

Data Mining

PROSPECTING FOR INTEGRITY





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Business Intelligence

- Ability for an organization to turn capabilities into knowledge
- Provide historical, current and predictive views of business operations
- Support better business decision-making

Data Mining

- ⦿ Discover something new
- ⦿ Analyze large amounts of data to extract patterns, unusual records, dependencies

The “I” Word



Data Mining Techniques

- Pattern Mining

Does buying beer=buying pretzels?

- Subject-based Mining

Finding the Bad Guys

Data Mining Techniques

- Classification
- Clustering
- Prediction
- Sequential Patterns

Data Mining

- Pre-processing of data

Weeding out the garbage

- Out of range (Income >100%)
- Impossible combinations
(Gender : Male, Pregnant: Yes)
- Missing values



Good Data = Better Output

- Good system design to capture raw data
- Clean, valid, changeable
- Tools to sort, filter, change, edit
- Skillful human analysis, effective evaluation



Card Replacements

Card Replacements

Data we can look for:

- # of times client requests a card
- Period of time of requests
- Date cards were mailed
- Transactions on these cards
- Location of redemptions
- Time of day



Improving Reports

Collect

Refine

Filter

Focus

Sort

Evaluate





EBT Data Mining Tools

Standard System
Reports

Special “Fraud
Reports”

Ad-Hoc Reporting
Tools

SNAP ALERT
system

Tools

When value exceeds a desired threshold:

- ⦿ Alarms and alerts
- ⦿ Change color
- ⦿ Generate a notice (email, text, etc.)

SNAP Integrity Reports	Similar WIC Reports
After Hours Transactions	√
Even Dollar Transactions	√
Exceeded PIN Attempts	√
Excessive Dollar Transactions	WIC Not to Exceed (NTE) Reports (see below)
Excessive Return Transactions	NA
Full SNAP Balance Withdrawal	Full WIC CVB redemptions
Manual Card Entry	√
Multiple Transactions within one hour	√
Transactions Attempted on an Invalid Card	√

WIC Integrity Reports	Purpose
<i>CLIENTS</i>	
Large# families redeeming outside of clinic service area	Client and retailer trafficking
Point of sale errors/ failed transactions	Identify PIN failures, PIN locks
<i>RETAILERS</i>	
WIC Not to Exceed (NTE) exceptions	Transactions that failed the NTE edit
Full WIC CVB redemptions	Padding transactions
Claim submission errors	Patterns, unusual behavior
Excessive trips through lane	Attempts to reach NTE w/out exceeding
Multiple WIC UPC price increases/variation in UPC prices	Attempts to reach NTE w/out exceeding; inflate WIC prices

Wyoming Discovers Attempted SNAP Fraud

Transactions for Acct# [REDACTED] Food Stamp - Active

Avail Bal: \$ 0.00

Date/Time	Type	Tran Amt	Comp Amt	Avail. Bal	Card #	Loc/Reason	Appr	Fee	Sur	Mth
04/16/12 14:33	POS Purchase	\$ 13.45	\$ 13.45	\$ 1.98	5053 4900 0064 0688	Store 1	Y	N	N	S
05/03/12 06:15	Deposit Bene	\$ 518.00	\$ 518.00	\$ 519.98	5053 4900 0064 0688	BENEFIT UPDATE	Y	N	N	S
05/03/12 13:18	POS Purchase	\$ 29.98	\$ 0.00	\$ 0.00	5053 4900 0064 0688	Store 1	N55	N	N	S
05/03/12 13:19	POS Purchase	\$ 29.98	\$ 29.98	\$ 490.00	5053 4900 0064 0688	Store 1	Y	N	N	S
05/03/12 13:34	POS Purchase	\$ 94.20	\$ 94.20	\$ 395.80	5053 4900 0064 0688	Store 1	Y	N	N	S
05/03/12 14:03	POS Purchase	\$ 9.98	\$ 9.98	\$ 385.82	5053 4900 0064 0688	Store 1	Y	N	N	S
05/04/12 13:07	POS Purchase	\$ 17.06	\$ 17.06	\$ 368.76	5053 4900 0064 0688	Store 1	Y	N	N	S
05/04/12 13:19	POS Purchase	\$ 5.57	\$ 5.57	\$ 363.19	5053 4900 0064 0688	Store 1	Y	N	N	S
05/04/12 13:33	POS Purchase	\$ 11.94	\$ 11.94	\$ 351.25	5053 4900 0064 0688	Store 1	Y	N	N	S
05/04/12 16:29	POS Purchase	\$ 119.48	\$ 119.48	\$ 231.77	5053 4900 0064 0688	Store 2				S
05/04/12 19:24	POS Purchase	\$ 108.79	\$ 108.79	\$ 122.98	5053 4900 0064 0688	Store 2	Y	N	N	S
05/05/12 13:00	POS Purchase	\$ 12.10	\$ 12.10	\$ 110.88	5053 4900 0064 0688	Store 1	Y	N	N	S
05/05/12 13:05	POS Purchase	\$ 32.24	\$ 32.24	\$ 78.64	5053 4900 0064 0688	Store 1	Y	N	N	S
05/05/12 13:33	POS Purchase	\$ 4.59	\$ 4.59	\$ 74.05	5053 4900 0064 0688	Store 1	Y	N	N	S



WIC Data Adds Value to Fraud Prevention

- WIC authorizes its own retailers
- WIC Information Systems have data on both clients and retailers that can be compared
- WIC food items inherently change the type of fraud
- Requires creative thought to address new issues



**WIC CAN LEARN
FROM SNAP**

Other Powerful Tools

- Common Sense
- Unity - Common direction with like contractors
- Synergy
- Objective viewpoints – outside audits and evaluations of States

