



Race Track Industry Program

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Wagering Integrity? Gatekeepers and Monitors

Moderator:

Paul J. Bowlinger, Executive Vice President, Association of Racing Commissioners International

Speakers:

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Isidore Sobkowski, President & CEO, Advanced Monitoring Systems, Inc.

MR. DOUG REED: Good morning everyone. Third and final day of the 35th Annual Symposium on Racing, let me first start by thanking all of you. I want to thank all of the attendees and remind you that it's the paid registrations that actually help give myself, the faculty and staff an operating budget, pays for a number of their salaries, too, so I'm sure they appreciate it. On behalf of the staff and faculty I will thank you because we've got a group that can do what we've got to do because of all of you. So thank you very much, I appreciate it.

This last morning, you're looking pretty good for the wear and tear of the week. It looks like everybody got to bed at a decent time and we're going to get things started here. Again, thank the attendees, I'd like to thank the exhibitors, I'd like to thank the sponsors, the lounge lizards that were out there in the evenings, and we had over 700 people here this week, although the paid attendance is going to be in the high 600s, the reason for that is the economy. A number of people came in for the ROAP meeting and the Model Rules and couldn't stay all week, but the numbers of people here were definitely over 700 while registration, I don't have an official count, but I know it's going to be a high 600. I want to thank our panel sponsor, Canterbury Park, also want to thank — this morning's break, after this, is sponsored by Delaware North Company, Gaming & Entertainment, and the

reception last night, our final reception last night was sponsored by Youbet and United Tote.

One other housekeeping note, there are two microphones here in the aisle. Please use them when we get to the question and answer period. We are recording, but more importantly we want everyone in the audience to hear your question, as a courtesy to them. It's very hard for people in the audience to hear your question if you do it from your chair, so please use the microphones during the Q & A session and identify yourself and the company you're with. Let me go ahead and introduce our moderator, Paul Bowlinger. He's currently the executive vice president of the ARCI, he was former executive director of NAPRA, he has his law degree, but most importantly for this panel, I know Paul was a wagering customer a number of years ago. What I don't know is, did he have any wagering integrity? So please welcome Paul Bowlinger.

MR. PAUL BOWLINGER: Thank you and good morning. I'm Paul Bowlinger, vice president of ARCI. If you're looking at your pamphlets for this, please disregard the photo of me. They didn't mandate that I send in a recent photo, so I took the liberty of sending one in when I was thin. The high-carb, high-protein, high ice cream diet hasn't been working for me, so I thought I would — that's for posterity, you guys are going to forget me in two years, so let's have what's in print in print.

To start, first I thought in addressing people on a Thursday morning at 8:30, what better way can we start than with Shakespeare? Because it was an English literature professor who said, you can segue Shakespeare into anything, so I'd like to start with Hamlet, Act 3, Scene 1, "To be or not to be, that is the question."

Doesn't that sum up our industry? Do we want to survive? When we look at ourselves with the infighting, as I, from my regulatory experience, the infighting amongst sometimes the horsemen, the different breeds, the regulators, the tracks, how we are reluctant to grasp onto new technologies that could promote our product but not only protect it. Sometimes, don't you think that we're trying to commit pari-mutuel suicide? Don't you see that analogy? We're struggling with ourselves. Are we trying to stay alive or are we really kind of watching a death spiral, sometimes, in our industry? But the real genius of that soliloquy of Hamlet is not to be or not to be, whether that is the question. He goes on to say, "To die, to sleep, perchance to dream, aye, there is the rub, for in that sleep what dreams may come?"

Because what Hamlet is really quite simply saying is, what we may discover is scarier than what we already know. I thought that was a perfect segue because two years ago I addressed this panel and I said, I believe, based on my observations, as Doug correctly pointed out, as a 25-year horseplayer, that I thought there was a problem in past-posting, in cancel delay.

Actually my quote, because I looked it up and looked at the transcript and I said, I believe there is something wrong. I think so, but I can't prove it. I may be wrong, but I should be able to prove if I'm wrong.

After I spoke and said what I said, I was greeted by quite a few people at the podium who looked at me as a nattering nabob of negativism and said, Paul, I just think you're wrong.

And I said, I understand that.

Then, last year, we were fortunate or unfortunate enough to have a professional gambler from Keeneland, Mr. Mike Maloney, come in and say, I past-posted for fun.

He basically came and told this audience, it was this easy. I past-posted and I did it to show the industry how easily and how frequently it can be done.

And let me tell you, as a regulator, I took no comfort in the fact that that supported my position, even though I'm sure my wife would probably say, Paul likes being right.

But this gave me no comfort. I'm happy today to be able to have here today two gentlemen that I think can assure you that what is on the other side of that dream and it is not a dream, it is a reality. I think you will find both presentations fascinating in that, we are no longer having to create a panel as sometimes has been a criticism from the movie Casablanca, round up the usual suspects, get them together and let's go over the problems with the pari-mutuel industry. Today we're here to show you real-time solutions to the pari-mutuel pool integrity. We're not here to readdress the problem. We're here to tell you about the solutions to the problems.

With that, I would like to introduce Mr. Izzy Sobkowski. Isidore Sobkowski is the founder of Advanced Monitoring Systems, Inc., a company specifically created to meet the pari-mutuel industry's need for cyber integrity of wagering pools and wagering accounts. Sobkowski was the lead cyber security consultant for the National Thoroughbred Racing Association and director of the NTRA's National Office of Wagering Security. An expert in the area of artificial intelligence, predictive software and cyber security, Sobkowski developed the intelligent computer-aided surveillance system for the New York Stock Exchange. A published author and international speaker, Sobkowski received bachelor's and master's of science degrees in computer science from the City University of New York as well as a professional certification in artificial intelligence from New York University. I would ask you to welcome Izzy Sobkowski.

MR. ISIDORE SOBKOWSKI: Good morning and thank you for having me. Paul, thank you for that very nice introduction.

Before I go into the PowerPoint, I'll just say that I've been with the industry for about five or six years now and I recently had a chance to meet with Pat Wade from New York, he was the fellow who kind of discovered the Pick-6 incident, and I

said to Pat, You know, the guys that you caught are out of jail and we haven't really gotten started yet.

So, there's a lot of talk about wagering integrity but so far I think precious little has been done. I'm very encouraged that New York has actually put a rule out that takes effect as of January 1 requiring independent monitoring, and this presentation will talk about independent transactional monitoring. So Paul just mentioned Mike Maloney; I actually gave a similar presentation to the one I'm about to give now in Kentucky and Mike was in the room as I presented this. And his words were really very strong, the state can increase both the number of horseplayers and wagers on the state's race and the amount of money wagered by taking the lead in integrity issues. One of the things that I've been hearing when I do these talks and have these meetings is that a particular racetrack, a particular jurisdiction, a particular venue does not want to take the lead in integrity or independent monitoring out of fear that it will put their venue at a competitive disadvantage. What we have here on this slide is a whale, someone who wagers in excess of \$10 million a year, stating that wagering integrity is, in fact, not a death spiral but it's a virtuous spiral. It increases handle, it increases activity at a track, it helps the industry, doesn't hurt the industry. And there are those innovative leaders in this industry, adopting this type of technology that will, in fact, help the industry. So this slide talks about integrity from a fan perspective.

The next slide talks about independent monitoring from a homeland perspective. If we take this from the upper left, that's Tom Ridge, Senator Mitch McConnell and Senator Joe Lieberman, among others. So I had a chance to meet Tom Ridge about three years ago when he was still Secretary of Homeland Security and his words to me were very chilling, that from a homeland security perspective, pari-mutuel, the industry is a \$16 billion unregulated bank. And it's vulnerable, not just to money laundering, but to financing terrorist activity. His perspective was, if the industry didn't do something, the federal government needs to step in.

So let's talk about continuous monitoring and continuous auditing. Continuous auditing is looking at transactions, financial transactions, making sure that financial transactions are accurate. Continuous monitoring is a little bit different, we do both. Continuous monitoring looks at transactions and looks for patterns of inappropriate activity. So one is a financial situation, making sure that people who should be getting paid are getting paid. The second one, continuous monitoring is insuring that inappropriate activity is not occurring.

Now, continuous monitoring, continuous auditing are not some oddball, crazy things. This is established methods, companies are using this on a routine and regular basis, people are concerned that the Patriot Act, Foreign Corrupt Practices Act, Sarbanes-Oxley, and for our industry, continuous monitoring and continuous auditing is immediately available. We've spent a lot of time and a lot of money, my company has, producing a system which is immediately available. I want to spend a moment on the words "independent real-time transaction monitoring" because I think there's confusion in the industry as to what it means to actually have racing integrity.

So, independent real-time transaction monitoring. So, my company, AMS, is an independent company. We have no other affiliation with the racing industry. So we have no relationship with tracks, we have no relationship with totes, we have no relationship with other stakeholders in the industry. Our independence is that we provide a service to the industry and only a particular service, we're not influenced by anything else in the industry. We are real-time, which means as an event occurs. We're not looking at something that happened yesterday, although we do forensic analysis and we'll talk about that later in the presentation, the fact that we actually work on a transactional level is unique. Monitoring really means independently examining and verifying each and every transaction in real-time, as it occurs.

If we take a look at New York State, I think, again, they've been a leader in producing a rule which, again, takes effect as of January 1, which calls for an independent real-time transaction monitoring system. I don't know if I want to read this rule, but I think it's readily available, it's there if you'd like to look at it. But the rule is very clear in what it calls for. It calls for an independent system, it calls for a real-time system, it calls for a transactional system, a system which is approved, and we are uniquely approved by the RCI as a transactional system, calls for monitoring, verification, accessibility, notifications and alerts, and a system which is fully extensible.

If you'll look at item number four, a system which is able to perform other requirements deemed appropriate by the board. So as the board looks for new things, the system needs to be flexible enough to go ahead and accommodate those new things. In addition, we've spent time on ADW compliance. We can examine every ADW activity. And the move in the industry for due diligence on ADWs and SPMOs, we look at that as a very good starting point, but only a starting point. When you examine something in a fixed moment in time, maybe once a year, by doing a certification or doing due diligence, that's a great starting point, and Kevin is here from GLI and I think it's wonderful that we're looking at actually certifying tote systems, for example. But you're still looking at it from a fixed point moment in time, what you need to do is, in fact, continuously monitor a system, the transactions that are occurring as wagering is actually occurring. And trust, but verify, so trust your fans, trust the system, most things go by without a problem, most transactions are good, legitimate wagers, fans trying to have a good time and make some money, but as President Reagan said, trust and verify, know your customer, know your licensee.

So our service bureau, the AMS Service Bureau is a turnkey solution. We have immediate compliance with the New York rule, we've been spending a lot of time working with other jurisdictions, California, Kentucky, Oregon, and we are getting good feedback from a number of states. I suppose New York is really the test case on this as well. As a service bureau, we have zero barriers to entry, so we don't require a venue to either invest in hardware or software. We use our hardware, we use our software and we use software as a service; think of it as a

utility. You plug it in and you pay per use, so the more you use it the more you pay, the less you use it the less you pay; you don't like us, you tell us to go away.

The Service Bureau is staffed with pari-mutuel and cyber security experts, one of them is on the panel, its Denny Oelschlager, you'll be hearing from him as well. We have spent a lot of time and a lot of money building a very sophisticated system, it's a proprietary, independent monitoring system, or IMS. We have ongoing research and development, ongoing updates to our risk scenarios, and you'll hear more about our risk scenarios in a moment. The technology is artificial intelligence and data communications and it's very similar to a system that I built many years ago at the New York Stock Exchange to catch insider traders.

The Service Bureau does continuous monitoring of transaction streams, it does continuous auditing of transaction streams and it automatically issues alerts, for example, to a telephone or e-mail, etcetera, so that as something is occurring an alert is issued. The system does audit functionality and financial controls. This is a way to ensure that tax payment, breeders' funds, purse accounts are paid correctly, validate pools; pools are validated to ensure appropriate venues and players are coming in; financial controls, making it easier for reporting for auditors. We look at this system as protecting the state, the horsemen and the fans. Proper payments, detection of any kind of shenanigans, correct reporting of handle, every transaction is monitored and all reports are correct and timely.

The MonitorPlus independent monitoring system is our proprietary technology. It was specifically designed and built for this industry. It's not a wannabe, it's not something that was reused and etcetera, it was designed from the ground up. Paul had mentioned that I had spent two years at the NTRA, and as the head of the National Office of Wagering Security, there was a significant amount of time and effort put into understanding the needs of wagering integrity for this industry. The system that is being described here is, in fact, a response to those needs, to what we discovered with that. Real-time transaction monitoring, continuous auditing, continuous due diligence, not just looking at due diligence as a point in time, and you'll see some examples of past posting, cancel delay, and past posting specifically is an issue that Paul just mentioned a moment ago. I kind of find it interesting that we're talking about a band-aid solution to past posting, of moving the time up by a moment, but I'll get into that in a moment as well. The message here is that MonitorPlus is a very powerful, real-time transactional system for discovery, learning and alerting which is constantly updating and is designed to solve a very real problem in pari-mutuel.

So in the introduction I talked about both real-time detection as well as forensic detection. Real-time detection is that you're looking at every transaction as well as groups and patterns in real-time as well. A real-time engine, this is an example of some of the rules that happen in real-time and this is an example of a cancel delay rule that we would execute. It's been simplified for this presentation but when we say then, cancel delay alert, an alert is issued in real-time. Our system does calculations as well, we have tested them against the RCI model rules and we have two methods of calculation, and this has been an issue with some of

the tote vendors. We do independent calculations or we can tally tote calculations, either or. In other words, as an exactor goes off we can go ahead and independently calculate the payouts for an exactor or we could trust, and I'd like to trust that after it's been verified by Kevin's company, we could trust the tote calculations and just simply tally the results of the calculations. Both ways are pretty effective, and actually method number two is a faster method, especially if we trust the calculations. Again, that's trust, but verify after we've had GLI independently look at it.

Our processes are very straightforward. We get transactions from a variety of sources, the most notable source would be totes, ADWs as well, we apply risk scenarios, and I'll just briefly tell you what a risk scenario is. Cancel delay is one that Denny will talk about, debt contender or others, it's some known problem or some problem that our analysts are working on. We create a scenario and say, under these circumstances, some particular flaw, some particular inaction, some particular terror financing is occurring, let's look at that risk scenario and let's apply it against transactions streams. These risk scenarios are constantly being updated and applied. If we have a good set of risk scenarios, and you'll see some of those, we can apply them against the transaction stream. So it's understanding the industry, reducing some of that understanding down to some computer code and then executing that computer code which we call a risk scenario in real-time. We perform calculations and we generate outputs in the form of an alert. Our architecture, coming from left to right, our input is transactional information, pool information from totes, ADWs, etcetera. Etcetera, by the way, could be a newspaper clipping, it could be a tip from somebody coming in on the telephone system; our information comes in in a variety of ways and we keep this information in what we call dossiers. We do all the things you'd expect us to do, for example, keeping an evidence trail, keeping audit trails, keeping our information in a dossier so if there's ever any need for prosecution we can actually turn over our dossier to a regulator, to whoever our customer is for further action.

Okay, information comes in on the left-hand side, it goes into our runtime engine. Our runtime engine is controlled to ensure that we do the appropriate calculations, we ensure that pools are open to the appropriate customers, our risk scenarios are applied and we do all kinds of configuration settings for a particular race, for a particular race card, for a particular event, for a particular season, etcetera.

Moving over to the right, we also have a forensic engine. Certain things cannot be caught in real-time, when somebody's doing money laundering, for example, it's not always obvious because they may do what we call "smurfing," they may put a transaction at one venue, a transaction at a second venue, a transaction at a third and fourth venue; looking at any particular venue in detail will not give you enough information to say money laundering is going on here, but in the aggregate, if you kind of take it up to 30,000 feet you can in fact see a very clear picture. So forensic monitoring is important as well, but this is forensic monitoring, not partial information, we're looking at a very holistic amount of data to do our analysis.

Further to the right, we build a security database, so we take these transactions coming in, as these transactions do come in we have a database which allows us to look at information not just forensically, but we can also apply this database knowledge in real-time as well. With one of our technologies, which I'll explain later, in a who, what, where database, in a real-time situation you can see something going on, you may not look at it as suspect; however, if there's a certain jockey involved or a certain vet involved or a certain jockey agent involved, in a real-time situation you'll go out to the security database, take a peek at this who, what, where, apply it to real information in real-time and start to issue an alert based on this confluence of data.

Band-aids don't work. I just want to say that the industry has had some pretty significant push-back to the things that we're doing as a company. I've been told, for example, that our system is too simplistic. I've been told that our system is too sophisticated. I've been told that our system works too well and we don't need it. I've been told that our system doesn't work at all and why bother? But what I've really been told over and over is that someone has to pay for this and the industry doesn't want to pay for it. I would say that that's probably the honest objection for the industry. It is a cost, but it's a cost that, if we look at it kind of virtuously, that it increases handle, it increases the industry, that kind of disappears. But I'm kind of shocked at this late stage, maybe I shouldn't be shocked any longer, for example, this integrity issue of moving bet time up by a minute, it solves no problem. If you move stop-betting up by a minute, all you're doing in terms of past posting is you're giving, in fact, folks that are doing robotic wagering an advantage because they know exactly when stop-betting occurs. You're frustrating your fans and at the end of the day you're simply moving a problem a minute away. We'll see that in very real ways in cancel delay, and I'm going to call up Denny to go ahead and talk about cancel delay. Cancel delay, in fact, depends on past posting so I hope you'll see that tie-in. So, Denny, do you want to come up?

MR. DENNY OELSCHLAGER: Thank you, Izzy. It's been my privilege to work with the MonitorPlus platform for nearly two years already, and that time just went by very quickly. I started working with the platform in its early development stages and during the early weeks and months, my primary purpose was to do everything I possibly could to make it not work. I had the developers sending little text notes back to me saying, Well, what in the hell would you do that for?

We continued to work with it; once we started to get access to some good test data and then some real data, we were able to develop some scenarios that I think have, perhaps, some relevance today. One of the test data sets that we were able to work with from a jurisdiction involved several racing days, racing at several venues on those days, involved over 800 races, 5,500-plus mutuel pools, and during the course of those races and mutuel pools there was a total of over 4,000 cancelled transactions. When we filtered the cancelled transactions down through a data-set and a scenario, we identified 10 transactions in which the cancel occurred after the last wagering had occurred on that particular race. We just simply refer to

that as max bet time. When we examined those more carefully we saw that most of those probably occurred in the context of what cancel delay was designed for and that was to let a teller or a bettor out from a mistaken bet that occurred at the last second, but there were three transactions that particularly caught our attention because the ticket itself had been purchased a significant amount of time before the cancelled transaction occurred. In the case of race three, there were actually two transactions for that race and the bet time was three minutes and thirty-one seconds, three minutes and forty-one seconds before the cancel occurred. In the case of race 55, there was a single transaction, the bet time occurred two minutes and forty-five seconds before the cancel.

We set our criteria to develop a scenario for bet transaction time that occurred more than 30 seconds before the cancel, and by that basis we filtered out and identified the three transactions that we were interested in with this particular and fairly simple rule. The bet string variable for these suspect bet transactions in race three consisted of five groups of tri boxes, an exacta box and again in race three an exacta wheel and a win ticket, total of seven bets. If you look at those you might notice something that's common to every leg of those particular bets. The official order finish for the race was 2-3-1, and if you had a chance to look carefully at the legs of the previous slide you'd see that if seven was not on the board, that was the key in every one of those bets. There was not a single one of those bets that was good if the seven was not good. Every possible leg requires the seven to be in one of the first three positions to have even a single winning ticket. The suspect transaction in race 55 involved only a single bet transaction, a five-position box in each leg of a trifecta, a total of 60 bets. The official order of finish for this was 7-5-1 and again, pretty straightforward, if seven is not in that group, none of those trifecta boxes are good. It just so happens one has the same condition, if one is not in the top three finishers none of those are good so if either seven or one are not performing as expected at the beginning of the race, a ticket laying in a machine where a person's in a position where they observe the beginning of the race and that particular contestant doesn't come out of the gate promptly can make a decision to cancel that ticket, and it's depending on whatever the cancel delay conditions are at that particular racetrack.

You might mention that I've been in the steward's stand, too, and the start of the race, or the stop-betting command, under the best of circumstances, probably adds another half or three-quarters of a second to whatever the cancel delay is in a lot of cases and the people at the machine, if the stop-betting command is not executed for some reason promptly, they're going to be aware of that.

Abuse of cancel delay must be monitored, regardless of when stop-wagering occurs. First of all, the bet is removed from the pool and, as I indicated, in three transactions we cancelled somewhere in the neighborhood of 100 bets, because that money is removed from the pool and everybody that should participate in that wagering is cheated by the fact that it's removed. But more significantly on the fraud side is the ones that are allowed to continue. People aren't doing this just for the sake of cancelling it. If they are doing it, they're doing it occasionally with

some success and when they do, they are diluting the payouts, and in the case of the exotics perhaps pretty substantially, to the rightful winners in the wagering pools.

Another thing we did then was more of a forensic evaluation, detection of anomalies over time, and here we really have a situation where the evidence of a suspicious situation is not real apparent in a given race, even in a given day, or maybe even in a given short set of days. There's a lot of variation in settlements and pool distributions that can occur over a few days and it isn't until you can take a much longer look that you can detect some interesting patterns.

Izzy, did you want to say something about the architecture?

All right, well, the architecture of the MonitorPlus platform is, of course, to do things first in real-time and while we are doing monitoring in real-time we are passing transactions to a wagering security database. In that environment, we are going to warehouse transactions for an extremely long period of time, we haven't determined what that would be, but something in the neighborhood of three years, which is sort of consistent with a lot of the mentality about how long tote data should be maintained, and I think that's probably in the ballpark of what we're looking at. We looked at a number of scenarios involving the data that we had access to, and let me just say we had access to data from two different jurisdictions in terms of real-time data that we were interested in. We had very, very large files in which we processed in excess of 18 million transactions. So we've tested the platform in terms of efficiency when we're processing very large groups of data over long periods of time.

We did a forensic analysis of a group of wagers, the wagers were found to come from an offshore source, definitely involved computer-assisted wagering, the wagers were transmitted in batches very near post time. It was very clear that because of the pattern of the wagers there was an element of pool arbitrage going on. There would be a certain amount bet in an exacta pool, a lesser amount on the same or different contestants in an exacta pool, but they covered about all of the pools within a given race. We identified 6,379 separate wagers that we were interested in, from a source the net wagering was \$34,000 plus, the gross win was \$52,000 plus, profit of \$17,000, a rate of return on this investment strategy of 1.51.

I just want to mention that it's great to be successful, regardless of what your strategy is, but I've heard many executives in the racing business talk about some of the computer wagering folks and they talk about that they operate on very narrow margins and they're really making their money on the rebates. This is evidence in a fairly medium-sized venue that there are some pretty staggering rates of return out there. This wagering occurred over 37 consecutive race days at one venue, they wagered on 71 percent of the races, the wagers per race ranged from \$2 to \$1,000-plus, the average wager per race was \$125, the average wager per day was \$1,131. The distribution of the bets, the winning bets and the total bets. You can see that most of the bets occurred in the trifecta pool, exacta pools,

but they were in all the pools, the win-place-show and even the superfecta. There's the rate of return by pool type, you can see that each of those pools, they had a very, very significant rate of return, the highest rate of return being in the trifecta pool and the exacta pool, but in every one of those pools there was a very significant net positive return on wagering.

There's the distribution of the bets and the net win by pool, and again, 45 percent of the betting was in the exacta pool, about 50 percent of the wins, 16 percent of the betting was in the trifecta pool, about 24 percent of the net wins, but again, in every pool significant profitability. Pretty simple rule scenario within the platform, if the source had a rate of return of greater than 1.2, there was a significant amount of wagering, in this case the races bet was greater than 100, and this was a significant activity that really impacted over a period of time the net win was greater than 5,000.

For the entire race meet, only this wagering source would have been identified with those rules. It involved two accounts, at least it came to us identified as two accounts, but very interestingly, they did not wager on the same race day. The speculation that I would have is well, is it just one person? Actually, the wagering patterns were a little different, but somehow they were obviously collaborating. Either the wagering access provider was protecting them from each other, so they weren't going into the same pools on the same day, or they were testing different systems in sort of a friendly, competitive sort of way, does my system work better than your system? You can speculate about that as well as I do.

Fortunately, we were able to get some performance data for that race meet and we tied these results back to trainers, owners, jockeys and several other factors from the race-related data and it just occurs that we noticed that two jockeys were very, very significantly overrepresented in this data. One of them, a near-leading jockey, and another one in the top 10 but not anywhere near a leading jockey. And by the way, they both had the same agent, for whatever that's worth. Izzy?

MR. SOBKOWSKI: Thank you, Denny. Denny does the hard work, trying to make the system work.

I'll just spend a couple moments on the underlying technology that we use for this. Clustering is always really kind of my favorite, I always think of it as, back to the Sesame Street days, some of these things are like each other, some of these things are kind of the same. You don't always know what you're looking for, but in a clustering technology, you just look at a lot of data and try to discover something, not dissimilar from a doctor finding a group of cells and saying is it cancerous or not, let's go ahead and explore it?

So, on the left-hand side we would see a normal situation. On the right-hand side we see something which is an anomaly, and we start to examine that anomaly, and this technology is particularly useful; again, when you're not exactly sure what

you're looking for, you've got some suspicion and it's a very good starting point. Over on that right-hand side, you could take the transactions in that unusual cluster and apply automatic machine learning. It's a data mining process which we've modified. These are well-established algorithms, but we've gone ahead and modified them to in fact create, automatically, rules, and those rules that you saw before that Denny was talking about, some of those rules are created manually by Denny and others, some of those rules are created automatically, and here we have an example of a machine automatically creating rules which are understandable. When we have those rules, the system will also go ahead and automatically create a decision tree, so a very graphical way of understanding a particular problem, in this case it's a scenario that Denny came up with for a dead contender, a horse that should have been winning and has been held back by a jockey. The automatic rules can be modified; we use expert system technologies, we do things like forward chaining and backward chaining and reasoning with uncertainty and hypothetical reasoning uncertainty factors and just all kinds of good technology, but at the end of the day, it allows somebody who is knowledgeable in pari-mutuel to impose knowledge on a system which can then be used objectively and real-time and forensically.

The last technology was the one that I'm really the most proud of, social network analysis, that's the who, what, where. That's what jockey knows what trainer, what vet knows what jockey agent, what event occurred when and is there any criminal history involved in this? So we can take these four technologies from beginning to end, clustering, I don't know what I'm looking for, to machine learning, let me go ahead and have the system create some rules for me, use the expert system technology to modify the rules and then use the social network analysis to find out who, what, where, when and why.

So from some event to full data analysis and of course, sometimes we're wrong. So we do issue alerts when we find something, but this system is a learning system and that's where feedback comes in. So any artificial intelligence system that is not controlled by feedback is basically a Coke machine, I mean, it just degrades. You always have the expert involved, you always have human involvement, that's where folks like Denny and others come in, where you say, well, look, the alert went off but it wasn't a good alert. There's nothing worse than an alarm that keeps on going off that's wrong because then you just turn the alarm off. So this feedback mechanism is a way of always honing the system, educating the system, training the system, the system is always getting smarter so that your false positives are reduced to an absolute minimum and alerts get listened to.

I'll spend a couple of slides, but I'll go through it quickly, on the physical data center, it's a secure data center, our technicians are certified and trained, the environment is a very good environment, good HVAC, air is refreshed, uninterrupted power sources so the system won't just go down in the middle of a race. System security occurs on three different levels, on a physical level, on the data center and on the customer environment and then just what our service offering actually is. So there's an immediate need for this, we've seen this in venue after venue; this slide tends to trouble the folks in California except I will say that

the folks in California are being very proactive. My expectation is that we'll see a rule coming out of California; Richard Shapiro just went ahead last month and stated that publicly they expect to have a rule very similar to New York in California shortly and I expect that in 45 days or thereabouts.

Our Service Bureau is staffed with experts in pari-mutuel as well as cyber security, we have our own technology, we provide automatic alerts, we've gone through 20 months of industry testing, we're proven, powerful and offer a turnkey solution. The cost is a pay-per-use for a turnkey service, plug it in, it goes and there's no setup fees. So there's no hurdle that a venue has to — again, you don't have to pay us to set it up and you don't have to buy your own hardware or software, just use it as you need it.

As a summary, it's an independent, real-time transaction monitoring system. If you remember, those were my opening words. Independent, real-time, transactional and monitoring, and we look at this not as, Oh my God, if we're the first to go ahead and implement it that we're at a competitive disadvantage; quite the contrary, it's a competitive advantage, increasing handle, fans are demanding it, regulators are demanding it, it's a homeland security issue as we see it, states are becoming increasingly serious about independent monitoring, we are the only approved monitoring system, we are immediately available as a turnkey solution. The next steps that we see are contracts and industry, nationwide rollout, and we'll be here for questions and if you have any questions, that's my e-mail please feel free to go ahead and send an e-mail at your convenience.

Thank you very much for your attention, I'll be here later for questions and Paul, thank you very much.

MR. BOWLINGER: Thank you, Izzy. We'll have Q & A after Kevin gets done, so please don't think that you're going to be shorted on time to ask some questions. I hope that Izzy has presented to you that the dream I spoke of in Hamlet's soliloquy, I think he's answered by saying we no longer have to dream about what's on the other side of an unmonitored pari-mutuel pool. We now know what the reality is and we have the ability to actually do that. The second part in that soliloquy is, "Whether tis nobler in mind to suffer the slings and arrows of outrageous fortune," and what has bothered me is that since 2002, the Pick-6 scandal, it was the topic du jour, it was the topic du everything. Now granted, there have been other issues that have taken our time, medication issues, the tragic Eight Belles, Barbaro, the steroid issues, they've all come into place and they've diverted our attention and rightfully so in many ways, but I think our betting public is fed up with taking the slings and arrows of outrageous fortune. And I think Mr. Mullally, and if you've been reading the trades lately, there have been some very pointed remarks at the integrity of our pari-mutuel pools, and I think some of the things that Kevin is going to say will dovetail nicely with what Izzy has already presented, so I would introduce Kevin.

I think you all know who GLI is. Kevin Mullally serves as GLI's primary liaison to elected officials at the state and federal level, regulatory agencies, key

organizations devoted to developing gaming and casino policy as well as senior-level executives of gaming equipment and manufacturing companies.

Mr. Mullally began his career in the gaming industry as deputy director of the Missouri Gaming Commission for seven years and subsequently as a director of MGC for six years. He also served as the vice president of the North American Gaming Regulatory Association, NAGRA, and chairman of the NAGRA policy committee, a member of the National Center for Responsible Gaming board of directors and chairman of the Regulators Internet Gambling Task Force. Prior to his service with NGC, Mullally was chief of staff for Senator Harry Wiggins for eight years. Mullally is a frequent teacher, author and speaker on administrative and business law topics, public policy development, regulatory issues and problem gambling. So, with that, Kevin Mullally.

MR. KEVIN MULLALLY: Thanks, Paul. It's a pleasure to be here. This is my third consecutive conference; I came here two years ago to try to learn a little bit more about why the racing industry had managed to be the only component of the gaming industry that had not implemented any serious oversight of its technology.

As Paul mentioned, I spent most of my career as a public official involved in a variety of policy issues, the last thirteen years devoted to gaming, and when I was a regulator, one of my most important mentors and advisors was Malcolm Sparrow who teaches risk control at the Kennedy School of Government at Harvard, and Malcolm's basic precept of regulation, with regard to what regulators do is, he says that regulators pick important problems and they solve them. So two years ago I came to this conference trying to figure out a little bit more about this problem and why it hadn't been addressed. I discovered that the regulators and the industry, I believe, recognized that it had a problem and there was very little direction as to how to solve it. So a year ago we came and we had a booth at the show and began talking to people about offering solutions. I'm here this year to tell you that I believe we're on the cusp. We're barely on the cusp, but I think we are on the cusp of providing some solutions to many of the issues that have been discussed over the past number of years.

First I'd like to talk about the importance of our component of this solution, and it is a multi-component solution, and that's the front-end testing of the technology used to govern the wagering system. I think that testing is sometimes misunderstood, I think a lot of people look at it in a very simplistic way thinking that, well, we'll just go out and get somebody to certify this software and wave this certificate around and everything will be fine. It's a little more dynamic than that. Software isn't like buying an automobile, you don't take it in and get it inspected, put a little sticker on it saying everything's fine, because software by its very nature is very dynamic. Anybody who's ever turned on a PC and noticed Microsoft Windows saying your updates are being downloaded right now realizes that software isn't static, it constantly changes, so it's really a relationship between the regulator and a technology expert. There are a number of facets to that and I think that the background as to why testing it is important is to ensure, one, that the game is fair. Really, I think if you want to break it down to its very simplest

concept, I think what every wagerer wants is to feel like they all have, the wagering system is equal for everyone, that the rules are applied fairly across the board. And that means that the system has to have not only integrity in the way it administers the rules of wagering, but it has to have integrity in its reliability, in its security.

I think that the non-wagering public expects the security of the public assets. We have to remember that these are all government-sanctioned franchises. Not everybody can go out and start a wagering operation. You have to be authorized and licensed and given the permission of various government authorities. I think that there's an expectation that this be efficient. You're using public resources to some extent and I think that to the extent that as someone who is being regulated, they want it to be done efficiently. I think that there needs to be some expectation that the people that are doing it are qualified, that you're using good scientific basis for what you're doing.

Finally, I think, and I'll discuss this throughout the presentation, that testing is an absolutely necessary prerequisite to doing an effective forensic investigation should an incident occur. CSI, I don't know how many different CSIs they have right now, but it's one of the more popular shows on television. They use criminal technology there, we use computer technology in our business, but you can't really do a forensic unless you've tested the system upfront. One of the hurdles we had to get over is regulators are saying, Yeah, we think we need to do this, but how do we do it?

Well, first the regulatory authority needs to establish standards. The good news is that I think close to 80 percent, if not more, of the jurisdictions here in the U.S. have or are in the process of establishing standards. Many of them have been tremendously helped by the adoption, last year I believe, of the RCI technical standards that were a subject of a good two years of hard work and investigation. Then there needs to be a designation of a testing laboratory. There really have been four ways that has been done. Many of the racino states have just simply used the testing laboratory that they use for their slot machine and casino equipment. Some have set minimum qualifications for testing laboratories in their rules and allowed the tote providers to go out and choose one. Others have done RFP processes where they put out a request for a proposal and people respond to that and there's a competitive process to select one. Then, a very few jurisdictions are exploring licensing, where they would actually license test labs, and again, the tote provider would choose who they want to use.

The next step is to require certification to those standards. Some states have relied on existing rules; Iowa is one of those, Texas is one of those. Other states are considering new rules that would require certification. Not only is it important to certify the backend software and systems in the laboratory, but we also need to provide methods to certify that it's been installed properly in the field and configured properly, and then provide some process to account for modifications. As I explained, the value of having a technology expert isn't just to provide you a certificate, it's to have a dynamic method for governments to have

access to somebody who has in-depth knowledge about the tote system and how it works and to give the regulator ways to verify that the technology complies with their statutes and regulations, to give them advance notice of new technology.

At any given day, somewhere in the world there's somewhere between 15 and 20 GLI engineers meeting with various technology developers about new products that won't be introduced for another year, eighteen months, even two years. As we find out about these things, in our meetings with our regulatory clients, we let them know about new technology solutions that may be arriving at their door that may require regulatory modifications or policy decisions so that they can begin thinking about those things ahead of time, that they can talk to somebody independently of a vendor, about regulatory issues related to the implementation of that technology, and it actually speeds the process, shortens the process for the technology to come to the marketplace.

Forensic services, so that when there is an incident or a customer complaint, you have somebody that can do an investigation and try to track down what the problem was. To provide expert testimony to legislative oversight committees, to interact with state auditors who have taken an increasing interest in tote systems and the betting pools, and in any type of litigation that may emerge as a result. Also to provide technical training for regulators to that, you know, the lab is important to call, but we can't be all places at all times and certainly the regulator is going to have the day-to-day oversight, and to the extent that we can raise their technological awareness, the more effective they're going to be on a daily basis and the more help they're going to be able to provide to the operators and to the tote operators.

The current projects that we are working on right now, we won the RFB for the Texas Racing Commission's tote system certification project. The test plan for that, they have three tote companies in Texas, AmTote, United Tote and Scientific Games are all in Texas, the test plan was completed in November of this year. We just completed the on-site testing, the laboratory testing for United Tote and the Scientific Games laboratory testing is underway as we speak, with AmTote's laboratory testing scheduled for January of next year. The phase three on-site testing for the racing facilities is scheduled for December and January, may run into February of this year. We also ran, concurrent with the Texas laboratory testing, all the tests that were applicable to the Iowa systems. To, again, build some efficiency so that tote companies or states, in this case, Texas is funding the testing for their project, the testing for the Iowa project is being shared by the tracks and the tote companies. Iowa is gaining tremendous efficiencies to the extent that the testing for Iowa is the same in Texas, those tests were run concurrently in Texas so no one had to pay twice. So what we'll see is the more states who are able to adopt similar guidelines and conduct their testing in similar time periods will be able to leverage those tests and spread the costs among multiple jurisdictions, thus creating some tremendous efficiencies for the industry.

The development of the test plan was an extensive process. It really began, I would say, in August of this year and it involves our engineers sitting down and

meeting with the tote operators, going over what we would expect, the areas that we would test and developing a test script. So over time as jurisdictions develop new technical standards, what we do is just add on to that test script. So if, for instance, Indiana has a unique requirement because of something in their statute, that would just be another item added to the test script and the engineer wouldn't even necessarily know, the report writer would know, but the engineer wouldn't necessarily know that that was for Indiana, they would just know that that's a functionality that they need to test.

So when we go through, as jurisdictions are added on to the test script, our test library, tote companies can say, Okay, I want to submit for these eight jurisdictions, and our system will generate a test script and that engineer can run those tests for those eight jurisdictions and produce eight certification letters through one round of testing. We provide the full test script to the regulators; the outline is provided to the tote operators, it basically tells them what we're going to test but not how we're going to test it.

Phase two, a sample of some of the things that we look at in the laboratory are, we're going to go through and make sure that all the betting types, one, that the wager is actually available. We saw an example recently where a bettor placed a wager and actually had zero chance of winning because one of the options of the win wasn't in the pool. So we go through and verify that the system is capable of generating good wagers for all of them and that the calculations are correct.

We also look at real-life unusual situations that can occur in a race, things like scratches and dead heats and coupling of entries, cancelled races, odds-on betting, things like that that can happen during a race meet and make sure that the system can account for them. Some of the things that we look at in the end-of-day processing, this is a scenario where we don't expect to see a lot of problems in the testing but it's important for the engineers to understand the process to ensure the integrity and the accuracy of the information that's being presented to the public and to the regulator. It's also crucial to have that third party, really nuts and bolts knowledge of how the system works so that in the event of a forensic investigation we can quickly and efficiently track down where the problem was, how it occurred, how it might be remedied, and to what extent it might have occurred in other areas that weren't discovered.

Our general functionality testing, we're trying to mitigate the risk of errors in the manipulation of the data and to ensure that the end-user, that being the tote operator and the regulator when I say end-user, has sufficient tools to follow all the transactions on a day-to-day, race-by-race basis and to make sure that they have the tools that they need to perform an analysis when the need arises to provide a quick and accurate response to inquiries. They need to be able to find out, when something goes awry, what are we losing, what data are we losing? How long did the problem last? And what is the likely origin of the error?

In our communication testing what we're looking for is to ensure that all the places in the gaming environment that could potentially include things like remote

tracks and people betting over the Internet, that they're properly communicating data and that the data is being collected and stored by the host.

In order to properly test ITSP communication testing, we need cooperation from two or more vendors. This is something that was a little surprising in that, in the course of our testing we've been able to discover that ITSP communication is not regularly tested by the industry, it requires two competitors to cooperate in order to do it, it has been rarely done; in fact, when I say rarely, we think maybe once and not recently. Currently there is no way for the industry to test it on a continual basis. The arguments that we often hear from the industry is that errors in race reporting will be caught by customers because if you have a printed ticket and if it didn't get communicated and it's not in the pool then the customer's going to complain. Well, losing customers don't complain. If I have a losing ticket I'm not going to go ask whether my data was actually communicated to the host. Since most wagers lose, it's very difficult for us to know with any reliability how effective our testing of the communication links are.

That last bullet point, what we're trying to do is subject the equipment to the everyday environment, the wagering environment. It goes to reliability; I mean, customers spill drinks on machines, customers tamper with machines, they stick foreign objects into them, and so we'll basically, as Denny tried to break Izzy's system, we try to break the tote system by doing stuff that customers would normally do to determine how reliable it is and, again, how's it going to react in these situations so that we can help resolve any customer disputes.

Some additional testing areas, many of these things go to a very high level network security functionality that we're performing for the Texas Racing Commission that was a part of their RFP. This is not what you would see in what I call a very low level detailed network security audit, just because they're incredibly expensive and the Texas proposal didn't have sufficient funding to do that low level. We have that capability, we have a partnership with Foundstone, which is a division of McAfee, which is one of the leading IT security providers in the world, that does those types of audits. This is using some of our experienced IT staff to do what we call high level network security functionality.

Phase three on-site testing, this is where we take what we did in the lab and try to verify that everything in a similar environment is created in field. Is the same software being put on the system? Is the terminal software that was tested against the system the same as it was in the field? We use common gaming industry software verification techniques in order to do this. We train regulators how to be able to do it, in the case of patron disputes or in the case of just normal audit capabilities, and this really would, for the first time, bring the pari-mutuel industry in line with the rest of the gaming industry which I should note, includes things like church bingos. Churches that have electronic bingo equipment have their equipment tested and verified in the field.

These are what I call the "elephant in the room" issues. I think probably the most frequent question I get is, how are we going to pay for this? The industry is

struggling, every aspect of the industry is struggling, if it's any consolation, since GLI got involved in this issue about two years ago, we're like the rest of you, we're losing money. So I feel like I'm part of the club.

We've seen several ways at this point; as I noted, the Texas response to this issue resulted in part, at least, from an audit finding by the Texas state auditor's office. It's one of the few audits I've ever seen, and for 13 years when I ran the Missouri Gaming Commission we were the only agency in state government that was audited every single year by the state auditor, so I'm very familiar with audit reports; I've never seen an audit report where they actually praised the agency for something. They usually just criticize you, but they actually praised the Texas Racing Commission for the outstanding job they did in auditing the tote systems, but their criticism was that they did very little to oversee the data processing operation to verify that the data that they were auditing was valid. In fact, the only two state auditors that have looked at this issue, Texas and Arizona, both had findings that the regulatory agency had insufficient oversight over the tote system. So Texas was able to go to the legislature and get an appropriation to pay for this. In Iowa, they used the model that many electronic gaming regulatory jurisdictions use in that they put that on a cost of the operator and the equipment manufacturer as part of their responsibility to comply with the regulatory environment is to verify that their system meets the technical standards established by the jurisdiction. So in Iowa it is a cost being borne by the industry.

Other jurisdictions are looking at a public/private partnership where perhaps it's the responsibility of the industry to provide the initial certification and the government would fund the ongoing updates and oversight. The leverage that we're gaining here, as more jurisdictions participate, is the ability of jurisdictional transfers where multiple jurisdictions can benefit from one round of testing and spread the cost among multiple jurisdictions. Now, the limitation on that is that the greater the disparity in time that the regulatory jurisdictions adopt these requirements, the more difficult it is to transfer those test results. As we noted, software is dynamic, so you can't really transfer results from software that was tested two years ago if it has undergone massive changes during that two-year period. Now, as we gain more jurisdictions, there's almost constant testing going on, so when that happens, as happens in the commercial casino industry, virtually all results are transferrable because you constantly have new testing going on.

I think the biggest elephant in the room is the inability, so far it seems, for the industry and the regulators to come to some common understanding of the role of economics in this. I think it's an inability to distinguish between what is due diligence and what is compliance. I think that oftentimes the industry has looked at due diligence efforts as regulation and been unable to see the value in third-party independent oversight. I don't think that we've come to a point, given the incidents we know have occurred, you know, past posting is the most frequently mentioned, but we've also had system failures, we've had incidents where bettors were making wagers that were not able to be won, we've had incidents of data manipulation and violations of system security. I don't think that saying we've looked at our own system and it's okay, is going to be sufficient to overcome the suspicions created by

that. The largest sports news organization in the world, ESPN, on Monday, their horseracing columnist wrote a column about Dear Santa, the things that he wants for Christmas. Number one on his list, for starters, please give me a sport in which I can have greater confidence in its integrity. Would it be too much to ask for an updated totalizator system, one that positively eliminates any betting after a horse race begins or prevents any tampering whatsoever with the wagering pools? Our tote system, compared with other technology-driven business is like listening to an 8-track tape player while everyone else is listening to an iPod.

Frankly, I think the criticism is a little harsh. I don't think that these systems are broken, I think they fundamentally work. The thing that is somewhat surprising is the inability to recognize that the public would feel more assured, feel more confident, the regulator would be in a better position and the industry would be in a better position. That when an anomaly occurs there's some third-party independent expert in front of the microphone explaining what happened and what has been done to investigate and correct it, rather than having the industry at the microphone explaining that which is what has occurred in most of these incidents.

So I'm happy to report that between the monitoring solutions that are being proposed and the testing that is currently being conducted that we have the answer to this. We're on the cusp, but we're still a long ways away. If this stops at what is happening today; if the Texas project ends and the Iowa project ends and we don't move forward after that, within a couple of years we're going to be right back where we were.

It's also important to understand how testing and monitoring work together. It's critical, as Izzy noted, that in order for people to have real confidence in the monitoring there needs to be some independent functionality testing of the tote system upfront. Testing doesn't do any good, testing only looks at certain risk areas, its risk mitigation, it's not risk prevention. So you can't discover every error in software, which is why Microsoft sends you an update all the time. Testing won't find every error, it's going to mitigate the risk of errors and it's going to provide a baseline understanding of the functionality of the tote system. So monitoring is important to make sure that anything that might have been missed during testing is discovered and any unforeseen manipulation of the system can be discovered. When monitoring discovers a problem, testing is important because it provided that baseline in order to do a forensic investigation to be able to discover when a problem occurred and how it occurred and what we can do to resolve it and how extensive the problem is.

With that I conclude my remarks and I'll look forward to answering any questions that you might have. Thank you very much.

MR. BOWLINGER: Thank you, Kevin and Izzy. That's a lot of grist to chew on and I believe the presentations are very straightforward but there was a lot of material so I'm expecting there will be some questions. If you would, please step up to the microphone and state your name and who you represent.

MR. SCOTT FINLEY: Scott Finley, Racing UK. Kevin, in your testing in Texas, what were the three or four most common problems you uncovered with the tote systems, and then what has been the time taken to address those problems by the tote vendor, and then do you sort of recertify after corrections have been made?

MR. MULLALLY: Very good question, unfortunately, a bit premature. The testing is still going on. We just completed about the middle phase, about two-thirds of the way through United Tote, we're just beginning with Scientific Games, haven't started AmTote. The Texas Racing Commission is our client, so they will be the first to know and they will provide the rules for how that information is distributed, but excellent question and hopefully sometime this spring we'll be able to know the answers to those.

I want to reiterate, I certainly don't want my remarks to be interpreted that these tote systems are fundamentally broken. I don't think that's the case. I think there's plenty of evidence that they work and that they're reliable and that most of the functionality is very good, but I think that we have to have somebody other than the company that understands how they work and to be able to verify that.

MR. CHRIS SCHERF: I'm Chris Scherf and I'm with the TRA. Yesterday I was directed by our board of directors to send a letter to RCI expressing our concern over how AMS is being rolled out. I've seen, over the years, a number of PowerPoint presentations but have not really seen it, and I'm not aware who's seen it and what it does. I think a key element, I won't belabor all the points I will make in that letter, is, as Izzy said, it's transactional-based and our wagering network is not transactional-based, it's store-and-send ITSP. So, a lot of the claims that it can make about it can monitor all the wagering, it's only going to monitor, for instance, in New York if it's up and going by January 1, is what happens at NYRA or with the NYRA-One accounts or with the New York OTBs. It has no way that I can possibly conceive of knowing whether there's past posting in Australia, the Caribbean, New Orleans, anywhere like that. I think it vastly overpromises, and the racetracks are very concerned over the fact that there's only one approved independent monitor. This is a great pricing model for the provider; for those that are eventually going to pay for it, it's fraught with danger.

I guess the final point I would make because we spend a lot of time on it, is cancel delay. If cancel delay is a problem, and the TRA 2020 Committee, the NTRA Security Committee recognized this in 2002. Cancel delays need to be eliminated. All racing commissions should eliminate cancel delays tomorrow. There's no reason for them, they are a vulnerability in our system and they still exist in about 10 states. You can go to the TRA Web site, tra-online.com, and you can see what states, what the cancel delay states are. But I would also say, and this is just a personal observation, certainly I'm not representing the TRA, but when you mention California might mandate AMS at their next meeting or something, I consider it the height of hypocrisy if they don't also eliminate, finally, cancel delay at the same time. Thank you.

MR. BOWLINGER: Izzy, would you like to address the technical aspect of that?

MR. SOBKOWSKI: So Chris, it's good to see you; you know, we've talked over the years. That was a lot of information that you just put out there. Let me address them quickly. California is not going to mandate AMS. Nobody mandates AMS; New York has not mandated AMS. AMS is an approved system by RCI; so far New York is willing to accept the fact that RCI has done the testing but any other vendor that supplies a similar system is surely welcome to go ahead and compete. We are a vendor. We compete in a free market and we've got a good system. I understand TRA has a system as well, we'd love to go ahead and compete against you, love to go ahead and partner with you. We're looking for an industry solution here, we're not looking for any kind of unfair monopoly or any kind of unfair advantage. We do hard work and we've done a lot of really good work and I think we've been recognized for that good work.

Just to be clear, California is not looking to mandate AMS, New York is not looking to mandate AMS. They've approved us. That's the extent of it. They recognize us and approve us. I welcome you to go ahead and do it. You're welcome, Chris, as anybody else in a free market system to go ahead and spend money and spend time and take risk, as we've done, to go ahead and do it. Please. It will make us better. Your competition will make us better.

Cancel delay, to be eliminated, that's an industry decision, that's not an AMS decision. I happen – well, it doesn't matter what my personal opinion is, it's not there.

You talked about pricing, we've rolled out a pricing model, we've also offered all kinds of incentives for the first companies that come ahead and come on and we've done that, I think, very aggressively both in terms of price and in terms of time for that.

But the one that really concerns me as well, and you know in my talk I mentioned that there's industry pushback that says either this system is too sophisticated or it's not sophisticated enough or there's this problem or that problem, it really comes down, as I see it, to price. You talked about ITSP is a store-and-send. I agree, and the problem is, and will continue to be until we have either WTP as a wagering transaction protocol or some other industry protocol, that the transactions that we can look at, that any monitoring system can look at, is localized to those areas, those jurisdictions where you can in fact get transactional information. There's information that you can cull from pools, and we do that forensically. Actually, there's significant information that you can get from pools. On a transactional level, we've had the discussion with New York, we've had the discussion with Kentucky and with California and other venues. The more transactional information that we have, the deeper our analysis can be. But saying that because you don't have the whole world, you don't have complete visibility, that you shouldn't use a system on a jurisdiction by jurisdiction basis that gives you the transactional ability, is, in my humble opinion, shortsighted. By being able to gain access jurisdiction by jurisdiction we're building a security database and you have that visibility. By being able to capture New York and California, you're

looking at a significant part of the national handle, and then other very important and larger states start to contribute and smaller states contribute as well. The same is true of the ADWs, we've had the discussions with Oregon, by being able to come into the Oregon hub. If we in fact get that, our visibility grows.

This is of a national level. My last comment is that if there is another vendor that comes up there, we will be very happy to work with that other vendor to provide that global view. So any information that we have that we're allowed to share with another vendor that has a similar type of system would be great. We'd be happy to go ahead and work with them. Thank you for your comments, Chris.

MR. BOWLINGER: And, Chris, I would just add from a regulator's perspective, I've been doing this now for eight years, you start every journey with a single step, but as far as I know the regulators, after the 2002 incident, laid upon the industry the prerogative to please come to us and tell us what you want to do about this problem. It hasn't been addressed.

I bring back up the independence of that, and I think Kevin's point was the most salient that to have the industry stand up and say that we're doing it ourselves and that should be sufficient is the difference between due diligence and the independence.

MR. VIC HARRISON: Well, I was going to speak to the issue of bet cancel delays, but if the Colonel has something salient in response to Chris's comment, go ahead.

A VOICE: I think we're losing sight of something here. Everybody keeps coming back to the Pick-6. What's the most salient point about the Pick-6?

MR. BOWLINGER: It was an inside job.

A VOICE: It was an inside job and they're in jail. They were caught. They didn't get away with anything. So that's number one, an incident happened which the procedures in place caught, found the guilty parties and sent them to jail.

MR. SOBKOWSKI: Can I comment on that really quick? They were caught on the Pick-6, but there were other things that they were doing that were under the radar for quite a while that they weren't caught at. It was very obvious people got caught.

A VOICE: Right, and the Defense Department is regularly hacked. The reality is, there is no perfect system. Now, I spent 30 years in the Marine corps, I got the highest security clearances that you can possibly get and I can tell you that the military and the intelligence services went through a real dilemma. You can have a perfect security system and you know what it does? It negates the purpose for which you wanted to get the intelligence because nobody has the intelligence that needs it. But it's really secure.

So you have to put in context technology to meet the requirement that you're trying to do, which in this case is to deal with two very important factors. The first, we're dealing with horses, not dice or slot machines. They are living creatures that behave, sometimes, erratically. They don't always want to go in the gate, they always shouldn't go in the gate. How many here in this room wish that Barbaro had been scratched after breaking through the gate? Now, whether that was a factor or not, but the fact is this is not like regulating a slot machine or a complete electronic banking system. There is continuous human participation and action on the part of the wagering public and there is continuous action in terms of how the horses are reacting on that day-to-day execution of the racing program and the interface between multiple tracks in multiple jurisdictions who are trying to sell their product and sometimes have to delay a race in order not to step on another race because a race at Belmont had a horse with a problem in the starting gate and if you didn't delay the race you're going to have two races going on at the same time and nobody's happy and nobody makes any money and the wagering public isn't served.

So you have to have a recognition that this is not a stock exchange, electronic interaction solely, too. The TRA has taken action. Now, I'm a racetrack president, I haven't been involved on this but I have instances over the last couple of my limited tenure where I have had the TRPB come in to support me and to support the regulators, which is the point I wanted to make on this particular one. It's not just the TRA, on their own, with no one looking over their shoulder. We are the most regulated industry around and we have regulators in the tote rooms, we have state stewards as racing officials, we are subject, any time there's a tote irregularity, we have to report to the regulators what's happened, they can request additional information from the tote companies, tote companies are licensed. So it's not as if a TRPB, which was created as I understand it, historically, by the federal government, turning to the FBI and the FBI's putting in place the TRPB and with a tradition of the president of the TRPB being a former FBI agent specifically to ensure integrity of what was, at that time, the largest spectator sport in the United States. So, I'm going to shut up.

One last point, who in here wants to be subject to social networking analysis? How many of you are trainers or owners here or know jockeys, and that scared the hell out of me? That scared the hell out of me as an American, not necessarily as a racetrack president. Now I'll shut up.

MR. SOBKOWSKI: Can I respond to that? I'll respond to that very briefly if I can. One is, cancel delay is a reality, that's correct. The horses will sometimes be slow and there's a need to go ahead and do a cancel or a cancel delay. There are folks who do automatic, robotic wagering, there are folks who go ahead and at the last moment will go ahead and take advantage of that using sophisticated techniques to go ahead and take advantage of opportunities in any kind of transactional system, of which horseracing is like that.

I would ask you, for example, if you would go to an ATM system that wasn't monitored? If you would take your card and say, Well, Citibank, I trust them, so

therefore it's okay. In fact, you are monitored. The words social network analysis, if you think for a moment that you're not subject to that, you're wrong. When you put a player card into a casino, when you use your ATM, when you go to the supermarket and use your checkout discount card, all that information is public information, in fact, it's just used. So we may or may not like it but it is a reality and people go ahead and do that. When you start to do investigation, when — I don't want to speak for the TRA, but I have to believe that when the TRA does an investigation — when any type of investigation is done, that's what you ask is who, what, when, where and why? So this is not a matter of going ahead and nefariously collecting information about you and about your habits and what you go ahead and do; it's public information that, when something is very suspect, that you can go ahead and start to build a dossier and makes it easier for the investigator to go ahead and start to prosecute. It's not a nefarious big brother who's looking after you; it's looking at public information, when something specifically pops up.

MR. BOWLINGER: We're running short on time, but let's take at least two more questions.

MR. HARRISON: Vic Harrison, Commonwealth of Virginia. My comment or question goes to Denny. On those suspect bets, and this is to the issue of bet cancel delays, most of those races, were those harness races or thoroughbred races or what breed were they?

MR. DENNY OELSCHAGER: Suspect bets in terms of the forensic? The 31 days? They were thoroughbred.

MR. HARRISON: Because I think really to solve the issue of bet cancels there's a number of things we can do, but one thing we really need to do and I don't think we have done is really define the start of the race. I'll just give a quick example; this will take 30 seconds. I have seen plenty of races, harness races especially, where before the start of the race and even before the recall rule, and I'm really kind of appalled at some of the lack of enforcement of the recall rule, for, say it's a 2-year-old trot race and before the start of the race four of the horses go off stride. Those horses have no shot of winning the race and yet the race goes off and I'm lucky enough or good enough to be standing next to a self-service machine where I can cancel my ticket, even at the small tracks, up to \$50 before the start of the race. Or I'm at an account wagering terminal and I can do the same thing, I can cancel. Now, is that legal before the start of the race? I suppose it is. But is it fair to the \$2, Joe the Bettor who made his bet 10 minutes prior to the start of the race and then he went and he sat down with his popcorn and his beer and he's not anywhere near a terminal or a teller where he can actually cancel that wager.

What is the actual start of the race, you know?

And the same thing can be said for thoroughbred racing. You have that brief period of time before the betting is officially stopped, where the horses have left

the gate and there's still a window of opportunity to do some manipulating with either cancels or betting.

MR. OELSCHAGER: Certainly the issue of what is the real start time of the race is important, and another variable that's obviously available is when was betting stopped by the stop betting command, which may not correlate precisely with the start of the race either. When you look at patterns, though, sometimes it's easier not to worry about whether or not the engineering failed in terms of getting a precise log as to the start of the event, but simply to detect through the pattern. If we're looking at past posting incidents, the progression of those pools and circumstances, it's going to be very obvious as opposed to a race where wagering came to a normal end; it's going to stand out very easily.

It also comes into play in a very related way with respect to refunds. During our racing officials accreditation programs, one of the things that was talked about was manipulation of pools as a result of horses being scratched at the gate at the last second or jockeys losing a stirrup and thereby having an excuse for a poor performance accompanied with very suspicious betting. So there's just lots of things that can be done.

The comments that were made earlier about it being, you know, a thing involving living creatures and living people, that's all very much true. There's a lot of incidents and yet, when you filter the data, the most suspect ones are pretty easy to identify and that's not, that's only the starting of the investigation, it leads different ways once that information is put into the hands of the investigator.

MR. HARRISON: Right, but to the Colonel's point, this industry is as much, in many ways, an art as it is a science, so there is a lot of human intervention. But I really think that with respect to bet cancels, that we need to strictly determine what the start of the race is. We really need to do some work there.

MR. MARK THURMAN: I just want to correct one thing. I'm Mark Thurman, I'm the president at CHRIMS, and one of the things that's not going to happen over the next 45 days is California's not going to adopt any kind of rule that quickly. And California does have independent auditors every day auditing the pari-mutuel system, and we work with the industry from a global perspective within California and we work very hard to make sure that the integrity in California is kept.

MR. MULLALLY: One point on that is that, and these are the only two state auditors that have looked at this issue to my knowledge and had the same finding. In fact, in Texas, as I mentioned, they actually praised Texas for the excellent job they did in auditing. But they also noted that auditing is only good if you know the data is good. If there's no oversight of the way the data's being collected then the audits, the results can be questioned.

MR. BOWLINGER: I would also add, but in California we also had the problem where the 20 horse wasn't included in the Kentucky Derby. That's not a past

posting cancel delay, it's a completely different issue that should have been picked up. Please go ahead.

A VOICE: Hi, I work for AmTote International. I guess the first question I might have is to Kevin; we are right now working with GLI in Texas on the accreditation process. Texas is paying GLI for their time but the tote companies, I'm going to be racking up in the neighborhood of 80-120 hours and that's, this is professional services time, it's not just a person, it is a team of guys that we would typically have on our software development projects and things like that. Texas isn't paying us to help Kevin come up to speed with a totalizator system, so in the future, so we go through this process once, right, so in the future does this, how do we not have such a big bill on the tote side that we're not getting reimbursed for?

Agreed, there are rules and so on to be a part of Texas, to be qualified in terms of operating there, but at the same point in time it seems like, wow, we'll just throw this over the fence and they'll have to do it, period. There's no choice for us, so we're getting stuck holding a pretty serious bag of hours that we don't get compensated for. So going forward, how do you see that going away?

MR. MULLALLY: Sure. Tell you from a practical standpoint and then how I dealt with it when I was a regulator. From a practical standpoint, it's unfortunate but the cost of compliance with any regulation is something that is borne across society; I mean, the IRS doesn't pay me for the time I spend to fill out my tax return but I still have to do it. So, I think from a regulatory standpoint the important thing is that there be, and this is where, in my observation, there's a lot of work to be done. There's got to be some better coordination or at least willingness to cooperate and compromise on what is the reasonable level of regulation and what areas are worthy of oversight, so that the industry has some buy-in in what areas of technology need third party independent oversight so that there's an understanding so that you can budget your time. I think that's what any business asks. So the thing that you are getting hit with now is, this is an unexpected allocation of resources. So I think that once we get through this tough part, the ongoing relationship that you're able to develop with, or understanding, better than relationship, you'll be able to understand what the laboratory is, what areas of software development do we need to communicate with the lab? And every other aspect of the gaming industry deals with this, mostly without a hitch. We talked about the horse races are live animals, it's not like a machine. Well, poker players are regulated. The implements of wagering in every other industry where gaming is are regulated.

A VOICE: Then, Izzy, you use the term frequently in your presentation that you have a proven turnkey solution, so I'm assuming from a tote standpoint that basically we're not going to have to do anything, all we have to do is turn over a pipe and you have at it.

MR. SOBKOWSKI: I'd like to be real clear on that, which is, in letters and in public we've asked, in fact, for that pipe to be turned over multiple times, many times and that pipe was never made available to us. The question stands, and the

question is that when you give us data, when you get to us either through ITSP, WTP, XML, don't care how, when you plug into us, we'll start to operate.

A VOICE: Are you currently working with any track, any ADW, any entity, anywhere that you've actually connected to?

MR. SOBKOWSKI: No.

A VOICE: Okay, that's like nowhere, right?

MR. SOBKOWSKI: No again. I mean, it's a leading question; I don't feel like I'm on trial here but the answer is no. We've tested with live data. Because the totes did not give us a stream as we requested over and over and over, as regulators have requested from the totes to give us a stream, and we've been met with a wall of resistance because, I understand you don't want to pay for it, but that's the wall of resistance we've been met with. What we've done is we've taken live data from multiple jurisdictions that we've gotten; we've gone ahead and built our own simulator that goes ahead and provides transactions of live data into our system. I'd be very glad to go ahead and submit to an acceptance test with your tote or any other tote.

A VOICE: All right, so along the lines of, we have this simulator using live data, from a statistical standpoint, the rule of parsimony typically applies to a predictive algorithm where the fewer inputs that you have on your predictive algorithm and the correlation remains the same, that you end up, at the end of the day, with a better algorithm. But you guys seem to be taking the approach of, we want to throw everything in there and predict according to everything that goes in there, kitchen sink and whatnot. So I'm concerned that, when you throw so many things in there and you sort of hike up the correlation against all of the things in there, I mean, you're throwing in everything so when you hike up the correlation you end up with false positives. Well, a false positive ends up being some action has to be taken, right?

MR. SOBKOWSKI: So, to be clear, this is not a correlation engine. A correlation is a simplistic approach to what we're doing. It's also not a neural network, which is a different sort of simplistic approach to this. The machine learning that you're addressing to, in fact, I don't know if we really want to address this in this room, this venue, but also takes out a sample set as it builds, and internally you're actually reducing false positives. The more data you have, the less false positives you have. The more data you have, the better your system is. So in fact, if you were to take a different approach, and I could argue that one as well, was that with a small amount of data, how could we be confident that our solutions are good? That's a different argument, but if your question to me is, with lots and lots of data, how do we feel comfortable? Because we've done it before in other industries and we've done it successfully in other industries including billions of transactions at the New York Stock Exchange. These type of engines work.

MR. BOWLINGER: Izzy, I suggest you guys take this up afterward; we have time for one more question.

MR. ED MARTIN: I've been standing here for quite a while and I know you've had meetings with Izzy, your president has up in New York, so if you don't mind, I'd like to just respond to something that Chris said, and then I'm the moderator of the next panel, so I've got to get out of here.

Chris, I think RCI would welcome a dialog with the TRA. This is not the TRA versus RCI or regulators versus the tracks. It's unfortunate that that dialog would start now and maybe couldn't have started earlier but I think our door is always open to that kind of dialog. The concept of the requirements that are now moving forward in a number of states, and I didn't know CHRIMS spoke for the California Horse Racing Board, although I do know what their chairman has said publicly. But there's a process in every state. I think it would be helpful to have that dialog because as what we're both trying to achieve continues to go forward, we could potentially address pricing issues, redundancy issues, and maybe go back to some of the things that we were talking about in 2005 at RCI which was a public/private partnership on some of these issues.

I just want to make one last point. Human network analysis, I remember in 2005, Chris and Frank Fabian were kind enough to give me a tour of the TRPB offices, and it's a wonderful entity and I have the utmost respect for those people who have done that work over there for quite some time. The kind of thing, I don't know the gentleman who stood up from the track before, it's the same thing that you do in the TRPB database is maintain data and try to figure out associations, so it's really not anything different than what's done, so I don't know if it's un-American. It's something you do as part of any true investigation, trying to find out if something's wrong.

So I think we have a common goal; I would say that the regulators, at the end of the day, are ultimately responsible to the public on these issues and the regulators have a responsibility and the regulators recognize that and the regulators are attempting to deal with a difficult funding situations as well. We also recognize the economic situations that the industry in general faces and I think there is a need for a dialog to avoid duplication in certain areas but I have not understood the strange relationship on this issue and why that dialog has not been able to take place, but I think we probably collectively might want to thank the New York Racing and Wagering Board as well as the California Horse Racing Board chair and the other states that are looking at this for moving rules forward that might result in that dialog.

MR. BOWLINGER: Well, I thank you all. I thank the panelists and I thank you all for participating. Thank you very much.