



Independent Monitoring Service Bureau for Parimutuel

University of Arizona RTIP Symposium
Tucson, AZ
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Parimutuel Industry Hurt Over and Over again by Pernicious Lack of Integrity



Posted: Tuesday, September 30, 2008 6:29 PM

Big bettor challenges Ky. to take lead in integrity

by **Frank Angst**

One of the country's leading bettors told a Kentucky horse racing panel that **the state could increase both the number of horseplayers who wager on the state's races and the amount of money wagered by taking the lead on integrity issues.**

Mike Maloney, who bets about \$10-million a year on races from his Keeneland Race Course base, addressed Governor Steve Beshear's Task Force on the Future of Horse Racing on Tuesday in Lexington. Maloney serves on a task force committee looking into integrity issues like pari-mutuel pool security, equine drug testing standards and enforcement, and backstretch security.

Maloney attended a National Thoroughbred Racing Association Marketing Summit on September 21 and was **disappointed to hear little mention of improving integrity.** Maloney believes such an initiative would increase handle more than any idea discussed at that summit, which included ideas such as added emphasis on televised Saturday racing and creating "horse racing standings."

Independent Monitoring is a Homeland Security Issue



“From a Homeland Security perspective, parimutuel is a \$16 Billion unregulated bank that is vulnerable to money laundering and the financing of terrorist activity.

Unless the industry monitors itself, the Federal government will step in.

--Secretary of Homeland Security Tom Ridge



Continuous Monitoring & Continuous Auditing

- Continuous auditing – is the examination of every financial transaction to insure integrity of the wagering pools and accounts
- Continuous monitoring – is the examination of every transaction and every business and personal relationship to detect inappropriate patterns and events in wagering activity
- Continuous monitoring & continuous auditing is an established method used by industries in compliance with the U.S. Patriot Act, U.S. Foreign Corrupt Practices Act, and Sarbanes-Oxley
- Continuous monitoring & continuous auditing of parimutuel transactional wagers and accounts is ***immediately available***

- Independent: No affiliation or other business relationship with racetrack, tote, or other parimutuel entity in order to insure that there is no influence
- Real-Time: As an event occurs – not a report of yesterday's activity
- Transactional: Every event as it occurs – not a partial analysis of some of yesterday's activity
- Monitoring: Independently examination and verification of each transaction in real-time

NYSRWB Section 5100.24(I) Independent Monitoring System

(effective date: January 1, 2009)

The totalisator company shall utilize **an independent real time transaction monitoring system** approved by the board. This system is to provide information in a read only format. At a minimum the system shall:

1. Verify all transactions performed by the totalisator;
2. Provide access to the board and the authorized pari-mutuel wagering entity for monitoring activity;
3. Notify the authorized pari-mutuel wagering entity's mutuel manager or duly appointed representative when the system detects a discrepancy in the totalisator operation and/or with the independent monitoring system automatically. The mutuel manager shall determine the cause of the error and make any necessary repairs or adjustments pursuant to the rules and notify the board immediately after each occurrence; and
4. Perform other requirements deemed appropriate by the board.



- Independent
- Real-time
- Transactional
- Approved (RCI)
- Monitoring
- Verification
- Accessible
- Notifications
- Fully extensible

- Examines and validates each and every ADW transaction
- Ensure ADW accounts accurately match the tote transactions
- Ensures compliance with Jurisdiction rules
- Alert is issued whenever account activity indicates need for investigative review



Oregon Racing Commission to convene IRG meeting

by Frank Angst

The Oregon Racing Commission has scheduled a special meeting for 3:30 p.m. PDT Friday to consider possible action on International Racing Group, a rebate shop that uses Oregon as its wagering hub.

Officials from United States Immigration and Customs Enforcement and the U.S. Attorney's Office in Las Vegas are conducting an investigation involving several IRG customers and a former owner of the Curacao-based rebate shop. Yobet.com Inc., which owns IRG, said federal authorities in Nevada have seized \$1.5-million from IRG bank accounts.

"We're very concerned," said Oregon Racing Commission Executive Director Randy Evers. "We've been keeping both eyes on it actually."

Evers said several IRG customers have reported that the rebate shop has not been able to process account withdrawal requests.

"They're able to accept wagers and deposits, but they're not able to process withdrawals," Evers said. Those reports match the story of one IRG customer, who preferred to remain anonymous, who talked to Thoroughbred Times. The customer explained that on October 15 he was told funds were not available for withdraw because IRG was changing banks. On October 17 the customer said an IRG representative told him funds would not be available, "for some time."

Not having funds available for customers could be in violation of IRG's Oregon licensing agreement. Evers said he anticipates most of today's meeting to take place in executive session because of potential litigation. Representatives of IRG are expected to participate.

- Industry move toward testing, certification, and due diligence is a good starting point – but it is only a starting point
 - Monitoring and auditing is due diligence in real-time
 - Credibility of due diligence requires continuous monitoring and continuous auditing
 - With continuous monitoring, due diligence is always kept up to date
- Trust But Verify (“Know your Licensee”)
 - Every transaction
 - Every wagering and account center
 - Every personal and every business relationship

AMS Service Bureau: Turn-key solution

- Immediate compliance with New York rule
 - Similar rule by California and other States anticipated very soon
 - AMS is the only agency approved by the RCI for **independent monitoring** of parimutuel
- Zero barriers
 - No hardware costs
 - Software as a Service (SaaS)
 - Pay-per-use



- Staffed with parimutuel and cyber-security experts
- Proprietary Independent Monitoring System (IMS)
 - Ongoing research and development
 - Ongoing updates of risk scenarios
 - Artificial intelligence technology
 - Similar to New York Stock Exchange System
- Continuous monitoring of transactional stream
- Continuous auditing of transactional stream
- Automated alerts

Audit Functionality

- Validate account activity against tote transactions
- Validate handle based fees (tax payments, breeder funds, purse accounts)
- Validate pools open to approved sources
- Validate pool totals, cancels, refunds, commissions, takeout, and settlements

Financial Controls

- Timely detection and resolution of variances
- Jurisdiction specific reporting
- Consolidated alerts and reports

Protects the State, Horsemen, and Fans

- Continuous auditing ensures proper payments
- Detect and prevent account shenanigans
- Correct reporting of handle
- All cyber-wagering monitored (ADW, SMPO, Simulcast)
- Assure all financial reports complete and correct

MonitorPlus™ Independent Monitoring System

MonitorPlus™ was specifically designed & built to solve cyber-integrity issues in the parimutuel wagering pools and wagering accounts

- Real-time transactional monitoring
- Continuous auditing to prevent accounting misdeeds
- Dynamic & continuous due diligence of ADWs & SPMOs
- Unauthorized access to domestic pools
- Wagering fraud
- Past Posting / Cancel Delay
- Odds manipulation
- Performance enhancement
- Money laundering / Terror Financing
- Collusion

MonitorPlus™ is a very powerful real-time, transactional **discovery, learning & alerting** system which is continually updated to address very serious parimutuel integrity problems.

- Examine each transaction
 - Example: past posting, cancel delay abuse, odds manipulation
- Dynamic transaction group analysis
 - Example: transaction patterns that may indicate a race fix
 - Boat race, dead contender, random bet validation

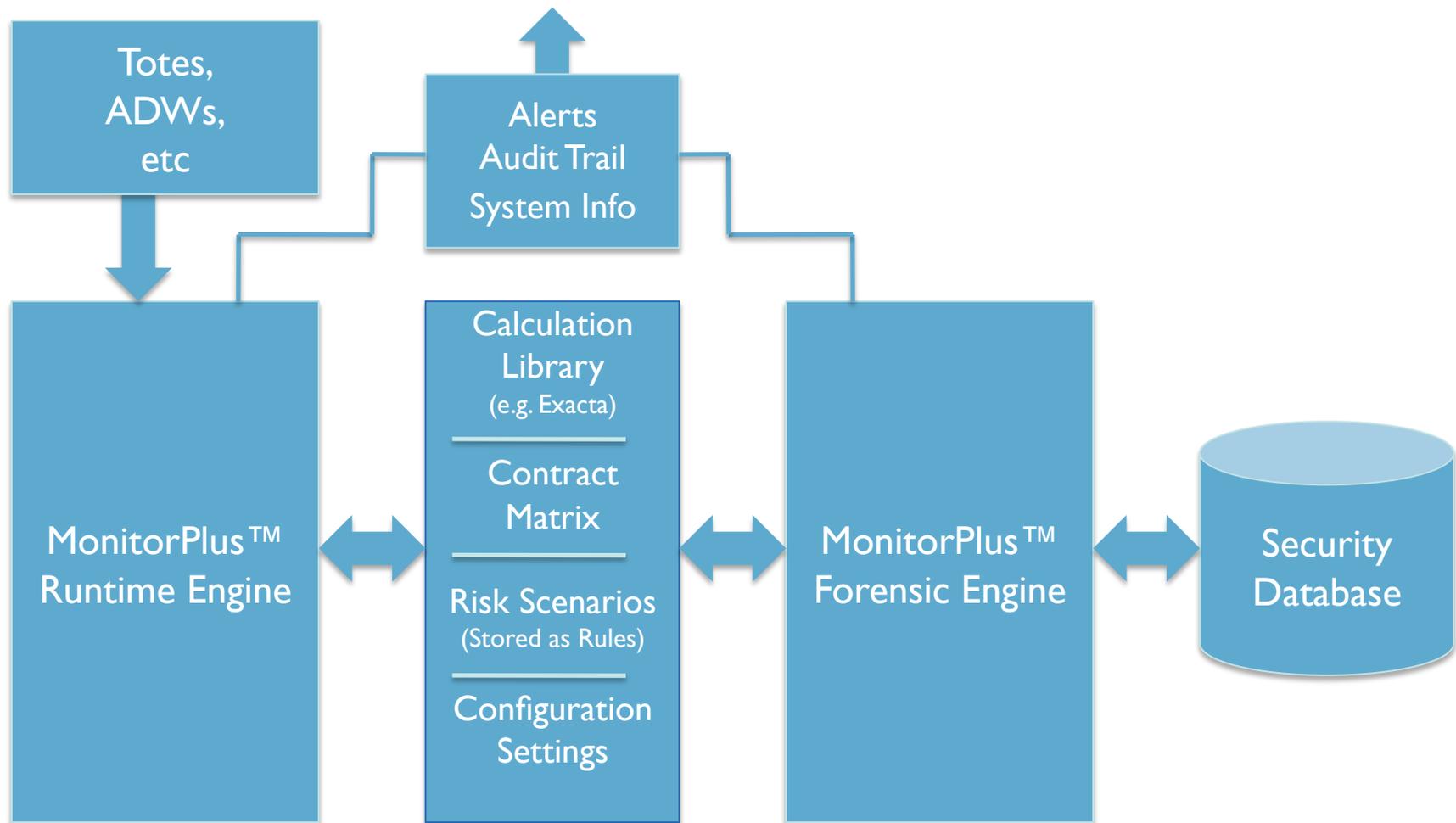
- Executes IF THEN rules

e.g. IF Cancel_Time > Max_Bet_Time
 AND Cancel_Time - Bet_Time > 30 sec
 THEN Cancel_Delay_Alert

- Issues Alerts in Real-time

- RCI Model Rules {tested}
- Method 1: Independent Calculations
 - Pro: Complete validation
 - Con: Speed
- Method 2: Tally of tote calculations
 - Pro: Speed
 - Con: No validation of calculations, only validation of totals

- **Process tote transactional stream**
 - Receive, verify, parse, & distribute transaction information
- **Apply Risk Scenarios**
 - Dead Contender, Cancel Delay
- **Perform Calculations**
 - Pricing, Payouts
- **Generate Output**
 - Alerts, Reports



- Integrity issues need to be honestly addressed by the industry
- Serious independent real-time monitoring is required, not simple-minded band-aid solutions

Example: Past posting (finally recognized as a real problem!)

Moving the stop wagering time by a minute will only move the problem...and will only serve to frustrates the fans...

Real-time Example: {Detection of Cancel Delay Abuse }

- “Cancel Delay” is a tote system feature which allows for cancellation of errors that may have occurred immediately prior to the normal close of wagering
- This MonitorPlus risk scenario detects potential abuse of cancel delay to gain a fraudulent wagering advantage.
- Test transactions included:
 - 800+ races
 - 5,500+ mutual pools
 - 4,100+ cancel transactions

Cancel After Betting Stopped

Ten Cancel Transactions after Betting Stopped

Race	Bet Time	Race Last Bet Time	Cancel Time	Cancel - Bet Time	Cancel - Race Last Bet Time
3	10:03:14 PM	10:06:40 PM	10:06:45 PM	3:31	0:05
3	10:03:02 PM	10:06:40 PM	10:06:43 PM	3:41	0:03
4	10:26:23 PM	10:26:40 PM	10:26:41 PM	0:18	0:01
55	9:33:44 PM	9:36:24 PM	9:36:29 PM	2:45	0:05
62	4:08:35 PM	4:08:35 PM	4:08:39 PM	0:04	0:04
62	4:08:32 PM	4:08:35 PM	4:08:38 PM	0:06	0:03
237	11:01:51 PM	11:01:57 PM	11:02:02 PM	0:11	0:05
544	12:03:09 AM	12:03:16 AM	12:03:18 AM	0:09	0:03
550	10:23:51 PM	10:23:55 PM	10:23:57 PM	0:06	0:02
619	12:12:43 AM	12:12:44 AM	12:12:48 AM	0:05	0:04

Three Suspect Cancel Transactions

- Bets transaction time > 30 seconds before cancel

Race 3	3 minutes	41 seconds
	3 minutes	31 seconds

- Race 55 2 minutes 45 seconds

- Bets (bet string variable) suspect wagering > cancel transactions.

- Suspect Bet Transactions Race 3

<u>Mutuel Ticket</u>	<u>tran # xxxx01</u>	<u>Race 3</u>
• 1,3,7 / 1,3,7 / 1,3,7	Tri Box	
• 2,3,7 / 2,3,7 / 2,3,7		
• 3,4,7 / 3,4,7 / 3,4,7		34 bets
• 3,5,7 / 3,5,7 / 3,5,7		
• 3,6,7 / 3,6,7 / 3,6,7		
• 3,7 / 3,7	Ex Box	

<u>Mutuel Ticket</u>	<u>tran # xxxx02</u>	<u>Race 3</u>
• 7 / 1,2,3,4,5,6,7	Ex Wheel	
• 7	Win	7 bets

- Race 3 Official Order of Finish
- Win 2
- Place 3
- Show 1
- Cancel transactions for Race 3 are suspect because they may indicate cancellation of wagering transactions based on observation of the # 7 contestant after the start of the race. For example a proven front running favorite unexpectedly get a bad start, prompting fraudulent cancellation of the wagers during the allowed cancel delay period. Cancellation of two suspect transactions for race three occurred 3 seconds and 5 seconds after the race last bet involved a total of 41 separate bets.

Race 55 - 60 Bets Canceled

- Suspect Bet Transactions Race 55
- Aa single suspect bet/cancelation with a total of **60 individual bets** in the bet string. This cancellation occurred 5 seconds after the race last bet

.Mutuel Ticket **tran #** **xxxx03** **Race 55**
 • **2,4,5,6,8 / 2,4,5,6,8 / 2,4,5,6,8** **Tri Box** **60 bets**

- In race 55, each of the leg in the trifecta box includes 5 selections, none of which includes the winner of the race bet # 7. Without bet number 7 in one of the first three positions there is no possible winning combination for this wager.

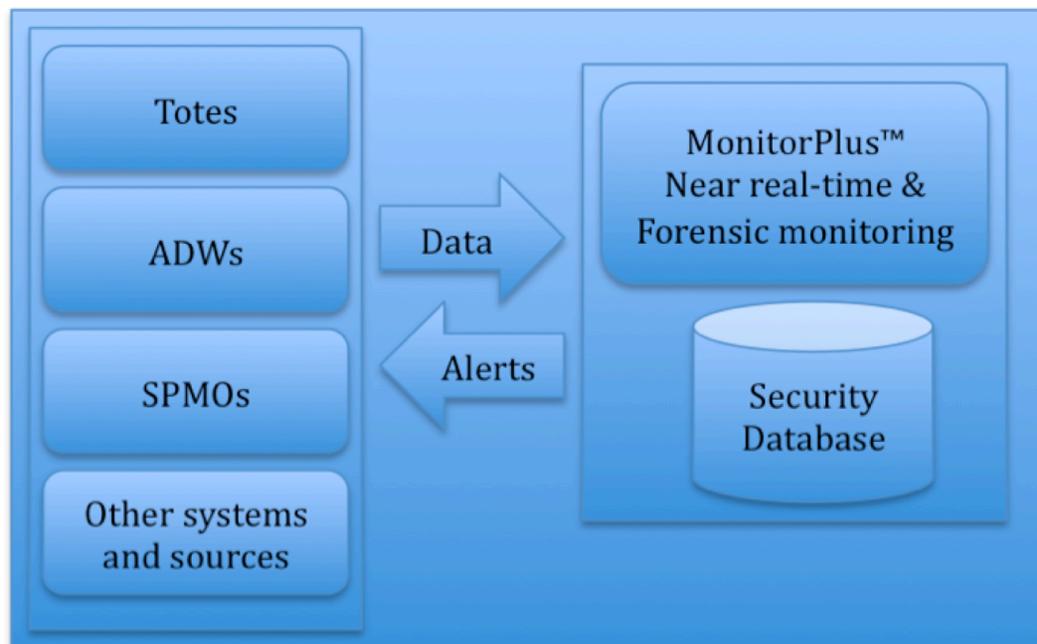
- **Race 55 Official Order of Finish**
- Win 7
- Place 5
- Show 1

Abuse of Cancel Delay must be monitored

- Wagers removed from the pools result in less handle, and therefore less money that should be distributed to winners, tracks, and purses
- Wagers not cancelled that become winning wagers dilute pool payouts that should be distributed to legitimate winners

Detection of anomalies over time

- Example: Account rate of return (positive or negative) in relation to expected rate of return to identify variables most highly associated with longer term significant variance from norms
- Example: Trainer, jockey, owner relationships, CRW strategies, etc.
- Separating the legitimate highly informed bettors from those whose advantage may be suspect.



AMS Security Database is created from transactional data and other sources

Data is normalized in a common format with an extremely flexible data structure.

MonitorPlus allows analysts to select, import, manipulate, filter and edit relevant information from this store.

Some Actual Results using Real Data

1. ADW robotic account, unusually high rate of return

Account had a 1.5 rate of return, (normal is $< .8$) over forty consecutive race dates. Identified participants (owners, trainers, jockeys).

2. Cancel Delay - Cancel transactions following end of wagering. Bets placed minutes prior to being cancelled (not a correction of a betting error). Each canceled bet contained horse that did not hit the board.

3. Past Posting – Absent a stop betting command, past post wagering patterns are readily distinguishable from a normal wagering pattern.

4. Win Pool Odds manipulation

Cancel transactions that have a significant impact on the Win odds displayed to the public. Cancels that may significantly affect exacta or daily double probable pays.

5. Collusion - Favorite or near favorite that fails to make the expected effort in a contest. (Dead Contender)

6. Fixed Race

ADW account or guest source with infrequent high level of wagers, very high amount bet, very high rate of return.

7. Insider information - Significant wagering activity based on insider information of a race where the outcome is pre-determined. (Boat Race)

8. Random Pick

Validate random pick wagering function. Those that are flagged by tote as random pick, and those that are member of a subset of all wagers that would be inclusive of all random pick wagers.

- Off Shore Source
- Computer Assisted Wagering
- Wagers transmitted near post time
- Pool Arbitrage
- Highly Informed Bettors

- 6379 Separate Wagers
- Net Wagered \$34,650.00
- Gross Win \$52,721.50
- Profit \$17,856.50
- **Rate of Return - 1.5122**

- 31 consecutive race days
- 280 of 392 races - **71.4% of the races**
- Amount wagered per race: \$2 to \$1,109
- Average wagered per race: \$125
- Average wagered per race day: \$1131

Winning Bets N = 298

pool	winning bets	total bets
win	45	234
place	69	152
show	86	124
exacta	54	1,880
trifecta	38	3,603
superfecta	6	386

Rate of Return by Pool Type

Pool	Net Bet Amount	Gross Win	Net Win	Rate of Return
Win	\$8,243.00	\$11,343.20	\$3,100.20	1.3761
Place	\$2,662.00	\$3,395.90	\$733.90	1.2757
Show	\$1,513.00	\$2,101.50	\$588.50	1.3890
Exacta	\$15,975.00	\$24,765.50	\$8,790.50	1.5503
Trifecta	\$5,745.00	\$10,153.40	\$4,408.40	1.7673
Superfecta	\$727.00	\$962.00	\$235.00	1.3232
Total	\$34,865.00	\$52,721.50	\$17,856.50	1.5122

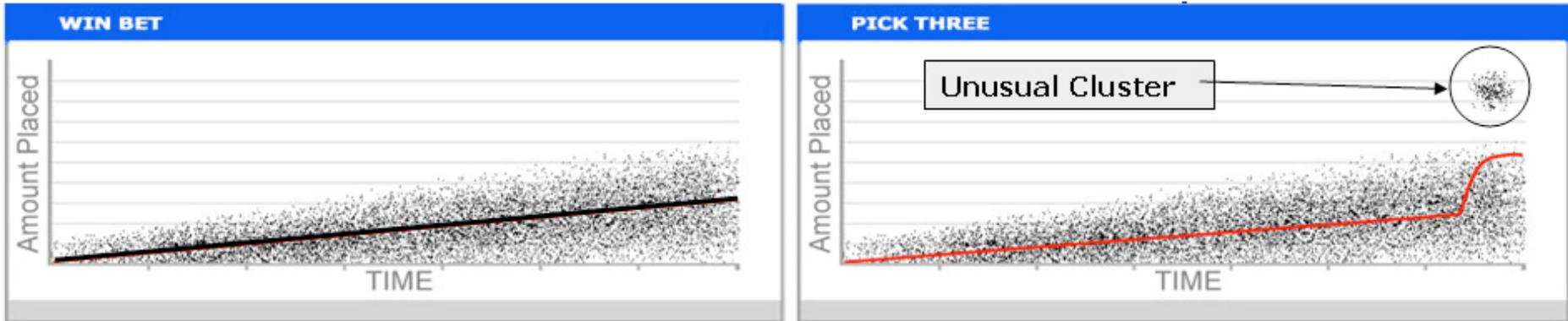
Bet & Win by Pool Type

Pool	Net Bet Amount	% \$ Bet	Net Win	% Net Win
Win	\$8,243.00	23.6%	\$3,100.20	17.4%
Place	\$2,662.00	7.6%	\$733.90	4.1%
Show	\$1,513.00	4.3%	\$588.50	3.3%
Exacta	\$15,975.00	45.8%	\$8,790.50	49.2%
Trifecta	\$5,745.00	16.5%	\$4,408.40	24.7%
Superfecta	\$727.00	2.1%	\$235.00	1.3%
Total	\$34,865.00	100.0%	\$17,856.50	100.0%

IF Source_ROR > 1.2
AND Races_Bet > 100
AND Net_Win > \$5000

THEN High_ROR_Source

- Two Accounts
- Did not wager on same race day
- Two jockeys – same agent – significantly overrepresented in the high ROR wagers



- Example: “Flying under the radar”, clustering algorithm detects Money Laundering “smurfing” attempt by automatically grouping “smart” accounts with multiple small bets on favourites that have returns close to the total placement
- Example: On October 28, 2007 a robotic wagering system inadvertently sent in a series of pick three wagers in \$31.74 denominations, rather than \$1. As a result, the robotic system put \$40,000 worth of wagers into the pool just seconds before the race started. The entire pool, including IRG wagers, was approximately four times the average pick three pool at Calder on a Saturday.
- Example: In the spring of 2001, a robotic wagering system used by a customer of a rebate shop in North Dakota sent in 43 individual \$5,000 win wagers on Monarchos in the Florida Derby at Gulfstream, driving the horse's odds down from 7-2 at post time to 7-5 by the time the results were posted.

The screenshot shows a software interface with a 'Knowledge View' pane on the left and a data table on the right. The table has columns: AccountId, SUMBet, AvgDeposit, AvgWithdrawal, QtyBet, QtyWithdrawal, and QtyDeposit. The data rows are as follows:

AccountId	SUMBet	AvgDeposit	AvgWithdrawal	QtyBet	QtyWithdrawal	QtyDeposit
0.0	0.0	70.76	511.01	0.0	1.0	4.0
1.0	1.0	6.51	0.0	1.0	0.0	1.0
3.0	1.0	0.0	44.48	1.0	2.0	null
4.0	0.0	9.37	24.81	0.0	2.0	2.0
5.0	0.0	67.22	4.00	0.0	1.0	2.0

Automatic Machine Learning

- Discover and explain data patterns
- Automatically creates new rules

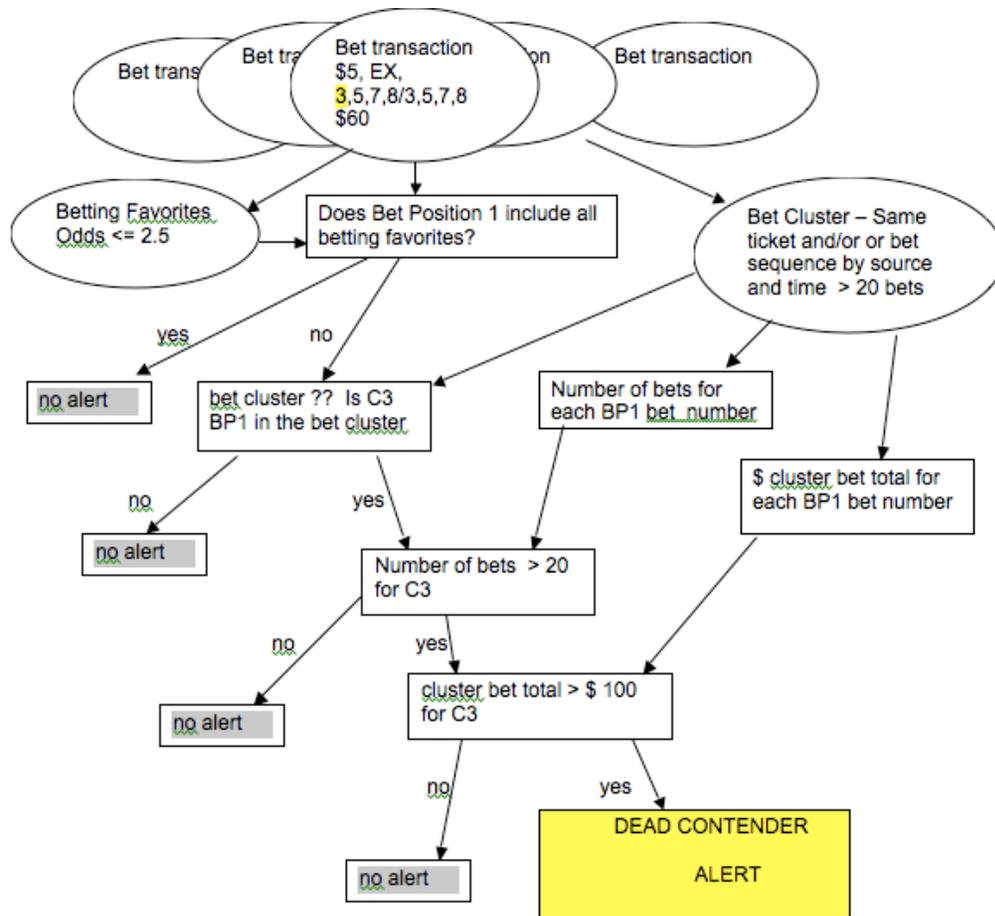
Example: Examining known cases of high bets placed on winning horses that had poor odds, automatically discovers and creates rules for possible doping

The screenshot shows a software interface with a box labeled 'AUTOMATICALLY GENERATED RULES' pointing to a table of rules. To the right is a classification legend.

IF	THEN
PLAYED < 30	RegularAccount
PLAYED > AVERAGE_PLAYED RETURN_RATE < 1.2 RETURN_RATE > 0.7	AND AND THEN MoneyLaundry
TOTAL_BET_OVER_AVG > 1 AVERAGE_PLAYED > 1	AND THEN Possible_MoneyLaundry

Classification Legend:

- ▶ Classification
- ▶ ● RegularAccount
- ▶ ● MoneyLaundry
- ▶ ● Possible_MoneyLaundry



Example: Dead Contender

A logical **contender** – bet down based on past performance, connections, breeding etc.

A horse that a race fixer or insider knows is **“dead”** – will not or cannot give a creditable effort in a race

Bet cluster includes only wagers that do not include the **dead contender**

The screenshot displays the AMS Knowledge View interface. On the left, a tree view shows a hierarchy of folders including 'Fund Transfer Dossier', 'Bank-log(05-08)', 'rule set - 07/21/2008', 'Bank-log(06-08)', 'Post betting dossier', and 'Bets Day1'. The main area shows two rule sets. The first rule set is titled 'Bets Day1' and contains the following logic:

IF HORSERACE_TIME < HISTORIC_RACE.HORSE.BEST_TIME		
	AND	
HORSEJOKEY IN HISTORIC_FINES	THEN	Possible_MilkShake

The second rule set is titled 'rule set' and contains the following logic:

IF BETS_QTY > 5 (AVG(BETS.BETS_QTY))		
	AND	
AMOUNT > AVG(BETS.AMOUNT)	THEN	Possible_Smurfing

On the right, a 'Classification' dropdown menu is shown with the following options:

- Classification
- Smurfing
- Possible MilkShake
- Regular Bet

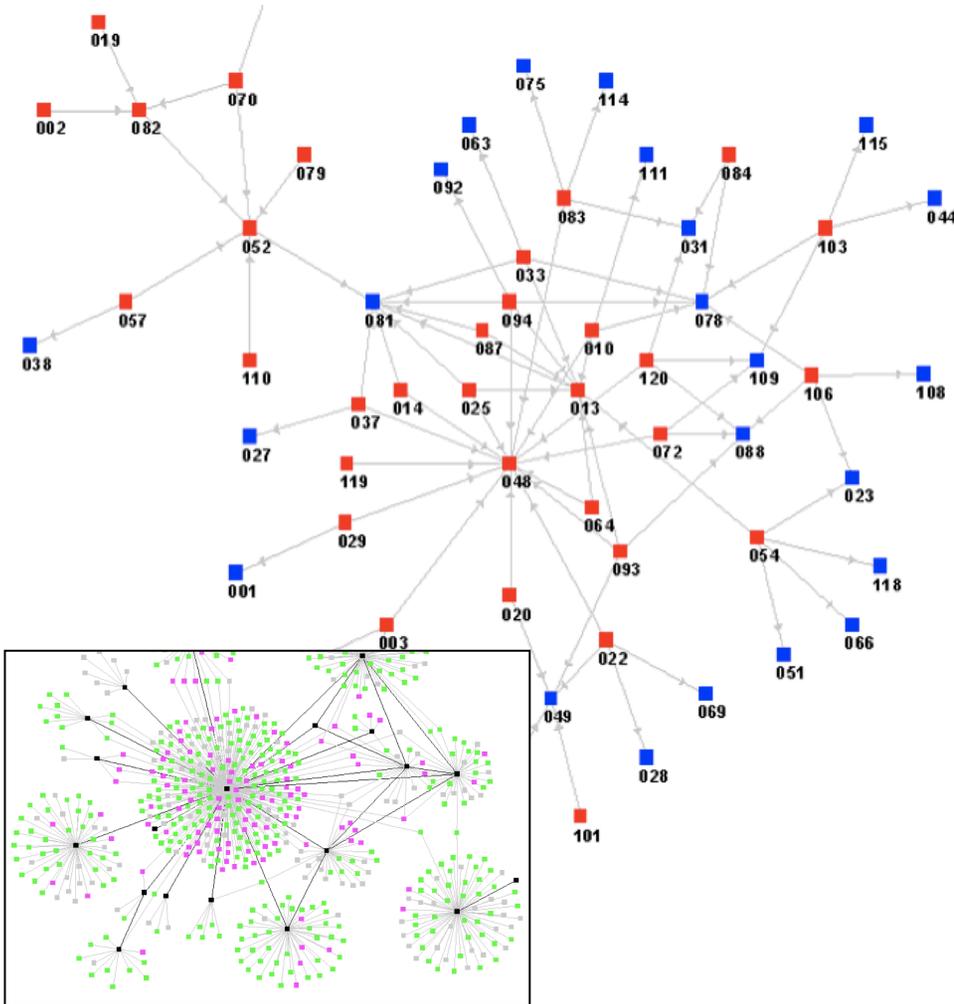
Two callout boxes are present: 'MANUALLY CREATED RULES' points to the rule configuration area, and 'CUSTOMIZABLE ALERT CLASSIFICATIONS' points to the classification dropdown menu.

Rules are human friendly way to express knowledge

- Classify and inspect data
- Expert system technology

Example: Detection of race “fixing” by flagging accounts that contain just a few big bets, but with a high return to the wager

Social Network Analysis (SNA)



Example of Social Relationships:

•Trainer – Trainer

(trainers develop close association, networks)

•Jockey Agent - Jockey

Many races meet one or two jockey agents are dominant and in terms of who gets on best horses.

Jockey agents also hustle horses to make races go, and thus have a lot of influence on which races are used, and which horses are in them

•Trainer – Owner relationships; and Owner – other relationships

Some owners are intimately involved in day to day goings on at the track and constantly exchange info about who is up to what

•Trainer – Vet relationship

Some vets tend to develop less than “disinterested professional” relationship with certain trainers

•Trainer – Employee relationships

•Tie in criminal history, license history, rulings history, etc.

The screenshot displays the AMS software interface. On the left, a 'Knowledge View' pane shows a tree structure of folders and files, including 'Fund Transfer Dossier - 07/21/2008', 'Bank-log(05-08) - 07/21/2008', 'Bank-log(06-08) - 07/21/2008', 'Post betting dossier - 07/21/2008', and 'Bets Day1 - 07/21/2008'. The main window shows a table of alert data with columns: Classification, AccountId, SUMBet, AvgDeposi, AvgWithdr, QtyBet, QtyWithdr, and QtyDeposit. A callout box points to the 'Classification' column, stating: 'EACH ALERT CLASSIFICATION HAS A CUSTOMIZABLE WARNING VALUE'. The table contains 14 rows of data, with various classifications like 'Regular Bet', 'Possible MilkShake', and 'Smurfing'.

Classification	AccountId	SUMBet	AvgDeposi	AvgWithdr	QtyBet	QtyWithdr	QtyDeposit
Regular Bet	6.0	36.0	204.28	268.87	36.0	6.0	7.0
Regular Bet	14.0	34.0	433.32	478.67	34.0	3.0	4.0
Possible MilkShake	48.0	0	7.55	8.6	0	1.0	1.0
Regular Bet	59.0	36.0	308.3	407.38	36.0	4.0	5.0
Regular Bet	64.0	24.0	283.25	402.05	24.0	4.0	5.0
Regular Bet	80.0	32.0	352.18	436.33	32.0	3.0	4.0
Regular Bet	123.0	44.0	237.06	287.37	44.0	5.0	6.0
Smurfing	138.0	41.0	445.67	325.54	41.0	4.0	3.0
Regular Bet	144.0	30.0	431.33	316.83	30.0	4.0	3.0
Smurfing	148.0	36.0	437.33	214.01	36.0	7.0	3.0
Regular Bet	192.0	27.0	343.58	332.58	27.0	4.0	4.0
Smurfing	0.0	0	70.76	511.01	0	1.0	4.0
Smurfing	1.0	1.0	6.51	0	1.0	0	1.0
Regular Bet	3.0	1.0	0	44.48	1.0	2.0	0

Alerts & Incident management

- Automatic alert and escalation when a suspicious event is detected
- Alerts display comprehensive information
- Detailed background information is always available

SERVICE OFFERING:

Independent Monitoring System and Service Bureau

There is an Immediate need for Independent Monitoring



Random pick incident

- Last contender never offered as a choice in a random pick wager

"I find it equally troubling that the CHRB has failed to administer an independent monitoring system of these machines."

-- California Senator Leland Yee

"Scientific Games has a history of scamming consumers," said Senator Leland Yee (D-San Francisco/San Mateo), who earlier this week called on the State Auditor to investigate the latest scandal.

"Californians deserve better and at the very least, the public deserves answers."

In 2002, employees of Autotote, a Scientific Games subsidiary, rigged bets on the Breeders' Cup worth \$3.2 million. The employees later pleaded guilty to fraud.

"I can't understand how the State of California, either through horse racing or the lottery, can contract with a company that has such a history of deceiving the public," said Yee. "

I find it equally troubling that the CHRB has failed to administer an independent monitoring system of these machines. As someone who wants to see horse racing thrive again in California and be the economic engine and job creator it once was, these types of incidents make such a goal unattainable."

- Staffed with parimutuel security and cyber-security experts
- Advanced proprietary artificial intelligence-based MonitorPlus™ software detects potentially inappropriate activity in the transactional stream and security database
- Provides automated alerts
- Proven, tested, powerful
- Turnkey and immediate availability

- Pay-per-use for turnkey service
- No set up fees

- Independent real-time transactional monitoring:
 - Competitive advantage, Increase handle, Fans are demanding Independent monitoring
 - Independent monitoring is a Homeland Security issue
- States are serious about independent monitoring
- AMS is the only approved independent monitoring solution
- AMS offers a real-time turnkey solution that is tested, proven and immediately available

- **Contracts**
- **Nationwide rollout**

Thank you for your attention!

- **Questions?**

Email: IZZY@SOBKOWSKI.COM