

EXECUTIVE SUMMARYAS THE MARKET GROWS, SO DO THE THREATS



Dramatic changes are in store for the online gambling industry

New operators are cropping up even as existing operators consolidate. This, along with strong market growth and new operating geographies, significantly increases the competitive pressure. Operators understand that every new player counts and every new VIP player is crucial to the success of the business.

Player habits are also shifting. As players move from playing on a desktop computer to a mobile device, there is less tolerance for friction on the path to play. What's more, they're now playing on more devices and expect a consistent experience across them all.

Meanwhile, changes to online data privacy regulations in the UK and European Union are the largest in a generation. Compliance will limit the traditional types of data collected about players, potentially impacting current security and fraud prevention best practices.

Finally the techniques fraudsters employ continue to evolve. The short game of buying lists of stolen credit cards to open bogus accounts has been supplanted with more complex synthetic identity theft schemes in which well coordinated fraud rings build composite identities using stolen credentials from an array of diverse dark web sources. iGaming operators and platform providers will need to invest heavily in next generation device intelligence and machine learning technologies if they want to stay one step ahead.

IOVATION IN GAMBLING

NEARLY 4 BILLION GAMBLING TRANSACTIONS PROTECTED

A TRUSTED PARTNER TO THE IGAMING INDUSTRY SINCE 2004

No fraud prevention vendor has worked in the gambling sector longer than iovation. In fact, iovation's very first customer was an online poker site that was facing serious operational issues with fraud rings using stolen credit cards to launder funds. Since then, iovation has protected almost four billion transactions for its gambling customers and prevented more than 39 million fraudulent transactions. It's safe to say that we've learned a thing or two in the gambling sector over the past decade. As have our customers.

While fraud is an issue for every industry, it's an especially daunting one for gambling operators and platform providers. No other industry experiences a greater diversity of fraud types than the online gambling industry - from credit card fraud, account takeover, bonus abuse, and other forms of cheating.

As we look to 2018 and beyond, iovation is responding to the needs of the industry by expanding beyond fraud prevention solutions by offering solutions that leverage device intelligence to improve user experience as well as identifying and retaining VIPs.













5.5M

Fraudulent Transactions
Stopped in 2017

460M

Gambling Transactions
Processed in 2017

100+

Active Gambling Operators & Platform Provider Customers

680K

Confirmed Reports of Fraud & Abuse Placed in 2017

8 OF THE TOP 10

Worldwide Gambling Platform
Providers Use iovation

STATE OF THE INDUSTRY

3 KEY TRENDS SHAPING THE MARKET

At our customer summit in Malta in June 2017, we heard what's on the minds of gambling operators and platform providers. Yes, they're as concerned about addressing online fraud and abuse problems as ever. We also heard the need to grow revenue and market share, enrich their players' experience, and identify and retain VIP players — all while navigating an ever-changing regulatory environment.

Those conversations, along with our close engagement with our customers and industry leaders defined the three key trends that will drive the gambling industry in 2018:

PRIORITIZE THE PLAYER EXPERIENCE

As players transition from desktop to mobile devices, they're rapidly losing their tolerance for conventional login, security, and fraud prevention measures. Any level of user friction is deemed too much. In a market where another online game or betting option is just a click away, it is more important than ever to quickly identify new VIP players and then retain them through personalized loyalty programs.

PLAN FOR REGULATORY UNCERTAINTY

Record fines leveled in 2017 sent a clear signal to the industry: social responsibility is no longer an option, but a business requirement. Stopping underage gambling and supporting responsible gambling will soon be joined by new "signals" such as GDPR. As the old adage goes, hope for the best, plan for the worst.

PREPARE FOR UNCONVENTIONAL ATTACKS

Not to be outdone, fraudsters are also sharpening their knives. They're expanding beyond payment fraud to use advanced computer tools and techniques for more sophisticated and costly new scams. Don't worry. Detection and prevention have also moved into the realm of device intelligence and machine learning.



LAVISH WELCOME OR PAT DOWN? HOW DO YOU GREET PLAYERS?

Let's compare and contrast the first couple minutes of a player's experience at a physical casino and its digital counterpart.

At the casino, players are greeted with lavish decor, free drinks, and generous amenities. Every aspect of the business is optimized to attract new players and keep them playing. Security operates in the background so as not to distract players.

And the typical online gambling experience? Before they can play with real money, players must pass multiple security measures. In addition, there may be deposit limits and limitations on methods of deposit placed on them. Not so welcoming.

Here's the great tension in which online gambling operators conduct their business. They need to protect the business from fraud and abuse. But they must also meet players on their preferred channel—the mobile device—with the same rapid, secure welcome. To do otherwise would risk the relationship and revenue growth.

Fortunately for operators, the prevalence of mobile devices also represents an opportunity. Non-password-based authentication options can get players quickly and securely into games without friction. When it's time for high-risk transactions like payout, leverage additional dynamic authentication factors that can assess risk and minimize player friction.

And what about the VIPs?

Sophisticated 'Know Your Customer' (KYC) programs help identify VIPs and build brand loyalty. But, these programs work only after a player has established a history with your business. Predictive analytics and global device intelligence data fill the gap with valuable insight into each new player, whether she's a fraudster, your next VIP, or someone in between. This allows you to customize the player experience even before you know your customer.

THE IMPACT OF MOBILE TECHNOLOGY

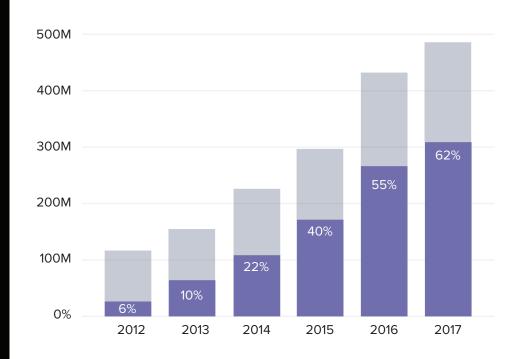
TAKE A MOBILE FIRST APPROACH

In 2012, only 6% of gambling transactions processed by iovation came from a mobile device. Fast forward to 2017 and that number has skyrocketed to 62%, representing an average annual growth rate of 116%. In Q3 2017, 61% of gambling operators' revenue and 72% of betting stakes came via mobile devices¹.

Mobile players demand convenience and ease of use. Requiring them to enter a username and password on a mobile screen each time they want to place a bet is more than just a nuisance, it's a barrier that might drive them to competitors who offer easier mobile authentication. Because players are increasingly using multiple device types to play, a fact multiplied by Google's recent decision to allow real-money gambling on Android devices in the UK, operators must also focus on delivering a consistent user experience across a variety of platforms and device types.

¹ Online Gambling Quarterly. (2017, December)

▶ % OF MOBILE TRANSACTIONS V. TOTAL GAMBLING TRANSACTIONS



KNOW YOUR CUSTOMER, FASTER

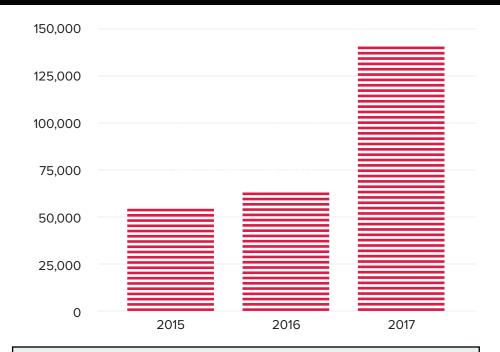
TRUST, BUT VERIFY

Limiting your new players' deposits and deposit methods as a means to fighting fraud, has become a common practice among operators.

Conventional 'Know Your Customer' (KYC) solutions take too long. They impact the player experience, limit the bonuses marketing can use to attract new players, and jeopardize potential new VIP players at a crucial point in the relationship.

That's why online gambling operators are supplementing their KYC programs with predictive analytics based on global device intelligence. Knowing that a device has previously been involved in promotions abuse can help you target your risk procedures on specific devices while offering VIP-level incentives to those coming to your site with trusted devices and no risk indicators.

► BONUS ABUSE REPORTED BY IOVATION CUSTOMERS



According to our data, attempts at bonus abuse appear to be getting worse, nearly tripling in volume over the past three years.

VIP OR FRAUDSTER? PREDICT WITH CONFIDENCE

TRUST IS A SPECTRUM

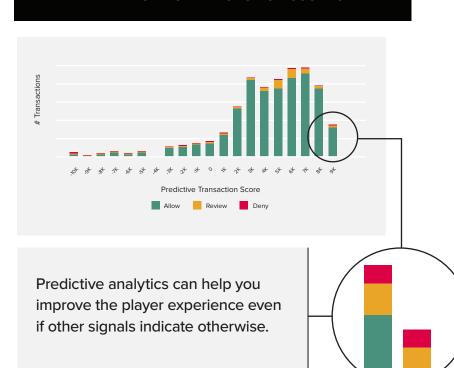
Does loss prevention need to degrade the game for your good players? The two need not be mutually exclusive. As we'll see in section three "Prepare for Unconventional Attacks," limiting deposits, adding extra hurdles for withdrawals, and other tactics may protect your businesss, but they can also create a very frustrating experience for your good players.

How much does it cost your business in lost revenue and market share when your sales and marketing teams are unable to offer competitive incentives because of overly aggressive risk management policies?

Predictive analytics helps you set appropriate risk policies, maximizing your ability to win new players -- even if they have no previous account history with you.

By combining device intelligence and device reputation with machine learning, you can more accurately predict which transactions will be good or bad. Add more fraud prevention efforts to the bad ones and create a better player experience to the good ones.

► PREDICTING TRANSACTION SCORES



CHEATING FRAUD SKYROCKETS

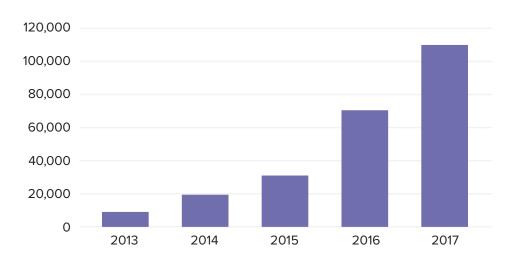
CHEATING DEGRADES THE PLAYER EXPERIENCE

While gambling operators suffer from the same types of fraud found in other industries, they must also contend with a distinct breed of fraud — cheating. Whether it's chip dumping, player collusion, or 'all-in' abuse, this type of fraud not only represents a threat to their bottom lines, but also negatively impacts the experience for their good players.

From 2013 until 2017, reports of cheating fraud from iGaming operators have increased by more than a factor of 10 in just a four year period. This doesn't necessarily mean that cheating has ballooned 10-fold over this time period. It might simply indicate that operators have gotten better at recognizing these types of cheating schemes with a higher degree of confidence than they could before.

In the physical world, casinos often work with each other to stop criminals and serial cheaters. This type of collaboration can greatly benefit the iGaming world as well and is especially important as criminals and cheaters can often hide behind the mask of anonymity.

► VOLUME OF CHEATING EVIDENCE PLACED



- Chip Dumping: A user is caught dumping chips in tournaments
- Player Collusion: Users work together with one or more other users in order to commit fraud
- ▶ All-in Abuse: A user repeatedly abuses the 'all-ins' granted in one day



SEIZE THE DAY OR RUE IT?

The General Data Protection Regulation (GDPR). The revised Payment Service Directive (PSD2). Increasing pressure to enforce Player Self-Exclusion (PSE) policies. Combined, these changes mark a new era in privacy; one where consumers will assert more rights over their personal data.

2017 hinted at what was to come. In the UK, the Gambling Commission levied multi-million pound fines on several well-known operators for their failure to adequately enforce PSE policies. Our customers have taken note. Over the past two years, we've seen a 113% surge in PSE reports. We anticipate self-exclusion will continue to impact market conditions in 2018.

Then there's the GDPR. On May 25, the new regulation will homogenize the economic region's privacy laws. All companies that require some degree of access to European residents' personal data — directly or indirectly, inside the EU or from afar — will be subject. The GDPR is both exacting and vague. It has been drafted with enough flexibility to accommodate the impact of future technologies that don't yet exist, yet with enough consequence to compel compliance now. How these regulations will affect the way iGaming operators prevent fraud and authenticate players remains to be seen. We have some ideas for the proactive reader.

PSD2, which also goes into effect later in 2018, carries major implications for the iGaming market. Among other requirements, it mandates that the majority of all electronic financial transactions follow Strong Customer Authentication (SCA) protocol. How will operators adhere to these new regulations without hindering their players' experience?

Hidden amid all this regulatory uncertainty lie opportunities for iGaming businesses to unify fraud prevention and authentication, and, in doing so, bring a range of benefits to their players and themselves.

SOCIAL RESPONSIBILITY: A MARKET IN FLUX

SELF EXCLUSION - A CHALLENGE FOR ALL

Online gambling poses an irresistible temptation for problem gamblers. According to a 2017 report from the UK Gambling Commission, approximately 2.5 million British citizens are characterized as being at risk. Under mounting pressure, the UK Gambling Commission imposed numerous multi-million pound fines on operators throughout 2017 for their failure to protect these 'vulnerable customers'.

For iGaming operators, Player Self Exclusion (PSE) is a particular thorny issue. Are they doing enough in the eyes of regulators? Will their identification measures comply with the data privacy regulations mandated by GDPR? What can they really do to keep a self-excluded player from creating a slightly different identity to feed their addiction? Device intelligence provides an important additional layer of assurance to operators who must demonstrate to the regulatory powers that be that they are capable of obeying both the letter and the spirit of the law.

²UK Gambling Commission 2017 Report: "Report Gambling behavior in Great Britain in 2015

of UK population gambles 61-73% $(41M - 52M)^2$ British Citizens at risk for 2.5M problem gambling Estimated amount that £1.2B problem gambling costs the UK government per year Largest fine levied in 2017 for failure £7.8M to safeguard consumers of all evidence placed by iovation 30% gambling clients in 2017 was for Player Self-Exclusion

PLAYER SELF-EXCLUSION TOPS LIST AGAIN

PROTECT YOUR PLAYERS, PROTECT YOURSELF

Recent record fines for failing social responsibilities are having the intended effect. Our data shows both a marked increase in the number of players who have self-excluded, and more operators who are reporting it back into the community. When players self-exclude on a gambling site that uses iovation, that gambling operator will submit a self-exclusion report on that account to iovation. There were 96,000 of these reports submitted in 2015, 129,000 in 2016, and 205,000 in 2017. In total, customers have placed more than 650,000 reports of self-exclusion.

But even after players self-exclude, they will sometimes attempt to come back to play with a different device or account. During 2017, over 400,000 devices and nearly 530,000 accounts associated with a self-exclusion report attempted to access one or more of the digital properties in our network of iGaming clients — roughly double the number of self-exclusion reports for the year.

There have also been some situations where an operator has been fined for failing to self-exclude when a player visits a different online gambling property than the one they registered to exclude themsleves. Even with national databases such as GamStop, being able to associate self-exclusion with multiple devices and accounts, even across operators, is proving essential in curbing this social problem.

► SELF-EXCLUSION REPORTS PLACED BY CUSTOMERS IN 2017





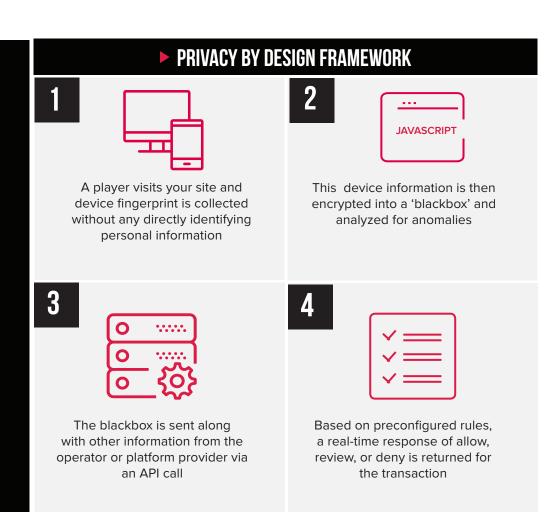
FRAUD PREVENTION IN THE AGE OF GDPR

DATA PRIVACY CONSIDERATIONS

The GDPR will place additional regulatory burdens on how iGaming businesses manage players' data and share access to those data with third-party services.

The penalties for non-compliance under the GDPR are sizable. For example, failure to acquire players' consent, uphold their many new rights under the regulation, or provide adequate safeguards for the transfer of personal data outside the of the EU/EEA — can bring fines of €20M or more.

As iGaming businesses examine their data-handling practices, they will also need to consider those of third-party vendors. They must all give consideration to techniques such as "Privacy by Design," data minimization, and pseudonymization.





MOVING TOWARDS A COLLABORATIVE APPROACH

While the fraud landscape has morphed significantly in just the last few years, most cyber thieves continue to rely on an assortment of time tested methods.

Look no further than email phishing. This tactic has proven to be a remarkably durable entry point for account takeover — despite the fact that most consumers claim to 'know better' than to click on suspect links.

The change we're seeing has to do with the attackers and their technologies. Lone wolves and serial cheaters aren't going away, but a new class of organized fraud rings warrant more concern. They're leveraging many of the same technologies that operators and platform providers rely on to stop them: for example, artificial intelligence, distributed collaboration systems, and sophisticated analytics. Working in concert from across the globe, these disciplined fraud rings are beginning to resemble in organizational terms the same enterprises they target.

iGaming businesses must evolve their response to this new threat environment. Innovative technologies such as device intelligence will prove essential in helping operators to distinguish the few major threats from the throng of valuable players, quickly and accurately. In an environment where players expect payouts immediately, risk signals will have to be interpreted even faster with intelligence from disparate data sources codified into dynamic decisioning rules.

Technology is only part of the answer. If cybercriminals can help each other, honest organizations should collaborate, too. And not just with gambling industry peers. Fraudsters rarely focus their efforts on a single vertical. Consequently, a fraud analyst at a telecommunications provider could have valuable insights for their professional peer at an iGaming business. By sharing confirmed incidents of fraud, we can collectively disrupt and shut down the next generation of organized fraud rings.

THE FRAUDSTER TOOLKIT

SNIFFING OUT THE SUBTLE SIGNALS OF FRAUD

Just like a thief will take precautions to conceal their identity, cybercriminals have likewise become adept at using a variety of tools to cover their tracks.

From using encrypted networks like TOR to mask their location to virtualized emulators to launch coordinated ATO attacks, fraudsters are acquiring more sophisticated tools and methodologies to cloak and scale their assaults. The broad availability of toolkits and 'how-to' fraud guides on the dark web has likewise made erstwhile highly technical methods easily accessible.

In 2017, we saw the following evasion practices most frequently, and used device intelligence to identify the most common hallmarks of potentially fraudulent behavior.



Virtual Machines: Fraudsters use VMs to manage multiple instances of a virtual computer.

Potential Risk Signal: Does this device have a suspicious screen resolution?



Jailbroken Devices: Fraudsters jailbreak devices to circumvent security controls and spoof key device characteristics.

Potential Risk Signal: Detection of jailbroken or rooted device



TOR/Proxies/VPNs: Used by fraudsters to conceal their geographic location.

Potential Risk Signal: Is the device coming from a known TOR exit node or proxy?



Browser/OS/Device Manipulations: Browser plug-ins and apps used by fraudsters to conceal key device attributes.

Potential Risk Signal: Do the time and language settings match where the IP address is located?

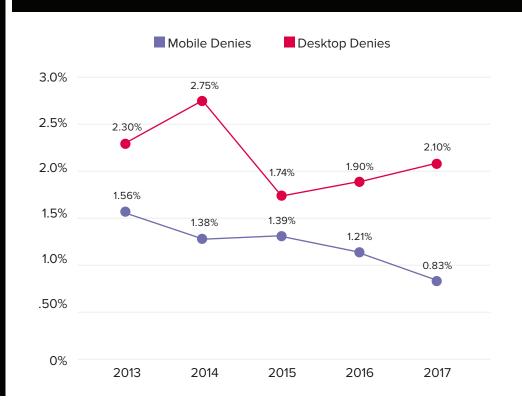
PLAYERS PREFER MOBILE

BUT FRAUDSTERS PREFER DESKTOPS

For the fifth year in a row, gambling transactions were denied at a higher rate from desktops than from mobile devices, even though mobile usage grew at a significantly faster pace. In 2017, the discrepancy grew to its widest ever. Desktop transactions were denied at more than twice the rate as mobile transactions.

Does that mean mobile devices are safer than desktop machines? Certainly not. Rather, this is largely due to the fact that desktop machines are more suitable for fraudsters and serial cheaters to perpetrate their schemes. Not only are they faster, but they're better suited to creating and managing multiple profiles, which could be helpful to run a bonus abuse scam, or, through use of an emulator, to create and automate multiple instances of an application to take over accounts with stolen credentials.

▶ DENY RATES FOR MOBILE & DESKTOP



BEATING BACK BOTS

A well-known UK gambling operator stopped a wave of bots from creating thousands of new accounts and abusing the most generous bonus of the year.

CHALLENGE

The operator doubled the size of its bonuses to attract new players and re-engage dormant accounts during one of the UK's biggest racing events of the year. Within hours, fraudsters sent a wave of bots to create thousands of new accounts and play with the operator's money. Every hour the operator took to stop the attack cost them thousands of pounds.

SOLUTION

The operator noticed that the bots were taking 20% of the average time to complete the account registration process. These "pop-up accounts" had a 99% correlation with bonus abuse. The operator added a new rule to their iovation dashboard that denied these "pop-up accounts" automatically.

BENEFITS

The wave of bonus abuse subsided as quickly as it arose. The operator saved £10,000s in bonus abuse losses over the course of the racing event.

Using iovation's data, they continue to monitor for automated account sign-ups and refine their rules for flagging, reviewing and denying suspicious



Our use of iovation has evolved a lot over the past six years. It's not just a fraud tool, it's a data-enrichment service. In addition to stopping bots, we've used iovation's data to reduce our manual review queue, and to renegotiate terms with a payment provider that sent an outsized portion of our fraudulent transactions. We'll even place evidence from our other fraud detection tools into iovation so as to stop the offending devices from returning.

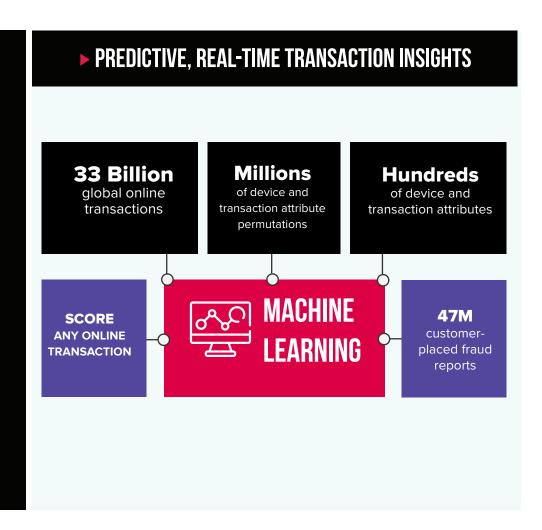
- Head of Payments, UK Gambling Operator

HARNESSING FRAUD INTELLIGENCE

MACHINE LEARNING POWERED BY HUMAN INSIGHTS

Let's assume that 2018 will be a breakout year for your organization. By Q4, your transaction volume has multiplied 10 fold. Among all those extra stakes will hide more fraudsters and a lot more bots. Some of their behavior will be too subtle or novel for your current fraud prevention stack to detect. How will you stop them?

Machine learning turns all the data from those transactions into an opportunity to identify new risk indicators that current practices and technologies could overlook. Multiply your already enormous data set with transaction data from other gambling operators and platforms – and even other industries – and you have the makings for a comprehensive, next-generation fraud-prevention platform.



KEEPING CHARGEBACKS LOW AND BONUS ABUSERS OUT

Fraudsters flocked to this Maltese operator's online casino to play highstakes games with large bonuses.

iovation's data confirmed the operator's suspicions of the too-clean accounts, helped to keep them out for good, and defeated the fraudsters' complaints to the gaming authority.

CHALLENGE

A group of new accounts in violation of the operator's usage policy didn't raise the suspicions of the payment processor. However, with enough time, these big players threatened to clean out the operator. If their winnings were denied, they would try their chances with an appeal to the local gaming authority.

SOLUTION

The operator cracked the fraud ring with chargeback fraud reports placed by other iovation subscribers.

Configurable business rules, account relationship monitoring, device profiling and device anomaly checks allowed the operator to keep the devices off their platforms. The extremely detailed device fingerprint helped the operator defend itself against complaints made to the local gaming authority.

BENEFITS

The operator continues to fend off fraudsters' scams worth €10,000s each. As the scams evolve, the operator's Head of Payments and Fraud adjusts the rule set in iovation without needing help from the IT department. Where the industry suffers an estimated chargeback rate between 3-6%, the operator believes that its chargeback level rests below 1%.



We're very satisfied with iovation. It helps us stop multiple concurrent registrations, a giveaway sign of bonus abuse.

- Head of Payments and Fraud at Maltese gaming operator

KEY TAKEAWAYS

FOR A SMOOTHER 2018

Position your organization to handle the trends that we've outlined in this report:

PRIORITIZE THE PLAYER EXPERIENCE

- Don't let fraud prevention and security efforts impact player experience; while everpresent, they should hide in the background and not impact your good players.
- Leverage technology, such as dynamic authentication, to enable players to enter seamlessly into the game. Step up additional authentication measures only as risk signals rise.
- Utilize incentives to attract new VIP players. Manage risk by leveraging predictive analytics and machine learning from device intelligence data.

PLAN FOR REGULATORY UNCERTAINTY

- The impending GDPR and PSD2, as well as rising expectations for social responsibility, will challenge iGaming operators to show that they are upholding their obligations.
- Current practices centralized data architectures, static and single-factor authentication, and using personal data to identify players – will soon become liabilities. Operators will have to transition to a layered approach that integrates regulatory tenets such as 'Privacy by Design,' data minimization and pseudonymization.
- The industry must collaborate for its own sake. The more they can prove themselves capable of protecting players and personal data, the more likely they will avert additional regulation.

PREPARE FOR UNCONVENTIONAL ATTACKS

- Expect to see more instances of orchestrated campaigns from fraud rings that employ many of the same advanced technologies that operators are beginning to embrace.
- Machine learning turns all data from a growing number of transactions into an opportunity to identify new risk indicators that current practices and technologies could overlook.
- While device reputation will remain an essential component of threat detection, it will become increasingly critical for iGaming businesses to understand the associations between devices and accounts, both familiar and unfamiliar.



ABOUT IOVATION

iovation protects online businesses and their end users against fraud and abuse, and identifies trustworthy customers through a combination of advanced device identification, shared device reputation, device-based authentication and real-time risk evaluation. More than 4,000 fraud managers representing global retail, financial services, insurance, social network, gaming and other companies leverage iovation's database of billions of Internet devices and the relationships between them to determine the level of risk associated with online transactions. The company's device reputation database is the world's largest, used to protect 16 million transactions and stop an average of 300,000 fraudulent activities every day. The world's foremost fraud experts share intelligence, cybercrime tips and online fraud prevention techniques in iovation's Fraud Force Community, an exclusive virtual crime-fighting network. For more information about iovation's authentication and fraud prevention solutions and how they help gambling operators today, please contact us at 503-224-6010 or visit www.iovation.com.

GLOBAL HEADQUARTERS

iovation Inc

555 SW Oak St Suite 300

Portland, OR 97204 USA

PH +1 (503) 224-6010

EMAIL info@iovation.com

UNITED KINGDOM

PH +44 (0) 800 058 8731

EMAIL uk@iovation.com