Tested. Proven. Trusted. GLI's mission to support the integrity and security of lotteries continues to evolve.

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PGRI Introduction: GLI's first client was the South Dakota Lottery, and nearly 35 years later, they are still a client. Since then, though, GLI's scope-of-work has expanded far beyond testing and certification of technology to include consultation and professional services and support on all aspects of the intersection between technology and games-of-chance. Today, its clients are gaming regulators, suppliers, and operators in 567 jurisdictions all over the world, 65 of which are lottery. The global community of gaming operators has come to depend on GLI for IT consultation, auditing, field inspections, security audits, responsible gaming, project management, Governance, Risk and Compliance, including World Lottery Association Security Control Standards (WLASCS) and ISO 27001 Information Security audit and certification; test automation, and technical services. GLI University® Online combines world-class courses with leading-edge eLearning technology to deliver custom training solutions for lottery & gaming operators.

New technology and business processes are changing the whole games-of-chance landscape. Joe Bunevith puts things in context, helping us to make sense out of the disruption and understand the straight line that connects yesterday to today and tomorrow.

Paul Jason: **GLI has broadened its scope-of-work in recent years far beyond testing and certifying.**

Joe Bunevith: GLI's massive knowledge base is built upon decades of global experience in helping clients sort through the pros and cons of all the different options and strategies. We can help the regulatory client clarify their public and regulatory objectives by sharing the results of different approaches as they have been applied throughout the world. But GLI's core competency is to then help set up the technological systems and procedures to support those objectives.

GLI is fundamentally an engineering and IT company. We deal with everything objectively, taking direction from regulatory clients on what their goals are and helping them sort through the facts and case studies to understand the best ways to get there.

So there is no single set of "best-practices". Instead, there are public policy and regulatory priorities and choices to be made, and then there is a multiplicity of pathways to achieve regulatory objectives once they have been clarified.

J. Bunevith: Different jurisdictions are going to have different regulatory objec-

tives and frameworks to align with their own unique gaming cultures and public policy objectives. And of course, there are different opinions on everything … different opinions on public policy objectives and then on how best to accomplish those objectives. It is not within GLI's purview to opine on public policy. The regulatory client determines policy and regulatory objectives. GLI helps to clarify and organize the facts and data, and help the client assess how different technologies and approaches may serve their goals. We have vast resources of information about how different approaches have manifested in other jurisdictions that can help the client anticipate the kinds of results produced by the different regulatory strategies. There are typically pros and cons and trade-offs to be considered when deciding on the specific strategies for regulating games-of-chance, and we try to sort those out for the client to then decide on the approach most consistent with their policy objectives.

In the end, at the macro level, everyone wants a regulatory framework that applies standards, rules, and technical requirements that are consistent, enforceable, and clearly understood by everyone. Legislators, regulators, operators, suppliers, and the independent test laboratories need to all be on the same page. Fortunately, we do all have the same big-picture goal. The regulatory structure must support a gaming marketplace that serves the interests of a wide variety of stakeholders while protecting the consumer and the integrity of the marketplace. A diverse set of commercial enterprises, government agencies, and regulators must work harmoniously to ensure the games work according to specs and requirements, that responsible gaming controls are in place and adhered to, that taxes are collected correctly, and that everything gets done right.

How has the proliferation and easy accessibility of gaming options affected the evolution of regulatory structures over the last few years?

J. Bunevith: That is a massively complex question on many levels. For one thing, there is a wide variety of interest groups that include legislators, regulators, suppliers, industry groups like the American Gaming Association (AGA) and NASPL, EL, and WLA. One result of a sound regulatory framework is that instances of integrity violations or corruption are identified. Identifying the violations would be the first step towards enforcement of the laws and the reduction of violations. Proof that effective regulatory structures and enforcement mechanisms work better than the prohibition of gambling is evidenced by the fact that crimes are now being uncovered in ways that they were not under prohibition. Infractions are now more visible and are publicized, so everyone is more aware of it than ever before.

Of course, regulations did not cause the problem any more than your "low oil" light caused the oil to be depleted in your car. Instead, the effective regulatory framework just brought the existing problem to light so it can be properly addressed and stopped. The AGA estimates that over $50 billion a year was being wagered on sports before it was legalized. That is a $50 billion illegal underground economy that was untaxed and unregulated. We may never know the extent of the integrity issues, money laundering, fraud, and corruption that riddled this underground economy of illegal betting.

We can be sure, though, that the absence of regulatory oversight provided a very fertile environment for illegality of all kinds to flourish. If the public policy objectives include optimizing security and integrity of the games, protecting the consumer from fraud, minimizing money laundering, channeling economic benefit over to society instead of enriching criminals … then regulating games-of-chance, including iLottery, is always preferable to prohibition.

What is the most important change in the games-of-chance industry over the last ten years?

J. Bunevith: The biggest change that is happening is the transition from brick-and-mortar to digital gaming. Whether it is buying a lottery ticket at a retail store or playing the slots or table-games in a casino, the players in the pre-digital era were anonymous, with no access to the tools and resources afforded today in the digitally connected world.

Digital gaming starts with player registration. The resulting PAM (Player Account Management System) provides the platform for the player to manage their accounts and playing activity; enabling them to communicate with operators about what they want and do not want. Maybe they want to set play limits, maybe they want to receive promotional offers, or maybe they do not. It enables the operator to communicate with players and implement responsible gaming policies. How are responsible gaming measures even being applied in the anonymous play environment? Putting a tiny message with a phone number for a problem gambling hotline at the bottom of the lottery ticket or slot machine? Advertise "Responsible Gaming Month" or the annual campaign against gifting of lottery tickets at Christmas? How effective do you think these methods really are? The registered player is dialed into a communication system that powers a whole new level of effectiveness when it comes to responsible gaming strategies and methods. Digital gaming enables two-way communication with a registered player base that is the basis for the recreational gaming industry to grow in a healthy, productive, sustainable way.

The broad scope of Digital Gaming in general, and the Player Account Management System in particular, constitute, in my opinion, the biggest delta between today and the previous era of anonymous betting. Digital Gaming enables a whole new relationship between operator and player that is the basis for long-term sustainable growth. The operator can now communicate on a whole new level with its players, delivering information about its products and promotions that enhance the value of its products, instructions on how and where the games are available to play, and whatever communication and informational features the player values. The players now enjoy a whole new level of support and guidance that helps them play responsibly so that they can enjoy recreational gaming long into the future. The operator now knows where the players are located, how old they are, how much and how often they bet, and what they want in terms of games, promotions, and kinds of communications and support services. GLI's role is to ensure the systems all perform to regulator and operator specifications.

Much of this new functionality will be driven by Artificial Intelligence. AI is powering an increase in speed that amplifies algorithmically driven computer capabilities exponentially. Tasks that have been done for years by marketers and operators are now being performed in a tiny fraction of the time it used to take. And that enables the application of a whole new level of data collection, organization, and analysis, which is transforming the industry. I would submit that we keep this whole notion of AI in proper perspective, though. It is not doing anything that was not done before. It just does it all so much faster and better that the impact is and will in fact be quite dramatic.

Part of the GLI mission is to keep abreast of rapidly changing technology, like in PAM's, to help its clients ensure proper security and operational integrity of these new systems, right?

J. Bunevith: Yes. These new technologies are delivering incredible value to players and operators. We just talked about PAM's which, as you point out, need to be tested to ensure they protect the confidentiality of private player information and transaction data, have effective registration and geolocation procedures, and otherwise work properly and meet players' expectations and operators' specs and regulators' requirements.

How does digital gaming differ across the different game categories?

J. Bunevith: I'm sure there are differences. More interesting, though, is how the same

needs, and therefore technical functionality, applies across all the verticals, and all the game categories. It's just the nature of the engineering. There are the components that need to do all the same things that are required by everyone: like login, confirm the identity of the customer, verify age and location and that they are allowed to play, and then authorize the person to enter and play. Players all need to deposit funds to bet with. Operators all need the geolocation and transaction-processing systems as well as an effective KYC (Know Your Customer) system. All these and much more need to operate together and that is true for all types of digital gaming, be it iGaming, i-Lottery, sports betting, or any other game-of-chance vertical.

Well, doesn't sports betting and online poker have areas of security and integrity exposures that an RNG (Random Number Generator) game like a slot machine or a lottery game would not have.

J. Bunevith: That's true. Monitoring betting activity to identify betting anomalies and irregular betting patterns and such does add a layer of complexity to sports betting and poker that does not exist with RNG games. In addition to the need to monitor integrity, sports betting in particular is all about risk management in a way that does not apply to RNG games. RNG games can simply be set to pay out a certain percentage to the player, to the operator to cover expenses and profits, and to the state in the form of taxes or funding for good causes from lotteries. Sports betting margins fluctuate depending on the seasons, the sports, the content that's available, the type of bets that are being placed, what key players may be hurt or impaired without it becoming public information, and the ultimate outcome of the match, which is not known beforehand. In fact, to your point, preventing corruption and managing risk are really what define and differentiate sports betting from most other game categories. The user-facing app, the games themselves, and promotional strategies and branding and other business activities that comprise the bulk of RNG games are a minor part of the sports betting world compared to the importance of risk management and integrity monitoring. But the core of digital gaming - registration, transaction processing, PAM and KYC, and so many other IT processes - are all the same across all game categories, including sports betting.

Sidebar comment … AI is playing an invaluable role in the performance of risk management and fraud prevention. AI offers the ability to power through trillions of transactions to identify betting activities that are outside the norm; and assess all the factors that influence the outcome of a sporting match so you can set the odds so precisely that the aggregate result is both fair to the punters, while enabling the operator to make money.

One more clarification … AI is a tool. Even if it does 99% of the heavy lifting, the information is at some point delivered to a human being. A key part of the AI picture is that a human will always be involved. The degree and capacities may vary, but human engagement will always be required for AI to be effectively integrated into the business of adding value and solving problems.

How will AI contribute to the goals of cyber-security?

J. Bunevith: Cyber-attacks have been happening ever since the dawn of the digital age. Black-Hat hackers started writing scripts to attack and break through firewall systems, and the never-ending race of updating operating systems began. Update the operating system, and Black-Hat hackers would find another vulnerability in a vicious cycle. Now, most major companies employ or contract White-Hat hackers to find those vulnerabilities before the Black-Hats do so the vulnerabilities can be fixed. Now we are moving up to where AI is scouring the system; running countless cyber-attacks to find out where the vulnerabilities exist. By the way, Black-Hats are applying AI in their own efforts to continue to implement their own attacks. That is one reason why the power of AI must be harnessed and applied by the law-abiding regulated world. AI is a tool, and if it is being used as a weapon by those who would harm us, our defenses would be outgunned if AI were not applied by White-Hats to fight against cyber-attacks. The power of AI is incalculable when it comes to preserving security, protecting consumers and players, identifying and preventing fraud. AI needs to be applied to its fullest capacity to secure the long-term health and success of this industry.

Some people are concerned that the role of AI in building profiles on consumers that include buying habits and such is an invasion of privacy.

J. Bunevith: Thankfully, there are procedural tools that enable multiple levels of opt-in and opt-out, effectively giving decision-making control over to the consumer. For instance, I opt-in to receive discounts on the things that I want to buy. And I opt-out to not receive promos on games I don't play and discounts on products I don't buy or services I don't use. I want merchants to know this innocuous information about my buying habits so they know what I want to buy and when I might want to buy it. Tracking my purchasing interests can only help me more than it can hurt. Likewise, players are likely to opt-in to receive promotions and discounts as long as they are relevant to them personally. The more information the operators have about what games I like to play, or what kinds of other products or services I like to buy, the better they will be at tailoring their communications in ways that are relevant to me. Call me crazy, but I want them to have the information that enables them to focus their promos on things that are relevant to me, and spare me from more info that I am not interested in. The evidence clearly shows many consumers agree with me on this, and that the next generation of consumers is even more open to this practical trading of information for discounts and other benefits. Airlines, coffee shops, and casinos are just a few who have demonstrated the value of loyalty programs and clubs. I know that lotteries have players' clubs and loyalty programs and would encourage them to invest even more in the build-out of those initiatives that reinforce the lifetime value of your customer.

AI will enable the operator to know the likes and dislikes of its players down to the Nth degree. That is already transforming the whole notion of KYC. I would submit this will be a decisive competitive differentiator going forward. The successful operators will excel at applying AI to their KYC initiatives, Loyalty Programs, and Players' Clubs.

Of course, everyone is already using AI. Not just data and predictive analytics. Your Mobile's spell-check auto-correct is an AI application. The functionality of Siri, Alexa, and Google Assistant is all powered by AI. Perhaps we should think of forward-looking technology and innovation not as a disrupter but as the pathway toward a better world. We just need to be OK with the never-ending learning curve that keeps us young! ■