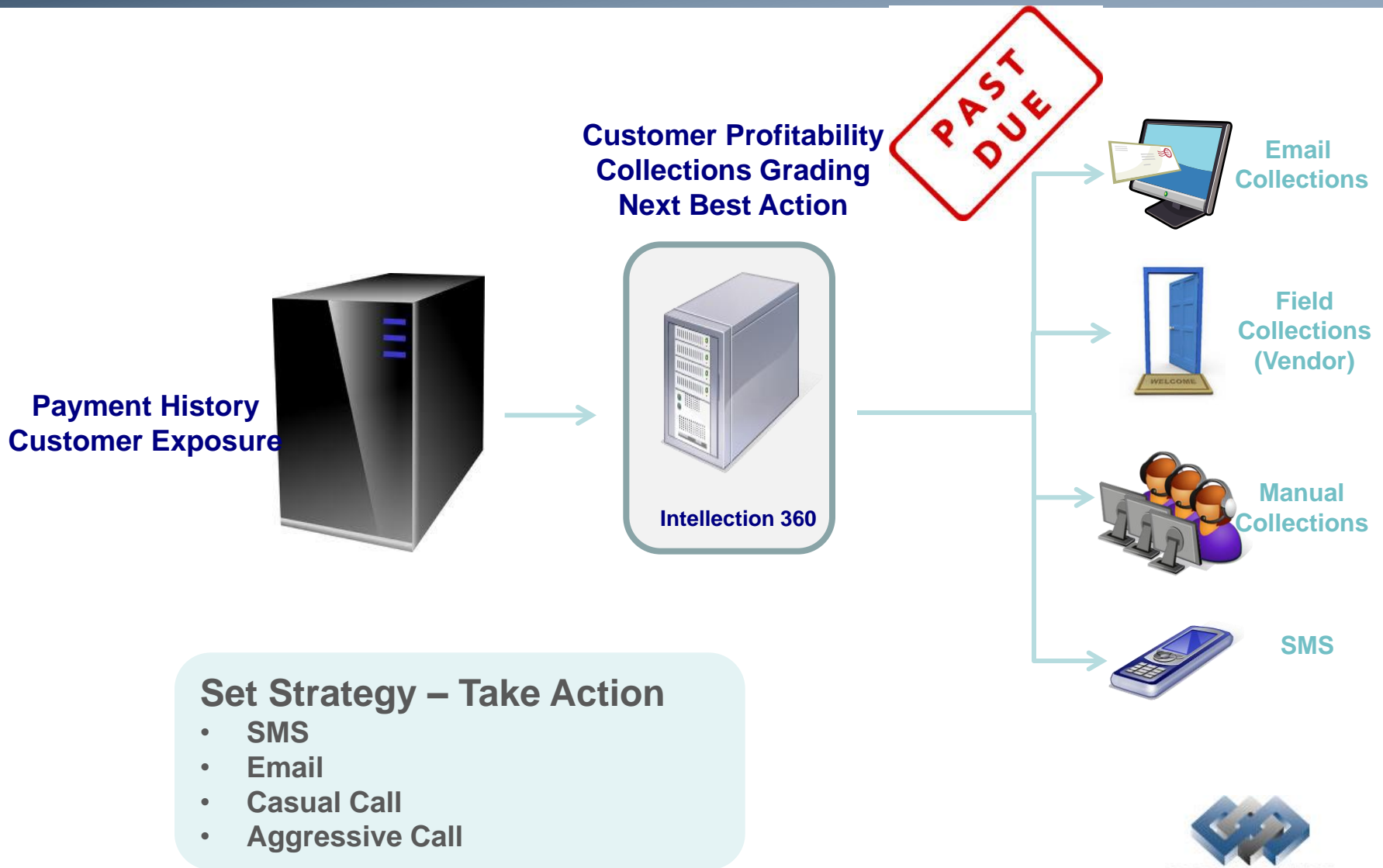
- Alignment Collection Rate vs. attributed score.



Intellection360 - Account Management Hub

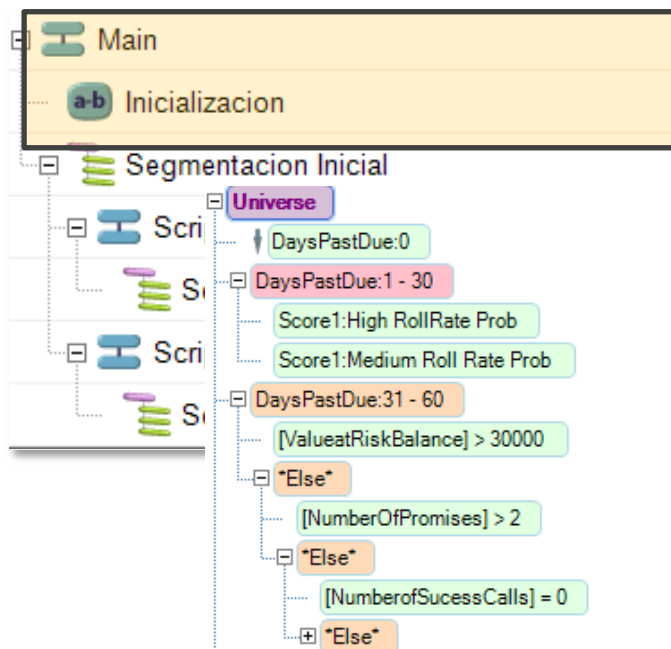


Collections Strategies



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Collection Strategies



"EarlyCollections HR"	1	"ExternalCC"	"Phone"
"EarlyCollections MR"	2	"SMS"	"SMS"
"HighPrior"	1	"CCSenior"	"Phone"
"Negotiation"		"CCSenior"	"Phone"
"SkipTracing"	1	"SkipTracing"	

Collection score - 0/90 DPD

System description Project Irregular Consumer Loan

Scorecard Collection score 0-90

Independent	100.0000					
NumberOfTimesInDelinquency 0.0000	None 35.0000	One 20.0000	Two or Three 7.0000	Four or more 0.0000		
WorstDelinquency 0.0000	Current 39.0000	1-90 15.0000	91-180 4.0000	181+ 0.0000		
CollectedLast12MOverInstallment 0.0000	First delinquency 22.0000	No delinquency 0.0000	Until 1 installment 5.0000	From 2 to 3 installments 10.0000	4 or more installments 15.0000	
AccommodationType 0.0000	Rent 4.0000	Family 7.0000	Own property 9.0000	Other 0.0000		
 OutstandingAmount 0.0000	Less than 500 20.0000	500 to 3000 -0.0030	3000 to 6000 -0.0025	More than 6000 5.0000		
Nationality 0.0000	Africa 0.0000	Asia 2.0000	West other 18.0000	European Union 20.0000	United States 20.0000	Latinamerica 10.0000
CreditBureauLast 0.0000	Not found 35.0000	Found 0.0000	No inquiry 15.0000			

Collection score 0-90 appears in the following objects:

- Calculations - delinquent

Collection Score 91/180 DPD

System description Project Irregular Consumer Loan

Scorecard Collection score 91-180

Independent	100.0000					
NumberOfTimesInDelinquency 0.0000	None 35.0000	One 20.0000	Two or Three 7.0000	Four or more 0.0000		
WorstDelinquency 0.0000	Current 39.0000	1-90 15.0000	91-180 4.0000	181+ 0.0000		
CollectedLast12MOverInstallment 0.0000	First delinquency 22.0000	No delinquency 0.0000	Until 1 installment 5.0000	From 2 to 3 installments 10.0000	4 or more installments 15.0000	
AccommodationType 0.0000	Rent 4.0000	Family 7.0000	Own property 9.0000	Other 0.0000		
 OutstandingAmount 0.0000	Less than 500 20.0000	500 to 3000 -0.0030	3000 to 6000 -0.0025	More than 6000 5.0000		
Nationality 0.0000	Africa 0.0000	Asia 2.0000	West other 18.0000	European Union 20.0000	United States 20.0000	Latinamerica 10.0000
CreditBureauLast 0.0000	Not found 35.0000	Found 0.0000	No inquiry 15.0000			

Collection score 91-180 appears in the following objects:

- Calculations - default

Segmentation strategy default 90

System description

Project Irregular Consumer Loan

Segmentation Strategy - default90

[-] Universe		
[-] VIP:VIP	Action	"ManualTreatment"
	Team	9
	Role	"SeniorCollector"
	MessageType	"V2"
[-] VIP:No		
[-] LastInstallmentPastDue:First	Action	"E-mail - hard"
	Team	1
	Role	"AdministrativeSupport"
	MessageType	"E2"
[-] LastInstallmentPastDue:Second or higher		
[-] Score:Score low		
[-] CH-CH_default90:Champion	Object	Field Visitor assignment
	Action	"FieldVisit"
	Team	4
	Role	"FieldVisitor"
	MessageType	"F2"
[-] CH-CH_default90:Challenger1	Object	Agency assignment
	Action	"Agency"
	MessageType	"A1"
[-] Score:Score medium	Action	"Letter"
	Team	3
	Role	"AdministrativeSupport"
	MessageType	"L2"
[-] Score:Score high	Action	"PhoneCall - hard"
	Team	2
	Role	"TeleServices"
	MessageType	"P4"

Strategy - default90 appears in the following objects:

Segmentation strategy default 180

System description

Project Irregular Consumer Loan

Segmentation Strategy - default180

Universe		
VIP:VIP	Action	"ManualTreatment"
	Team	9
	Role	"CollectionSupervisor"
	MessageType	"V3"
VIP:No		
LastInstallmentPastDue:First	Action	"PhoneCall - hard"
	Team	2
	Role	"TeleServices"
	MessageType	"P5"
LastInstallmentPastDue:Second or higher		
Score:Score low	Object	Lawyer assignment
	Action	"Litigation"
	Team	8
	Role	"Lawyer"
	MessageType	"Y1"
Score:Score medium	Object	Agency assignment
	Action	"Agency"
	MessageType	"A2"
Score:Score high	Object	Field Visitor assignment
	Action	"FieldVisit"
	Team	4
	Role	"FieldVisitor"
	MessageType	"F3"

Strategy - default180 appears in the following objects:

- Default180

Segmentation strategy delinquent accounts

System description

Project Irregular Consumer Loan

Segmentation Strategy - delinquent

Universe		
VIP:VIP	Action	"ManualTreatment"
	Team	9
	Role	"JuniorCollector"
	MessageType	"V1"
VIP:No		
LastInstallmentPastDue:First		
... Control group 4:Champion	ChChSegment	"Chmp"
... Control group 4:Challenger1	ChChSegment	"Ch01"
... Control group 4:Challenger2	ChChSegment	"Ch02"
... Control group 4:Challenger3	ChChSegment	"Ch03"
LastInstallmentPastDue:Second or higher		
Score:Score very low		
[DelinquentAmount] > 5000	Object	Field Visitor assignment
	Action	"FieldVisit"
	Team	4
	Role	"FieldVisitor"
	MessageType	"F1"
Else	Action	"Letter"
	Team	3
	Role	"AdministrativeSupport"
	MessageType	"L1"
Score:Score low	Action	"PhoneCall - hard"
	Team	2
	Role	"TeleServices"
	MessageType	"P3"
Score:Score medium	Action	"PhoneCall - mild"
	Team	2
	Role	"TeleServices"
	MessageType	"P2"

Segmentation strategy delinquent accounts

System description

Project Irregular Consumer Loan

Segmentation Strategy - delinquent

Score:Score high			
CH-CH_delinquent:Champion		Action	"SMS"
		Team	2
		Role	"TeleServices"
		MessageType	"M1"
		ChChSegment	"Xmp"
CH-CH_delinquent:Challenger1		Action	"PhoneCall - soft"
		Team	2
		Role	"TeleServices"
		MessageType	"P1"
		ChChSegment	"Xmp01"

Strategy - delinquent appears in the following objects:

- Delinquent

The value delivered

- Modular approach to debt collection solution components implementation and deployment
- Efficiency improvement in managing collection process, up-grade and cross selling.
- Collection actions prioritization based on client behavior and risk.
- Efficiency improvement for value of collected money, good clients retention and credit losses reduction.
- Reporting generation on portfolio quality and collection ratios
- Full control over debt collection workflow management, update and creation
- Cloud hosting capability

Intellection 360 **an affordable solution for debt collection management**

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