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Blockchain is at the forefront of modern-day technology. It has found legitimate utility in supply chain, financial clearing and settlement, and manufacturing, and is rapidly finding its place in other sectors of the economy. For the lottery industry, blockchain provides many opportunities and many challenges. In the first article of this three-part series, we look at what blockchain technology is and how it can be used by lottery operators.

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In the second article of this series, we look more closely into how blockchain technology is being exploited by those involved in illegal lotteries and gambling operations. While illegal betting is a problem that long precedes cryptocurrencies, the borderless, digital, censorship-resistant features of the technology throw up new issues for lottery regulators and licensed industry operators.

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Carefully leveraging the power of the 'curiosity gap' to extend an experience, increase entertainment value, and deepen engagement over time strengthens customer loyalty and results in continued growth. For Pollard Banknote, this means continuing to explore new ideas and innovative concepts and customizing the right solutions for each specific jurisdiction to help our lottery partners maximize revenues for the good causes they support.



LEADING THE JOURNEY INSPIRING THE FUTURE.

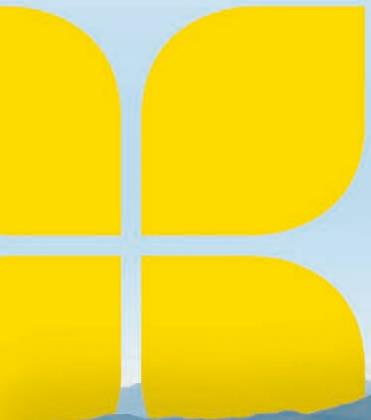
To be safe, we're putting a little distance in our schedule.

The World Lottery Summit is an opportunity to learn, engage and, most importantly, connect as an industry. And we want to keep it that way.

To ensure we can safely deliver a world-class event and give you the opportunity to experience the beauty and excitement (and restaurants!) of Vancouver, we've decided to postpone WLS 2020 to 2022 due to concerns with COVID-19.

We'll keep you informed as we continue to plan and adapt, and we look forward to seeing you in Vancouver for WLS 2022.

Save the date: Oct 16-20, 2022



EDITORIAL

From a medieval marketplace to blockchain technology: Lotteries yesterday and today



Luca Esposito
WLA Executive Director

As we are all aware, technology continues to evolve impacting every aspect of our lives. For the past decade, blockchain technology has continued to grow in importance, particularly in the area of cryptocurrency. In recent years we have seen several interesting benefits that blockchain technology can offer the lottery sector, such as enhanced security or tamper-resistant random number generation to name a few. But with all new technologies there is always a dark side. Illegal lottery and betting operations are using cryptocurrency – digital currencies that use blockchain technology to record and secure every transaction – to anonymously transfer funds to betting agents and to launder profits taken from illegal betting. The Asian Racing Federation (ARF) recently issued a comprehensive report on the use of cryptocurrency by illegal lottery and betting operations in Asia. The report has many insights relevant to the world lottery community. In this issue of the WLA magazine we take a close look at blockchain technology, how it is affecting the lottery sector for good and for evil, and highlight the exemplary work that the ARF is doing in confronting illegal betting operations in Asia.

In this issue we also celebrate the history of the lottery together with the Belgian National Lottery. In a medieval marketplace, in Bruges, Belgium, the first lottery for cash prizes was held in 1441. The lottery was such a success that within a short time the idea spread across Europe giving birth to the lottery as we know it today. To mark this historic event, the National Lottery of Belgium is organizing an exhibition on the origin of the lottery in medieval Flanders. The event will coincide with an EL legal seminar to take place with WLA support.

On the pandemic front, lotteries around the globe have seen an almost miraculous recovery after a turbulent 2020, with growth this year estimated to be now over 5%. Digital lottery platforms

continue to grow on the back of the pandemic, with a growth rate this year estimated now to be over 35%. H2GC is now projecting the total global gross win across the lottery sector to be returning to pre-pandemic levels by the end of 2022. But it remains to be seen if the gains made in the market in recent months will be sustainable going forward. A thorough and extensive report on the lottery sectors COVID-19 recovery is also included in this issue of the WLA magazine.

In other news, the WLA has been doing its part in the fight to keep sports fair, honest, and transparent. Despite the efforts of sports organizations to promote good governance, the world of sports is still plagued with corruption. Integrity, fairness, and honesty are as essential for sports as they are for the lottery sector. As such, the world lottery community has an obligation to do all it can to contribute to the fight against the manipulation of sports competitions. In 2014 the Council of Europe established the Convention on the Manipulation of Sports Competition – also known as the Macolin Convention. The WLA was among the parties that created the initial draft of the Macolin Convention. The final draft of the Macolin Convention was the combined effort of over 50 states worldwide. Since the Macolin Convention was established, it has been staunchly supported by the WLA, the European Lotteries and the Global Lottery Monitoring System. We are currently working on a guide to the Macolin Convention for members of the world lottery community. The guide provides brief history of the Macolin Convention and outlines some of its most important provisions. It also explains why the Macolin Convention is important to lottery and sports betting sector, and how WLA member lotteries can play a vital role in getting the Macolin Convention ratified by state legislators in their respective countries. The Guide to the Macolin Convention will be completed in the coming days and distributed to WLA members in PDF format.

With that I wish you pleasant reading, and best wishes to WLA members around the globe.

International cooperation is essential to the longevity of our industry

Interview with WLA President, Rebecca Paul

Change is all around us. Most recently, the COVID-19 pandemic has forced us to change the way we live and work. In many cases, we are now working remotely, leveraging numerous technological innovations. Expounding on this theme, we spoke in an informal interview with WLA President Rebecca Paul about blockchain technology, illegal betting operations, and the lottery sector's remarkable recovery from the COVID-19 pandemic.

This issue of the WLA magazine features an article on blockchain technology and its potential use in the lottery sector.

Do you think blockchain technology can provide new opportunities for lotteries, suppliers, and the player base?

This is such a creative and innovative industry, and it has to be to continue to keep its offerings exciting for players while ensuring its security. Any time a new technology comes along the market is going to dictate what those new opportunities are. With blockchain technology, that process is going to be no different. Right now leaders across the world are familiarizing themselves with the capabilities of blockchain. As that familiarity grows and there are increased levels of adoption, those opportunities are going to reveal themselves to the industry.

Illegal betting operations often seem to be swifter and more agile than government-authorized lottery and betting operations in adapting to new technologies such as blockchain. In this way, illegal operators can rapidly find loopholes in existing gaming regulations. What does the regulated lottery and betting community need to do to up its game in this regard?

The responsibility of working to be a step ahead of illegal betting operations is always going to lie with the regulated lottery and betting community. What the industry needs to do is what it has always done, which is to educate itself about the new technology and try to look ahead of the curve at all the possibilities where the technology can be exploited to undermine the regulated industry. It's not easy, and it's not quick. But it's the necessary work of regulators across the world to be more agile, swift, and cognizant of emerging

technologies and their potential for disruption of regulated markets.

To paraphrase Charles Darwin, "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change." Do you feel the lottery sector needs to become more adaptable to change?

I think the global COVID experience showed that this industry is terrific at adapting during unprecedented times. There are always ways to become more adaptable, and that is why coming together as an organization or an industry to share best practices and debrief is so, so important.

We can't capitalize on lessons learned if we don't take the time to understand what it is exactly that we learned. Then we need to share that information and those lessons so that the industry can become more adaptable and stronger.

There is always going to be something coming around the corner. Whether it's a global pandemic or a new technology like blockchain, we have to anticipate and we have to work at anticipating. That never ends. So even though I think the industry is great at innovation and adaptation, we must never stop or rest on our laurels.

An organization often embraces new technology when it understands that this is necessary for its business to survive. Do you believe the use of blockchain technologies in the lottery and betting sector is inevitable?

Inevitable is a strong word, but once something like blockchain technology has

been released, it's typically very hard to put back into the box. As use of the technology becomes more mainstream and the opportunities reveal themselves, then it is only reasonable that the innovation and creativity the global lottery industry is known for will find the spaces where this technology makes sense for usage.

The line between the benefits that technologies like blockchain offer and their potential for criminal abuse is indeed tenuous. Do you think the lottery sector should embrace blockchain and cryptocurrencies and exploit the benefits they offer, or should we seek to have the technology banned for its potential misuse?

I'm not sure banning something is the right way to go about it because, again, in my experience, banning something is a really quick way to increase interest in it.

Any new technology has the potential for criminal abuse that comes with the potential for benefits. It's our responsibility to educate ourselves and explore it, not recklessly, but so we can come to understand it. After we've executed the appropriate due diligence, we can begin to know the opportunities and challenges of leveraging a new technology in the lottery and betting industries.

Over the last five years, digital payments have grown exponentially. In particular, digital payments have become a necessity in the past two years for many consumers who are increasingly relying on Internet shopping during the COVID-19 pandemic. Do you feel that the rapid increase in digital payments has exacerbated the use of cryptocurrencies in illegal lottery and betting operations?



Each lottery will have its own opportunities and challenges based upon its jurisdiction. I think from a high-level, the main opportunity is carving out more space in the digital commerce world. If we're going to fulfill our respective missions while digital commerce grows and grows, then we have to find ways to work with digital commerce, to the degree we can, without alienating our retailers.

To that point, I agree that the general public is exponentially more comfortable with digital payments than they were five years ago, and that has undoubtedly made more people open to the idea of cryptocurrencies and their usage. To me, however, there's still a significant gap between your mainstream lottery player and those using cryptocurrencies in illegal lottery and betting operations. But that gap can close quickly, particularly in the digital age.

The world lottery community has united in the fight against the manipulation of sports competitions through the work of the Global Lottery Monitoring System (GLMS). Experience with the GLMS shows that international cooperation between all relevant stakeholders can be an effective countermeasure in this fight. Do you maintain a similar approach would be effective in thwarting illegal online lottery and betting operations in general?

Any time there is international cooperation between relevant stakeholders that's a good thing. We've come together to share what we know and what we've learned, so there can be effective countermeasures taken. That is why the WLA and other organizations are so important to the industry. Rarely is increased cooperation a bad thing. Rarely is it a bad thing to understand what challenge another lottery faced and how they handled it. Knowledge and sharing it – that cooperation – is everything. GLMS is a great example of this, and I am very proud the Tennessee Lottery was the first U.S. lottery to join.

This issue of the magazine also contains an extensive update on the COVID-19 pandemic and its impact on the lottery and sports betting sector. Almost two years into the COVID-19 pandemic, the lottery sector has regrouped and recovered, moving its gaming products online, optimizing retail sales channels, and innovating game content through new product launches – with the result that in many places, the industry is currently enjoying record revenues. What can you say about the spirit of the global lottery community that has enabled this almost miraculous comeback?

I've watched this industry take on and overcome challenges throughout my career. So at a certain level to watch the way it recovered was not surprising. However, as we all adapted and adjusted, many of our members around the world took additional steps to care for their constituents, going above and beyond their usual charitable endeavors to help make a difference in the fight against COVID-19. Their sense of solidarity and pragmatism reflected positively on all lotteries. Those joining spirits – that spirit of creativity and adaptation and that spirit of going above and beyond – are truly inspiring, and give me a tremendous amount of hope for what the future of this industry will bring to our global community.

The pandemic has caused fundamental changes in consumers' habits. Shopping online has become a way of life for many people around the globe and digital sales channels are no longer a 'nice-to-have' option for the service sector of the economy. Are we seeing the beginning in a fundamental change in the way people play the lottery, with a move away from traditional retail networks? Do you think that online gaming will now firmly establish itself as a primary sales channel for lotteries across the globe?

Possibly, but I really don't see a time when lotteries are fully digitized. And of course this depends heavily on the laws and rules in any given jurisdiction.

I do think that lotteries will become more and more digital because everything is going that way. But as we just experienced through the global pandemic, social interaction is very important to us all. And playing the lottery can be a very social experience. I like to say that as long as cars use gas, there will always be an in-store retailer component to the purchase of lottery products. Sales via brick-and-mortar retail locations and digital sales can compliment each other in the retail world. Navigating this period of transition is about fully understanding the relationships a lottery has with its retailers while also understanding the vast array of digital tools we might all have to drive business. You take those two tracks and work together to leverage the power of digital technology so the lottery and its retail partners can continue to thrive.

You recently participated in the WLA/EL Responsible Worldwide Webinar Week. The webinar addressed the post-pandemic era and shared numerous case studies with the webinar participants on responsible gaming and other aspects of social responsibility that are increasingly relevant for the lottery sector. Could you say something about information sharing in this regard and why it is of value for members of the world lottery community to participate in these kinds of professional enhancement events?

The COVID-19 crisis in 2020 forced us to move most of our live events and seminars online and to imagine new formats for the learning opportunities we offered our members in 2021.

The global industry is constantly tested to stay innovative and creative. Members can be assured the WLA understands its key role in sharing ideas and best practices among members. As I stated earlier, international cooperation is a good thing, and I would add that it's essential to ensuring the longevity of our industry. It is particularly essential as our jurisdictional borders become more and more blurry with new technologies coming online and digital commerce growing. It is a fast-changing and increasingly uncertain environment for lotteries.

The WLA stands ready to help its members demonstrate the agility needed to stay ahead of the times, so we can always be there for the good causes we support around the world.

Blockchain and cryptocurrencies in lotteries and gaming

Blockchain and cryptocurrencies have received much attention over recent years, and their evolution is a lesson in the application of technology for good and ill. Blockchains have found legitimate utility in supply chain, financial clearing and settlement, and manufacturing while also being used to set up applications offering illicit gambling or trading activities. Cryptocurrencies, the first use case of blockchains, have gained increasing prominence as an asset class, including institutional adoption. In contrast, their unregulated status and use in underground online operations mean they continue to pose issues for law enforcement agencies around the globe.

For the lottery sector, blockchain throws up many opportunities and many challenges.

For the lottery sector, blockchain throws up many opportunities and many challenges. Here, we'll look at the features of blockchain technology and how it can be used by lottery operators, including some examples. We'll also examine some of the issues resulting from illegal gaming and gambling operations on blockchain and making use of cryptocurrencies.

What is a blockchain?

At its simplest, a blockchain is a ledger of information about transactions. However, its value is best explained with reference to two terms commonly used in blockchain parlance: the double-spend problem and distributed ledgers.

The double-spend problem refers to an issue that faced researchers who had spent many years attempting to invent a kind of digital cash. The challenge is that a unit of digital currency is simply a file, like a Word or pdf document. It can be copied and distributed very easily – not a feature that lends itself well to a monetary system. So researchers had to find a way to secure digital scarcity.

When Bitcoin launched in 2009, it was the first time anyone had solved this problem. Bitcoin uses a single ledger to maintain records of every transaction relating to every bitcoin in history. When Alice sends Bob one bitcoin, the Bitcoin blockchain updates both of their accounts to reflect the new balance in the ledger.

In Bitcoin, a global group of miners, or nodes, maintain the state of the ledger, and so it's referred to as distributed. Every miner holds exactly the same copy of the ledger with exactly the same data. Miners are incentivized with rewards in Bitcoin to keep the ledger accurate and up to date. They add groups of transactions in blocks, and each block is tied to its predecessor using a cryptographic algorithm.

The algorithm is implemented in such a way that if someone attempts to change a block at some point in history, the change would be visible across all subsequent blocks through mathematical results that would no longer match. That person would also have to control a majority of the nodes in order to "trick them all" into processing the incorrect information, which would inevitably be noticed by the rest of the participants, hopefully resulting in them collaborating to prevent the attack and protect their economic interests in the network.

Features of a blockchain

As a result of this type of engineering design, blockchains often have several key properties:

- **Decentralized or distributed** – the more nodes on the network, the more difficult it becomes to corrupt the blockchain. No central authority has control over the network. Moreover, the network can keep running even if one or more nodes goes down, making blockchains difficult to regulate by any single jurisdiction
- **Transparency** – because the network is open, anyone can join and become a node on a public blockchain. Therefore, all transactions are public and visible, even if their encrypted contents cannot be understood
- **Permanence** – once entered and confirmed into a block, transactions are immutable and cannot be altered, only updated by a later transaction
- **Security** – blockchain users must possess or enter a secret key to make a transaction, which serves as their digital signature.

It's worth mentioning that there are implementations of distributed ledgers that may be private or permissioned – primarily due to privacy and control concerns. These are generally operated by industry consortia and don't necessarily fit all of the conditions listed above.

Finally, smart contracts are a feature that emerged in 2015 when the Ethereum blockchain was launched. Smart contracts took blockchains from being a mere ledger of digital currency movements to a platform capable of handling complex transactions and computations. A smart contract is an autonomous program that executes based on "if-this-then-that" logic.

At its simplest, a smart contract can level up Bitcoin's functionality to allow custom logic operations to execute such as someone to automatically receive TokenB when they send TokenA to a particular address or to receive some form of interest/loans on the tokens they "lock up" into a contract. However, smart contracts can be programmed for a broad array of more traditional or complex applications and use cases, which we will now explore in the context of lotteries and gaming.

Blockchain in lotteries – Potential use cases

Blockchain's properties offer several opportunities within the lottery sector. Most notably, the fact that blockchain data is stored publicly and in a way that cannot be manipulated or falsified offers significant potential to improve trust between users and operators. Furthermore, if such transparency becomes the standard among lottery and gaming operators, it could help to reduce or eliminate opportunities for fraudulent actors to enter the industry.

Ticket sales recorded on a blockchain could also help to prevent ticket fraud. If a user can't see their ticket entered into the system, they know it's not a

legitimate purchase. Similarly, it could reduce incidences of fraudulent claims for operators, who would be able to reference a verifiable record of ticket sale transactions traceable back to each vendor. In turn, a vendor would have signed the sale transaction using their secret key.

Transparency in lottery financing is also an area where blockchain could offer opportunities. While blockchain transaction data on public platforms such as Ethereum is openly available to everyone, advance.es in cryptography mean that it's becoming easier for enterprises to find a more optimal balance between transparency and privacy.

Depending on the platform, it would be feasible, for example, to publish aggregated or high-level financial information similar to an annual report or to report the charities in which funds were distributed, but without necessarily disclosing transactional data to the public. However, transactions are still verified by a decentralized blockchain network; therefore, the basis of the published data can still be trusted.

The fact that blockchain data is stored publicly and in a way that cannot be manipulated or falsified offers significant potential to improve trust between lottery operators and their players.

Random Number Generation

Much of the above is purely speculative. However, there's also the fact that blockchains were invented to handle transactions of value among a global online user base – a fact that is already being exploited by operators of blockchain-based lottery platforms and games. Furthermore, blockchain developers have also found ways to overcome shortcomings that previously existed in the technology, such as the challenge of generating random numbers.

In a blockchain system, everything must be verifiable by the network's nodes, from the timestamp of the block to the nature of the transactions. This presents a problem for data that needs to be collected from outside the blockchain, which includes random numbers. If a random number enters the system, how can the nodes verify its randomness?

Blockchain-based solutions now exist where independent validation/data, or "oracle" nodes will individually attest to the randomness of a number and receive reputation scorings for the accuracy of their attestation. In this way, based on the reputation of a large enough group of nodes, a blockchain network can generate a verifiable random number that can be used in other blockchains.

So all the technology already exists. In principle, anyone can create a globally accessible, fully automated lottery game that runs without human intervention on a censorship-resistant blockchain platform where users can pay and win instantly with digital currencies. Therefore, it should hardly be a surprise that people are actually doing it.

Decentralized lotteries in practice

There are now hundreds, if not thousands, of applications running on various blockchain platforms that could fall under the banner of lotteries or lottery-type games. However, in reality, there are only a few worthy of individual scrutiny.

PoolTogether

PoolTogether is perhaps the one blockchain lottery application that best fits the description above in that it's entirely automated and runs on cryptocurrency.

PoolTogether falls under the banner of a growing segment of blockchain applications known as decentralized finance, or DeFi. DeFi makes use of smart contracts to automate financial markets. For example, users can trade tokens in a decentralized exchange or deposit their cryptocurrencies into lending pools and earn interest on them.

PoolTogether uses the latter feature to operate a no-loss lottery where users deposit their cryptocurrencies into PoolTogether's smart contracts, which sends the accumulated funds into a lending application to earn interest for one week.

At the end of the week, a random number generator selects the winners who receive the interest payments as prizes. Everyone gets their initial stake back, which is automatically entered into the next week's draw unless a player opts to withdraw it. The protocol is currently handling around USD 175 million in weekly deposits and paying out around USD 100,000 in prizes.

Many DeFi protocols, PoolTogether included, aren't operated by any centralized company or individuals.

Once the relevant smart contracts and user interfaces are up and running, the project developers effectively decentralize the management of the application through a token sale. Token holders then vote on matters regarding the protocol and its development, with their voting rights programmed into the token. However, token holders don't make any profit from the protocol itself, which is run as a self-funding operation.

In this way, PoolTogether manages to avoid having a head office, or a registered entity. It's possible a regulator could have the user interface taken down by working with parties such as domain name registrars, but the smart contracts would continue to live on the blockchain, and anyone could set up another user interface hosted in another country.

Lotto Nation and Quanta

Taking the idea of a decentralized lottery a step further, Lotto Nation is another project that aims to allow anyone to set up a decentralized lottery themselves. Unlike PoolTogether, Lotto Nation is a company backed by Nordic software provider Winners Group, so it has a strong pedigree in the lotto industry. The company has effectively created a set of smart contracts on the Ethereum blockchain, which can implement a blockchain lottery out of the box and has white-labelled them for anyone to use.

A final example is Quanta, which launched a blockchain lottery project in 2015 and gained an OGRA gambling license from the Isle of Man Gambling Supervising Commission in 2017. As such, it claims to be the first fully compliant blockchain lottery in the world. Another white-label platform, Quanta sells itself on the trust and transparency characteristics of blockchain.

As a technology, blockchain itself is agnostic regarding its utility, much like the Internet. In the context of lotteries and gaming, it offers some opportunities to solve legacy challenges and code legal requirements into smart contracts. However, the globally accessible and unregulated nature of blockchain and cryptocurrencies also throws up some challenges and issues for legitimate lottery operators.

In the next article, we will examine the implications of cryptocurrencies and blockchain in illegal gaming operations and what can be done to fight these issues.



How blockchain and cryptocurrencies are used in illegal gaming

In the first part of this segment, we undertook a relatively neutral examination of how cryptocurrencies and blockchain can be used in lotteries and gaming. In this piece, we'll look more closely at how the technology is being exploited by those involved in illegal lotteries and gambling operations. While illegal betting is a problem that long precedes cryptocurrencies, the borderless, digital, censorship-resistant features of the technology throw up new issues for lottery regulators and licensed industry operators.

In May this year, the Asian Racing Federation (ARF) issued a report that laid bare the extent of the challenge across the continent. The report identified four areas where cryptocurrencies and blockchain are being used in illegal lotteries and gaming operations:

- As an alternative to fiat currencies and established fiat payment processes
- In gambling applications built on blockchain technology
- Transferring funds to betting agents
- Laundering profits taken from illegal betting.

Cryptocurrencies as a payment for illegal gambling

The ARF reports that nearly one-fifth of over 4,000 betting websites accept one or more cryptocurrencies, a number that doesn't even include unlicensed websites. It also states that the four most popular sportsbooks accepting cryptocurrency payments are licensed in Curaçao. All offer products that would typically be illegal in many jurisdictions, such as in-play markets on all types of sports, e-sports, and casino games.

Other research backs up the ARF's findings. For instance, in 2020, a study from NGO Transparency International found that Asia's illicit gambling market was worth USD 400 billion in 2018. And neither is the problem limited to Asia.

A recent investigation by Wired Magazine uncovered that online cryptocurrency casinos are targeting prominent influencers on streaming platform Twitch, which is popular with gamers. Wired found one influencer who

streamed videos of himself winning as much as USD 400,000 each day in cryptocurrencies in uninterrupted winning streaks while promoting a gambling site.

Cryptocurrencies are an attractive medium of payment for illegal operators, as they don't require any Know Your Customer checks or traditional payment processors to operate.

Cryptocurrencies are an attractive medium of payment for illegal operators, as they don't require any Know Your Customer (KYC) checks or traditional payment processors to operate. Furthermore, an operator can take payment quickly and without any risk of chargeback, 24/7, from anywhere in the world.

Keeping up with the success and simplicity of these illegal operators may be daunting, however, that's not to say that there is nothing regulators can do. The French National Gaming Authority (Autorité nationale des jeux) recently obtained a court order requiring Internet service providers to block access to two well-known online gaming sites offering cryptocurrency payments.

Blockchain-based lottery and gambling applications

Beyond accepting cryptocurrencies as payment for gambling operations, blockchain technology allows anyone to configure the smart contracts necessary to run a gambling application. In the previous segment, we examined PoolTogether, a decentralized no-loss lottery application that runs completely autonomously on the Ethereum blockchain.

The ARF report highlights other examples, naming Tron, a blockchain platform that's heavily skewed towards simple dice-type gambling applications due to its low transaction fees. It also name-checks Augur, an Ethereum-based decentralized marketplace for

"predictions" – effectively bets. Like PoolTogether, Augur is one of the many applications that fall under the umbrella of "decentralized finance," or DeFi, which demonstrates how speculative many of these so-called financial applications really are under the hood.

There's already plenty of conjecture around how and when regulators will tackle DeFi and the existence of unlicensed gambling activities dressed up as finance. Indeed, it's evident that they have their eye on the situation. However, there are inevitable challenges with policing, particularly where applications have anonymous founders or development teams. The Internet generally has no jurisdictional boundaries, and when attempting to enforce single-jurisdiction regulations in such a place, the difficulties in enforcement are high and could require a technical enforcement mechanism or a different method of enforcement rather than relying on jurisdictional authority.

Transferring funds to betting agents

Cryptocurrencies are increasingly becoming the means by which bettors can access betting agents such as Citibet, facilitating issues such as race-fixing or match-fixing. As unregulated marketplaces, these agents have no obligation to report on suspicious activities and indeed make a profit from bet-matching, making them

a hive for illicit activity in the industry. The Hong Kong Jockey Club has previously highlighted this issue to the press, including the role that cryptocurrencies play.

The ARF report found that a key principal at an online crypto-only sports bookmaker had a criminal record and had been disqualified as a company director, linked to previous allegations of match-fixing and corruption.

Laundering profits from illegal betting

Another key finding from the ARF report is that betting operators are increasingly turning to cryptocurrencies as a way of laundering their illicit proceeds. It uses Macau's notorious junket industry as a prominent example, highlighting how the Chinese government estimates that illegal betting operators transfer around one trillion Chinese yuan (USD 154 billion) in gambling-related funds out of the country.

In fact, there are multiple facets to the challenge of illegal gambling operations and cryptocurrency money laundering. To be clear – cryptocurrencies are not inherently anonymous, as if you know someone's public address, you can trace all of their transactions on the public blockchain ledger. However, due to the availability of privacy-preserving technologies, it's still feasible to obscure financial trails with some know-how.



Therefore, cryptocurrencies are still used by money launderers involved in all kinds of illicit activities. Blockchain analytics firm Chainalysis was able to trace USD 2.8 billion in Bitcoin that moved between known criminal entities and exchanges in 2019 alone.

Another facet to the problem is that money launderers will often set up online casinos or use gambling sites as a way of laundering their ill-gotten gains. Another report from Chainalysis found that gambling websites are the most popular recipients of funds procured from online scams.

The good news is that the cryptocurrency industry is steadily picking up its game in this regard. The reason that so many criminals now use illegal gambling sites is because regulation has made it difficult for them to use centrally operated cryptocurrency exchanges. These days, most of them require a KYC check, making them unviable as an outlet for money laundering. However, there's plenty of work still to do in making sure cryptocurrency is less attractive as a means of cleaning dirty money.

Harnessing the benefits

The cases outlined here may seem like enough to make an argument for banning cryptocurrencies and blockchain outright. However, it's not so straightforward. In fact, digital currencies and blockchain could also prove to be useful in the fight against illegal lotteries, gambling, and gaming operations.

For example, many governments are examining the use of state-backed digital currencies that may ultimately replace cash. They're known as Central Bank Digital Currencies or CBDCs, and China is currently the nation with the most advanced version of a CBDC. It's based on a centralized ledger operated by the Chinese government, and even still at the trial stage, has recently reached USD 5.3 billion in transaction value.

Now, it seems that Macau could follow suit with its own digital currency, leading to speculation that such a move could cause irreparable damage to the illegal gambling industry.

This is just one example. As we covered in the previous segment, blockchain has properties that could be deployed for good in the lottery and gambling sector – transparency, security, and trustlessness, among others.

Overall, regulation has a long way to go to catch up with developments in the

cryptocurrency and blockchain sector. Yet, sensible regulation seems to be one of the most powerful weapons against the use of these technologies for illicit purposes. It will certainly be an invaluable tool to prevent licensed industry operators from being damaged by unlawful operations. Nevertheless, legitimate players should not be deterred from exploring applications of blockchain and cryptocurrencies where they're permitted and can bring meaningful value.

There is a significant open question that potentially can be answered through the legal and regulated use of blockchain. Can industry operators offer the wide range of games, everywhere the world, that can compete with their illegal competitors? It is possible, even probable, that the majority of online bettors would prefer a legal way to play every time, while still seeing that their local charities and regions benefit from the operation.

Regulation that moves to a global level with local payout using standardized blockchain smart contracts which enforce a globally-agreed set of principals could be a way to authorize a larger set of games or gambling options when folks wish to use their Internet-centric connectivity and coins to play. Perhaps after all, the existence of this new and unregulated market points to an opportunity to re-engineer the status quo to fit with the demands of a more digital and global society.



Addressing the challenges of illicit use of cryptocurrencies in gambling – Spotlight on the Asian Racing Federation

In the previous article in this series covering cryptocurrencies and their use in illegal betting, we referred to a report issued by the Asian Racing Federation (ARF) that highlighted the extent of the issue. The ARF plays an instrumental role in bringing attention to the issues around illegal betting in Asia, including where cryptocurrency is involved. The Federation also identifies and supports measures to combat the problem.

For the final article in this series, we examine some of the best practices outlined by the ARF and how they can be applied in the context of cryptocurrencies and illegal gambling, with some insight from the ARF Council on Anti-Illegal Betting and Related Financial Crime chairman, Martin Purbrick.

In October 2020, the ARF issued an extensive report titled "Good Practices in Addressing Illegal Betting: A Handbook for Racing and Sports Organisations to Uphold Integrity." The report highlights many of the challenges discussed in the previous article and how they impact the broader betting industry. Martin Purbrick summarized the main issues:

"Most cryptocurrency betting operators are unlicensed or licensed by ineffective

regulatory regimes, amplifying financial crime risks. They can allow bettors to bet anonymously and evade due diligence and know your customer requirements. They are also being used by organized crime-linked illegal operators to launder profits and fund operations."

Purbrick elaborated further, stating that the existence of such operators creates problems for legitimate industry players: "Cryptocurrencies are a competitive threat to state-authorized lotteries and betting operators, and by extension, a threat to societies which benefit from well-regulated betting tax and duties, and their use by illegal or offshore operators may lead to more regulatory overhead and scrutiny on well-regulated operators."



Identifying best practices

With an understanding of the problem, what steps should licensed gambling operators be taking to address the challenges of illicit operations aided by cryptocurrencies? The ARF report outlines several key areas of focus.

Monitoring and analysis of transactions

Firstly, monitoring and analysis are key to identifying any anomalies in the system, such as agents illegally accepting cryptocurrencies as payment. Automated systems have an important role to play in ensuring consistency and structure in data gathering and analysis. However, human assessment is always necessary. Human intelligence can consider factors not programmed into algorithms and spot where corrupt players have taken steps to avoid being caught out by automated systems.

Commercial bet monitoring organizations can provide support, both to smaller gambling operators who don't have the in-house capabilities to develop an automated system and for larger industry players who may wish to complement their existing monitoring solutions.

Determining intelligence capabilities

Operators should also consider what type of intelligence capabilities

they need to support their efforts in fighting illegal gambling, including the use of cryptocurrencies. The ARF report highlights the efforts in Australia where the Australian Criminal Intelligence Commission joined forces with Australia's National Integrity of Sport Unit to create a dedicated Sports Betting Integrity Unit. The unit exists to establish intelligence around crime in Australian sport, including the bookmaking segment.

Intelligence is an increasingly complex field, with operators and regulators increasingly using open-source intelligence, which can include a vast amount of information already in the public domain. This information may come from social media or online forums where bettors convene. These sources complement the more traditional routes for intelligence gathering, which include industry experts, professional bettors, government departments, or law enforcement agencies.

Effective investigations

Cryptocurrencies represent a particular challenge for licensed operators and law enforcement agencies. As a relatively new technology, many people are still unfamiliar with how they work and how the data on the underlying blockchain can be used as a source of intelligence in itself.

There's a need for those involved in fighting illegal gambling operations to become trained and educated in how corrupt individuals are using cryptocurrencies, such as payment in illegal gambling operations, and how to identify this activity.

Therefore, there's a need for those involved in fighting illegal gambling operations to become trained and educated in how corrupt individuals are using cryptocurrencies, such as payment in illegal gambling operations, and how to identify this activity.

Collaboration between stakeholders is key

During our conversation with Martin Purbrick, he also highlighted the challenges of staying one step ahead of these operators.

"In general, illegal operations will typically be swifter and more agile as they have zero regulatory overhead and zero

incentive to protect the consumer or follow best-practice Anti-Money Laundering (AML) and Responsible Gambling guidelines."

As such, he outlines the need for better networking and connections, another key best practice from the ARF report: "A vital point is enhanced stakeholder collaboration between regulated operators, sports bodies, law enforcement, media, and regulators."

So with regards to collaboration, what does good look like? The ARF identifies that thanks to the proliferation of online betting sites and the increasing use of technology like cryptocurrencies, fighting illegal gambling has become too much for legitimate operators and law enforcement agencies to achieve by themselves. Instead, it's necessary to engage a larger group of stakeholders in the process.

For instance, government policymakers can help shape the legislative framework to recognize the loopholes being exploited by corrupt actors. News media and industry publications can help to spread awareness of the problems.

Financial firms, including banks and cryptocurrency exchanges, can help stem money flows to and from illicit operations.

Internet service providers and search engine companies can identify illegal websites and services and block them.

Illustrating the scale of complexity

The final segment of the ARF report outlines one case from 2019 that contained various elements of financial crime, including a cryptocurrency Ponzi scheme and money laundering in the horseracing bloodstock industry. The operators behind One Coin managed to scam USD 4 billion from investors between 2014 and 2016 until various government and law enforcement agencies intervened.

In a criminal trial held in the US relating to the case, the owner of one of the largest bloodstock businesses in the world became implicated when a witness claimed he had been using One Coin to launder money.

The investigation into these allegations is ongoing. However, the case illustrates the extent to which financial crime can permeate multiple industries and involve many participants. Illegal operators deploy a variety of tricks to achieve their aims and create complex webs that cannot be untangled by one

individual or entity working alone.

Therefore, collaboration with a broad group of stakeholders, including those in related industry sectors, is the most effective way to identify, investigate, and address the problems.

Finally, it's incumbent upon legitimate operators of lotteries and gambling services to demonstrate their commitment to transparency and compliance by following all necessary steps to ascertain who is involved in any given transaction. Furthermore, there must also be a willingness to work together with law and policymakers to ensure solutions are fit for purpose and allow licensed participants the freedom to operate within their own jurisdictions.

To subscribe to the ARF Council on Anti-Illegal Betting and Related Financial Crime's reports and Quarterly Bulletins, visit: www.asianracing.org/aib/subscribe

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Necessity is the mother of invention

In the mid-15th century, Philip the Good, Duke of Burgundy, did the lottery industry an unexpected favor when he imposed a hefty fine on the city of Bruges as punishment for a violent revolt by the local craft guilds. The fine was so huge, and the restive population so hostile to higher taxes, that the city authorities needed to innovate to create a new source of revenues. Their landmark decision nearly 600 years ago was to change the European lottery landscape forever...

The wine porters or *schroders* of medieval Bruges (now part of Flanders in Belgium) had the monopoly on unloading barrels of wine in the city's port to be dragged to customers' homes and lowered into their cellars. It was a lucrative craft, because the porters were allowed to levy taxes on the imported barrels and keep the money for themselves in lieu of wages.

The office was a privilege granted for life and awarded by the city for a fee. When a *schroder* died or was fired, a replacement was not found by way of a recruitment process, as it would be today. The job was raffled off. Chance determined who got the job and the economic rent that went with it.

As early as the thirteenth century, these lotteries were held for other matters too, such as allocating prime positions of market stalls, and the proceeds went to fund public works like strengthening the city walls and ramparts.

The lottery goes public

In 1441, when the *schroder's* craft of a man named Pieter Den Hondt was due to be raffled off, the city authorities made an important decision. In addition to the first prize of the municipal office of *schroder*, additional cash prizes of varying amounts

would be offered. As a result, large numbers of people wanted to take part, even if they had no intention of becoming a *schroder*, meaning that a lot more money ended up in the coffers of the Bruges city administration.

The move was a welcome development, helping the city to pay down a huge fine — the equivalent of several years of the municipal budget — imposed by Philip the Good, Duke of Burgundy, as punishment for the 1436 – 1438 revolt by the Bruges guilds. Instead of placing the burden on its citizens to pay this amount through higher taxes, the city decided to offer cash prizes in the lottery to coax them into buying a ticket voluntarily.

The idea quickly took root. Other cities in the region sent envoys to ask for advice and soon copied the Bruges example. Over the next few decades, at least 82 lotteries were created across the Low Countries, before spreading to Germany, Rome, Genoa, and Venice. By the sixteenth century, lotteries existed all over Europe. Even the name given to the 1441 event in Bruges, *lotinghe* — which is based on the Middle Dutch word "lot", meaning "fate" — would be adopted by many other languages: *lotteria*, *loterie*, *lottery*, *lotereya*, etc.



Philip the Good, Duke of Burgundy from 1419 until 1467.

Collective fun, collective benefit

These very early lotteries had all the essential characteristics of the games we know today: They were public events, anyone could take part, and everyone had the same chance of winning. The additional cash prizes persuaded large numbers of people to play, and although the tickets were not cheap — the equivalent of several days' wages — they were affordable by any *burgher* or merchant in medieval times. Players would not run the risk of financial ruin in a reckless game of chance, but would just try their luck for a bit of fun.

Of course players hoped to win a prize, but the collective aspect of taking part and attending the draw together was just as important. The medieval lotteries inevitably turned into festivities. A stand would be erected in the marketplace so the masses could gather for the draw. As trumpets blared, an "innocent hand", the drawperson, would solemnly pull the names of participants from a basket, and a reader would announce whether or not they had won a prize. The habit of writing a saying or poem (often salacious) on the lottery ticket instead of one's own name soon developed, causing hilarity when it was read aloud from the stage.

Nearly 600 years later, this underlying objective of having fun together while collecting funds for good causes still inspires lottery players all over the world and will continue to drive the lottery industry forward. By finding innovative solutions to its own challenges, and sharing the secrets of its success with other jurisdictions, the *burgemeesters* of medieval Bruges laid the foundations for the worldwide lottery community we know and love today!

The festivities continue

To mark the pioneering 1441 lottery in Bruges, the Belgian National Lottery is organizing an exhibition in December on the origins of the game in medieval Flanders. A book is due to be published, and there will be a city walk using virtual reality to immerse participants in the ambiance of the draw as it was then. Special draws of Extra Lotto and EuroMillions will also be held in Bruges to celebrate the anniversary.

"We are proud to be celebrating the anniversary of the world's first cash lottery in 1441. A lot of things have changed in 580 years, but the Bruges aldermen's ability to innovate, inspire the populace, and share their experience with other cities undoubtedly helped to lay the foundations for the vibrant worldwide lottery community we know today."



Jannie Haek
CEO, Belgian National Lottery



Rebecca Paul
President of the WLA

"Good causes around the world today owe a debt of gratitude to Bruges' city leaders during medieval times for their foresight and pragmatism. Lottery players everywhere have embraced the same sense of collective responsibility and upheld the underlying principle of having fun together for the greater public good."

Legal seminar in Bruges, Belgium

To coincide with the 1441 anniversary celebrations, an EL legal seminar with WLA support will be held in Bruges on December 2 – 3, 2021. The seminar will focus on the potential role of taxation in encouraging responsible gaming and quelling the rising tide of illicit and unregulated gaming activities.

COVID-19 update – Lotteries bounce back in 2021



- COVID-19 cases top 240 million worldwide with a confirmed case fatality rate of $\approx 2.1\%$ and an estimated infection fatality rate of $\approx 0.7\%$
- Novel mRNA vaccines developed in record time by Pfizer-BioNTech and Moderna with $\approx 95\%$ vaccine efficacy against the original 'wild'-type virus
- Highly transmissible SARS-CoV-2 Delta variant emerges, with key reproductive number R_0 estimated at between 6 and 7, making Delta as infectious as smallpox
- Multiple countries hit by repeated pandemic waves with global hotspots currently including Israel, Malaysia, the UK, and the US Deep South
- 6.7 billion vaccine doses administered to date in a race against the Delta variant as 48% of the world's population receives at least one dose of a COVID-19 vaccine
- IMF forecasts global real GDP growth of 6% in 2021 and 4.9% in 2022 on the back of a vaccine-powered recovery
- Lotteries rebound after a turbulent 2020, with H2GC estimating 5.3% growth to date in 2021
- The world turns to digital, with H2GC reporting growth in interactive of 37.4% to date in 2021 as land-based gaming declines 19.1% over the corresponding period
- H2GC now projecting total global gross win returning to pre-pandemic levels by end 2022

In this special report – originally published online as part of the WLA Quarterly Lottery Sales Indicator – we report once more on the rapidly unfolding regional and worldwide developments in the fight against COVID-19, and the impact of the pandemic on the lottery industry globally. Initially, the collective response to the pandemic consisted largely of a rolling series of lockdowns across the globe to 'flatten' the epidemiological curve. These lockdowns, while imposed at a tremendous cost to societal wellbeing and economic activity, were essentially the only effective public health mitigation then available in the absence of vaccines. In a triumph of modern medicine, and just over a year after the first documented case of COVID-19, the US Food and Drug Administration (FDA) issued the first

Emergency Use Authorization (EUA) for a COVID-19 vaccine, engineered by Pfizer-BioNTech, on 11 December 2020. This was followed a week later by a second EUA for Moderna's COVID-19 vaccine. EUAs for further vaccines such as the one-shot Janssen COVID-19 vaccine (Johnson & Johnson) followed.

With primary efficacy analysis of Phase III clinical trials demonstrating the Pfizer-BioNTech and Moderna COVID-19 vaccines to be 94% or better effective against the original 'wild' strain of COVID-19, it appeared for a short interval that the advent of good vaccines would soon bring the pandemic to a comparatively swift conclusion, at least across North America and Europe.

However, the emergence of the SARS-CoV-2 Delta variant (B.1.617.2) in late 2020 dashed such hopes. Being at least 50% more transmissible than the original 'wild' strain of the SARS-CoV-2 virus, exhibiting some vaccine escape, and appearing to have more serious consequences for those infected – especially children – transmission rates have continued to climb, even as significant populations across Europe and North America have been inoculated. Indeed, *Figure 1* reveals that SARS-CoV-2 B.1.617.2 is one of the most contagious respiratory viruses ever known. With worldwide daily cases at the time of writing now at almost 80% of their all-time peak despite aggressive vaccination campaigns (see *Figure 2*), many epidemiologists believe the pandemic still has some distance to run.

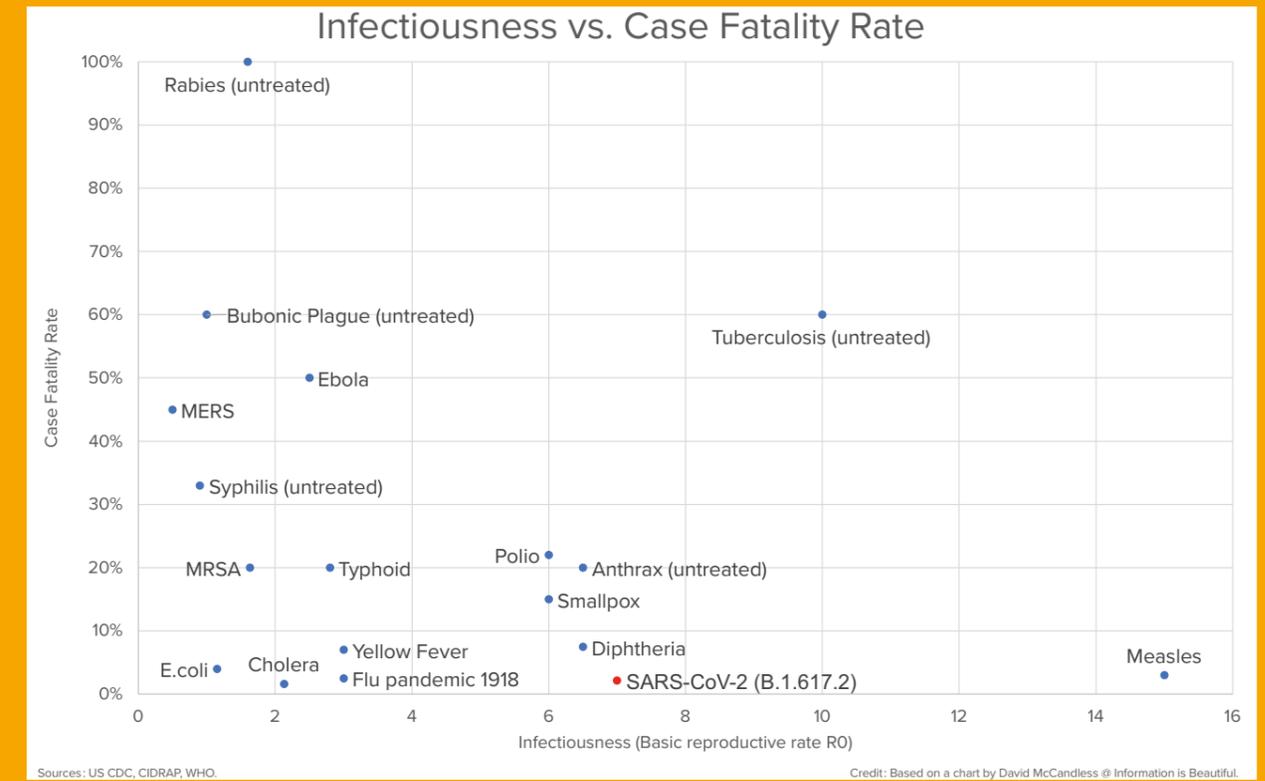


Figure 1. Comparison of SARS-CoV-2 (Delta variant) to common infectious diseases.

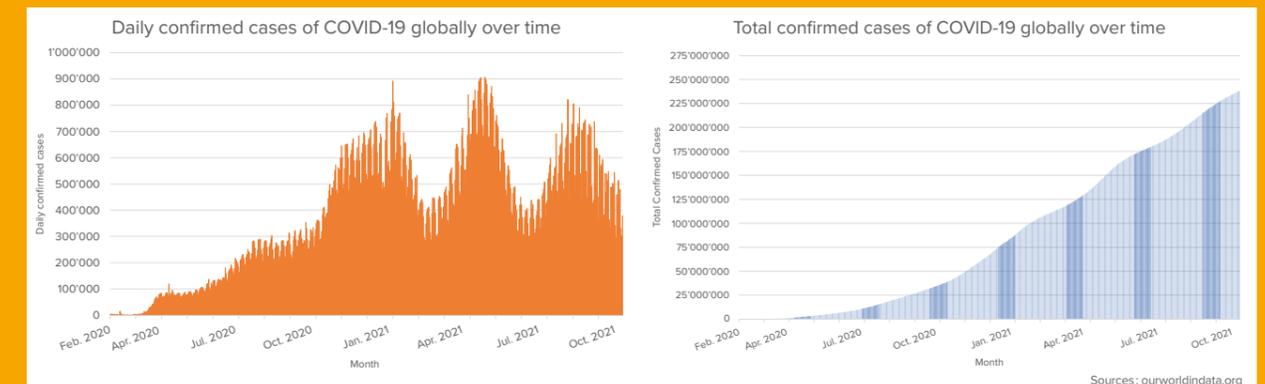
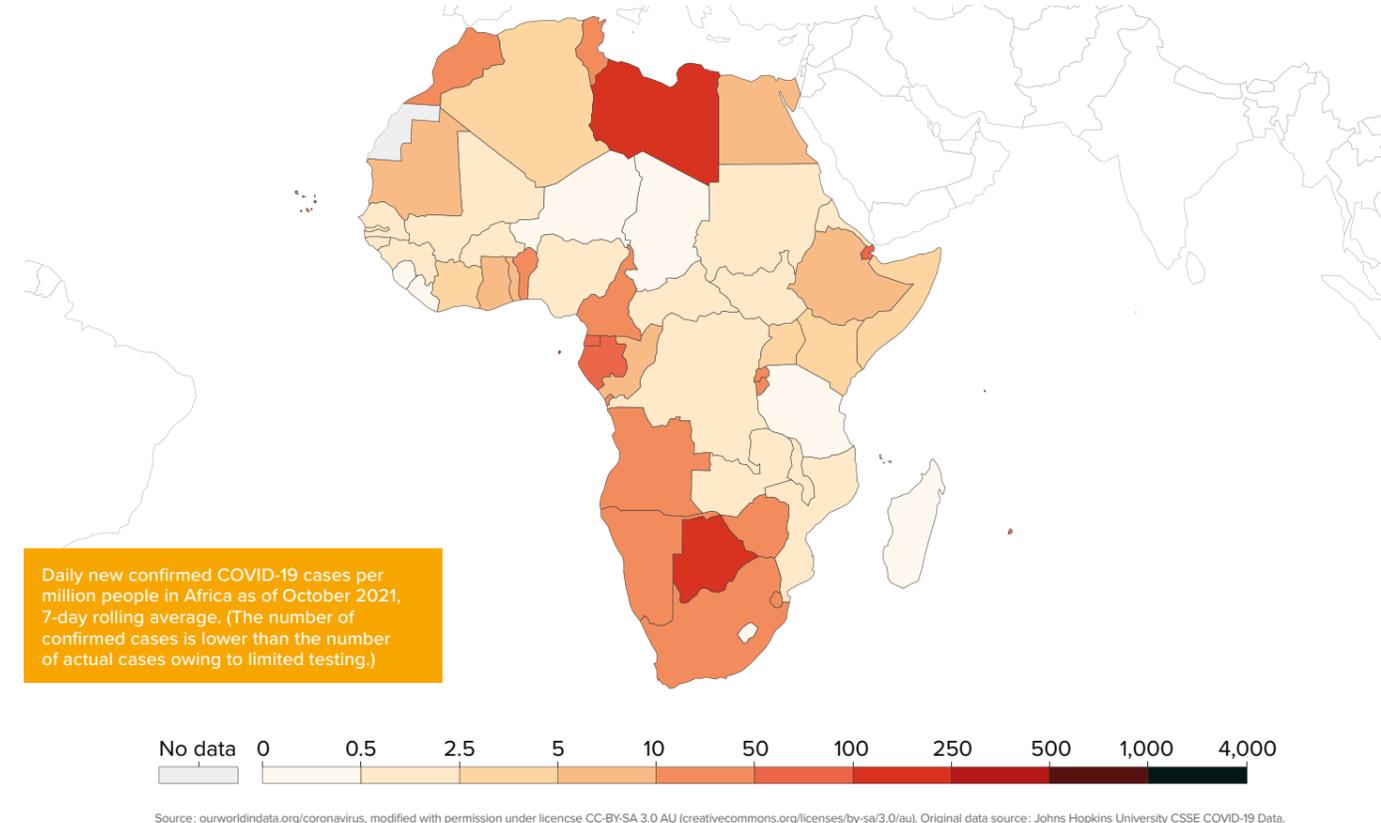


Figure 2. Daily new confirmed cases and total confirmed cases of COVID-19 globally through to October 2021.



Source: ourworldindata.org/coronavirus, modified with permission under licence CC-BY-SA 3.0 AU (creativecommons.org/licenses/by-sa/3.0/au). Original data source: Johns Hopkins University CSSE COVID-19 Data.

Some eighteen months into the pandemic, a clearer picture is now beginning to emerge of the impact of the global contagion on the lottery and gaming sector. At the time of last writing, the entire gaming sector had been hit by an unprecedented triple whammy that saw entire populations going into lockdown, the postponement or cancellation of major sports events including the Tokyo Olympics and EURO 2020, and widespread disruptions to retail networks through enforced closures of non-essential businesses. Following this early turmoil, the entire lottery and sports betting sector regrouped and recovered. The sector moved aggressively to online, optimized retail sales channels otherwise, and innovated game content through new product launches and via the additions of extras and asides to existing brands. In short, the industry has generally responded to the global health crisis with verve, creativity, and élan. Some of the trends now emerging and conclusions that may be tentatively drawn include:

1. To the end of financial year 19/20 or calendar year 2020, most lotteries experienced considerable initial disruption, followed by recovery to near pre-pandemic performance.

- 2. For the financial year 20/21 or calendar year beginning in 2021, most lotteries have enjoyed substantial growth, sometimes to record levels of lottery sales.
- 3. There has been a significant and sustained uptake of iGaming and other online products, with digital typically experiencing 30 to 40% growth year-on-year. This has been accompanied by a concomitant decline in land-based gaming, with casinos particularly badly hit.
- 4. Increased personal income, especially in the US, together with fewer opportunities to spend disposable income (owing to lockdowns and other pandemic restrictions), has been a key driver of growth in some markets and for some verticals.
- 5. The desire to fortify sales mid-pandemic has driven both new and existing game development, engendering many new innovations like the UK National Lottery's 'Must Be Won' roll-down draws for its Lotto flagship. Such innovations have typically been enthusiastically welcomed by players.

6. It is not yet clear whether the recent increase in play above traditional levels will be maintained post-pandemic. Sustaining current levels of lottery sales may depend upon maintaining lottery as an attractive alternative, apropos (5) above, as the currently restricted field of entertainment options recovers.

In the sequel, we take a closer look at points (1)–(6) above for some of the world's major lottery and sports betting entities (and a smattering of smaller operators) across Africa, Asia Pacific, Europe, and Latin America, setting their operations and pandemic response in the context of current local conditions. For North America, where the state-based system gives rise to many operators, we consider the market both as a whole and by vertical, highlighting the performance of individual state lotteries on occasion as appropriate.

Africa

The novel coronavirus initially spread more slowly in Africa than in any other region of the world. However, the continent is now in its third and worst wave of the pandemic, with major outbreaks in both the north (Tunisia, Egypt, Morocco) and south of the continent (South Africa). South Africa remains the continent's most badly impacted country, although the picture is not completely clear owing to a likely undercounting of cases, hospitalizations, and deaths across much of Africa. Vaccination rates across the continent remain low, even in the continent's most developed nation, South Africa.

South Africa



South Africa, with more than 2.9 million confirmed cases of COVID-19 and more than 89,000 deaths, has borne the brunt of the impact of COVID-19 on the African continent to date, at least according to official figures. In South Africa, a national state of disaster was declared on 15 March 2020, with an initial three-week nationwide lockdown commencing 26 March; this was subsequently extended to the end of April 2020. A ZAR 500 billion economic stimulus package followed to support the economy during the quarantine period. Lockdown restrictions were lifted in phases, with restrictions relaxed to level one (the lightest) in September 2020. A second and worse wave of the pandemic began in December 2020; lockdown restrictions were tightened to level three, and were not relaxed to level one again until March 2021. The country's vaccination program officially began on 17 February 2021. Local cases of the Delta variant were first identified in May 2021, and on 8 June South Africa entered level four lockdown restrictions (the next-to-most severe) in response to a third (Delta-driven) wave. In July, CNN reported that the country's hospital situation was under seriously challenged, and in August Bloomberg

reported that South Africa's economy was likewise under severe strain, with the jobless rate surging to 34.4% in the second quarter of 2021.

The financial year ending in March 2021 was thus by far the most challenging that ITHUBA – the operator of the South African National Lottery – has had to face, given the impact of the global pandemic on the company's business model and the wider economy. Prior to March 2021, ITHUBA had successfully enjoyed record-breaking years in each of its years of operation. The company has operated the South African National Lottery since 2015 and offers a wide range of fun, safe, and entertaining games for public consumption, including draw-based games (Lotto, Powerball), instants (EaziWin), and sports betting (SportStake). Draw-based games compose approximately 95% of the market.

For FY 20/21, ITHUBA reported an overall decline in sales of 8.5%, versus the previous financial year. Chief Lottery Director Brendan Burns remarked that the FY 20/21 results were very commendable given the extreme impact of COVID-19, which included both periods of hard

lockdown and a total ban on lottery ticket sales in retail stores during May 2020.

Indeed, the hard lockdowns forced all non-essential businesses to vacate their facilities and operate remotely, which for ITHUBA included all draw procedures. Fortunately, ITHUBA had previously migrated to an electronic drawing system (RNG) and animated draw shows, so the lottery was able to adapt to a fully remote draw procedure very quickly, continuing operations throughout the lockdown periods. To this day the remote working model remains in operation with all draws conducted remotely and with most staff working from home. Overall, sales of draw-based games were down 8.1% financial year on financial year. As retail sales dropped, ITHUBA was able to compen-

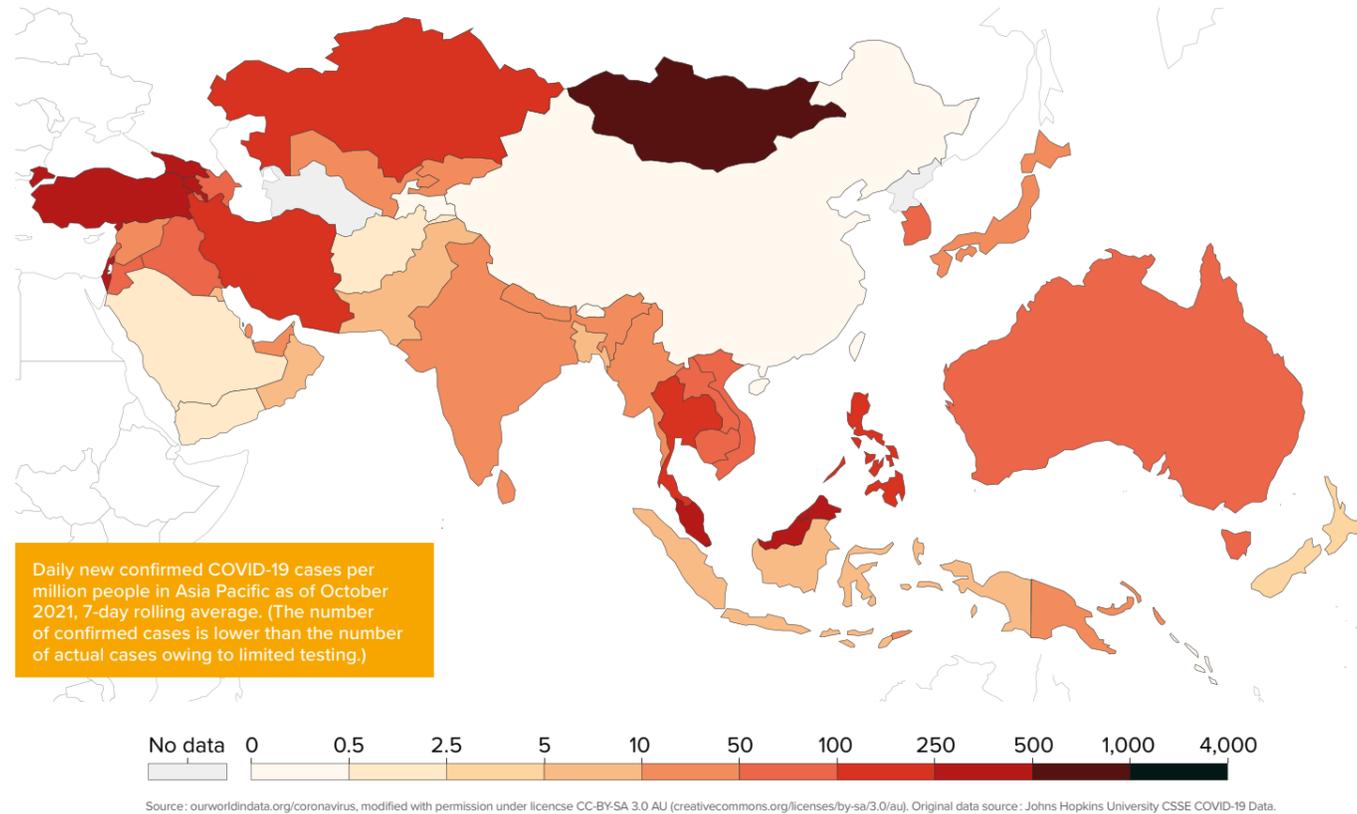
sate by increasing sales on-line through its banking partner Apps and through its eCommerce web site, mobile channels, and Lottery App. Currently, ITHUBA sells some 40% of lottery games through digital channels.

FY 20/21 results were very commendable given the extreme impact of COVID-19

Instant games were removed from retail stores in response to the trend towards on-line sales and the preference of retailers to remove paper and minimize COVID-19 risks at the point of sale. COVID-19 restrictions limited the number of players and shoppers in stores at any one time and for certain periods casinos

and smaller gaming houses were forced to close along with liquor stores, further curtailing lottery retail activity. Owing to these and other measures, instant sales decreased 26.9% financial year on financial year. Sports Pool games were also disrupted by the lack of available football fixtures in H1 2020, only returning to normality later in that year. Sales of sports betting products ultimately fell by 12% for FY 20/21, as against FY 19/20.

Commenting on the lottery's performance, Mr. Burns said, "ITHUBA is proud of the flexibility and agility of its systems and staff to respond to the global pandemic in a positive and productive way. While another record-breaking year was narrowly missed, there were greater achievements to be recognized."



Asia Pacific

Asia Pacific has continued to be more successful than many other parts of the world in its response to the COVID-19 pandemic, perhaps thanks to previous experiences with the SARS epidemic of 2002-2003 and the outbreak of MERS in Korea in 2015. China, Hong Kong, and South Korea have had ongoing success

in curtailing the spread of the SARS-CoV-2 virus through a combination of aggressive containment measures, universal masking, comprehensive track and trace programs and quarantine measures, and public buy-in. New Zealand, which has followed a 'zero-COVID' approach, has almost completely suppressed the virus; the same too could be said for Australia,

until a recent outbreak of the infectious Delta variant emerged in Sydney in June 2021. A notable exception to these success stories has been India, which was badly blighted by COVID-19 in a long six-month wave that commenced late February 2021. Somewhat surprisingly, vaccine rollouts across Asia Pacific have been uneven, even in developed countries like Australia and Japan.



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China



Lottery operations across mainland China were hit hard during the first three months of 2020, as Figure 3 shows. Recall that, owing to the national response to the COVID-19 pandemic, lottery retailer business hours were severely curtailed in February 2020; this, together with the 49-day suspension of lottery operations (including a 10-day shutdown over the Spring Festival holiday) mandated from 22 January 2020 ensured sales came to a standstill. Draws for national lotto and numbers games did not resume until 11 March, and VLT halls re-opened only on 11 May.

With the gradual reopening of the lottery market in mainland China

from March onwards, sales at the two Chinese state lotteries began to rebound, especially in the second half of 2020, when revenues began to approach pre-pandemic levels. Whereas sales of lottery products decreased 64.5% across mainland China during Q1 2020, as compared to the corresponding revenue period of 2019, by Q4 2020 revenues were down only 2.8% on Q4 2019 revenues, with sales in October 2020 actually peaking sales in October 2019. Overall, lotteries in mainland China closed out 2020 with total sales of CNY 333.95 billion, a year-on-year decrease in sales of CNY 88.1 billion, or 20.9%. From January 2020 through to December 2020, sales at the China Welfare Lottery were CNY 144.49 billion, a year-on-year decline of CNY 46.8 billion, or 24.4%. Over the same period, sales at the China Sports Lottery were CNY 189.5 billion, a year-on-year decrease of CNY 41.4 billion, or 17.9%.

Owing to the closure of lottery operations across mainland China in Q1 2020, plus various other special factors such as policy adjustments impacting the market, lottery sales across mainland China in Q1 2021 are not directly comparable to sales

across Q1 2020. Nonetheless, total revenues from lottery sales across mainland China amounted to CNY 84.5 billion for the first three months of 2021.

Turning attention to H1 2021, lottery sales increased rapidly over the period January – June 2021, as against the period January – June 2020, owing to the artificially depressed sales of the first three months of 2020, as occasioned by the COVID-19 pandemic. For the first six months of 2021, total sales of lottery products nationwide amounted to CNY 178.4 billion, an increase of CNY 54.5 billion, or 44.0% year-on-year. The China Sports Lottery carried the bulk of the increase, with sales at China Sports coming in at CNY 110.7 billion over the first half of 2021, an increase of CNY 46.1 billion over H1 2020, or 71.4%. For its part, the China Welfare Lottery reported sales of CNY 67.7 billion over the first six months of 2021, an increase of 14.2% or CNY 8.4 billion over the corresponding revenue period of 2020.

Market changes

Beyond the upheaval occasioned by the COVID-19 pandemic, lottery sales across mainland China in 2021 were

impacted by a number of procedural and policy changes, including: the suspension of certain online video lottery games; rule changes in particular Keno games, expansion of the scope of sales; the delisting of some high-frequency lottery games; and other factors such as the adjustment and optimization of lottery product structures. In sum, the sales of major lottery products have fluctuated significantly year-on-year. Thus, for example, sales of numbers games accounted for 67.6% of the market in June 2020, but only 36.1% of the market in June 2021; in this connection, see Figure 4. In general, the market share of numbers games decreased from 72.7% in the first half of 2020 to 47.1% in the first half of 2021, while sports betting sales increased from 13.8% market capture to 33.5% market capture over the same year-on-year timeframe.

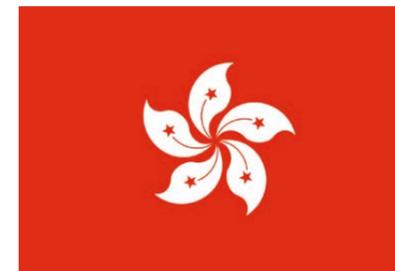
attribute Hong Kong's success in fighting the pandemic to early and aggressive mitigation efforts on both public health and economic fronts – especially during the first wave of the pandemic – together with the universal masking habits adopted by Hong Kong residents since the territory's previous experience in battling the SARS epidemic of 2003. A mild second wave was followed by a more serious third wave in August 2020, attributed to imported cases; this was followed by a comparatively severe fourth wave that began in November 2020. A series of partial lockdowns, targeted down to the residential level, mass testing, and a free mass vaccination program (from early 2021) were successfully used to curtail the spread of the virus, and since May 2021 Hong Kong has been averaging less than seven new cases of COVID-19 per day.

39% year-on-year for the fiscal year ending in June 2020.

Owing to the absence of international football fixtures, sales of fixed odds sports betting products were also adversely affected in FY 20, with stakes declining 18.8% year-on-year. Only pari-mutuel horse race betting weathered the initial storm of COVID-19, with FY 20 stakes decreasing only slightly, down 2.6% year-on-year. Thanks to stringent admission arrangements to control attendance and mitigate health risks at the racecourse, horse racing was ongoing throughout the 2019/20 season, with the result that – apart from a dip in turnover in Q1 2020 – horse race betting was comparatively unaffected in 2020 by the pandemic: this, despite off-course betting branches experiencing closures and reduced trading hours. Indeed, horse racing turnover for the 2019/20 season was the third highest of all time, the impact of COVID-19 notwithstanding.

An even better story unfolded over the course of the 2020/21 racing season at HKJC, with the Club enjoying an all-time turnover record of HKD 136 billion (USD 17.5 billion). This is the first time in HKJC's history that turnover has exceeded HKD 130 billion. The 835 local races and 206 simulcast overseas races were also both records for the club. HKJC was able to successfully progress the 2020/21 racing seas by creating a 'racing bubble' at its Sha Tin and Happy Valley racecourses. Commenting on the season's results, HKJC CEO Winfried Engelbrecht-Bresges said, "We are delighted to have been able to again complete a full season with a clear focus of ensuring racing

Hong Kong, China



The Hong Kong Jockey Club (HKJC), which was recently named most attractive employer in Hong Kong by international human resources solutions agency Randstad in a 2021 employer brand research survey, has main product offers of horse race betting, football betting, and the Mark Six lottery. It was the Mark Six lottery that bore the brunt of the impact of the COVID-19 pandemic on HKJC. As part of the initial response to the pandemic, Mark Six lottery draws were suspended on 2 February 2020. The suspension was not lifted until 24 September 2020, more than 6 months later; when draws resumed, in-place restrictions included draws held once-a-week only and ticket purchase only through online and Telebet services. Accordingly, Mark Six lottery sales fell

Hong Kong, China, has had a very successful response to the pandemic to date, reporting just over 12,000 confirmed COVID-19 cases and only 213 deaths; the special administrative region's comparatively flat epidemiological curve is especially remarkable given Hong Kong's status as an international transport hub. Academic observers

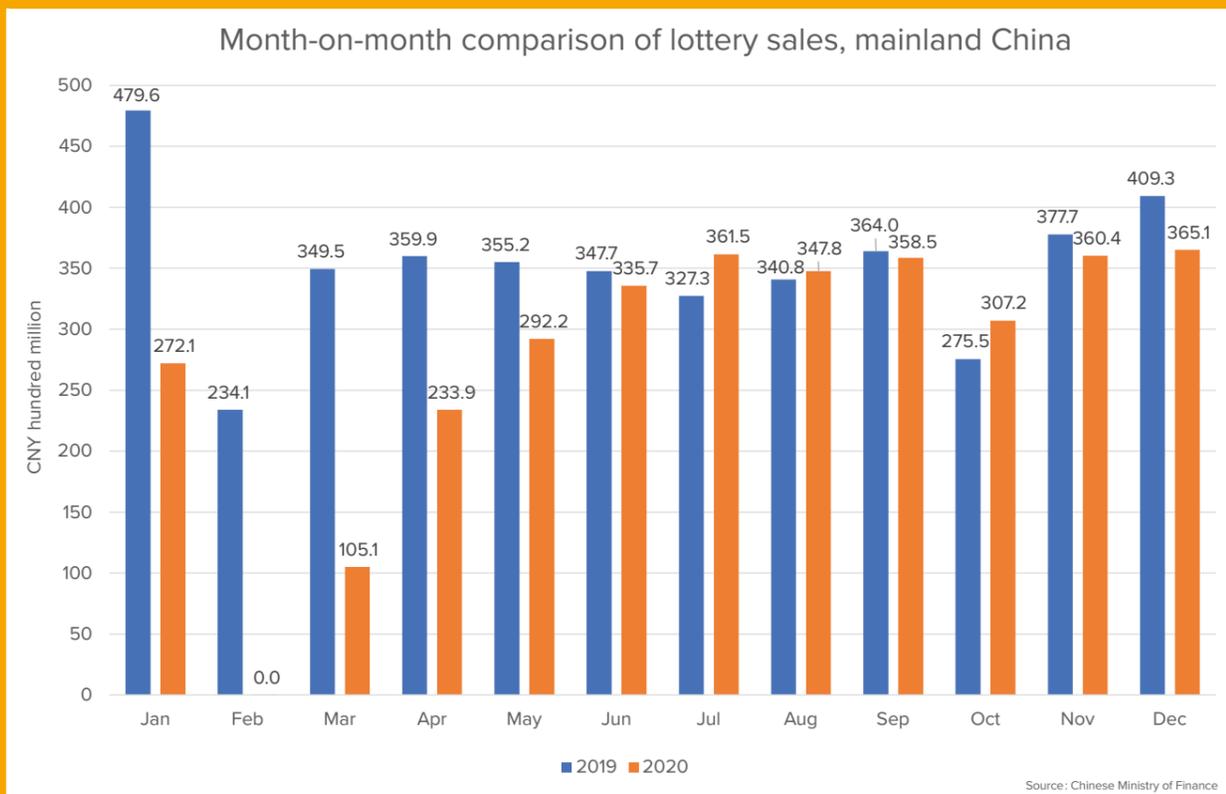


Figure 3. Month-on-month comparison of lottery sales across mainland China, 2020 vs. 2019.

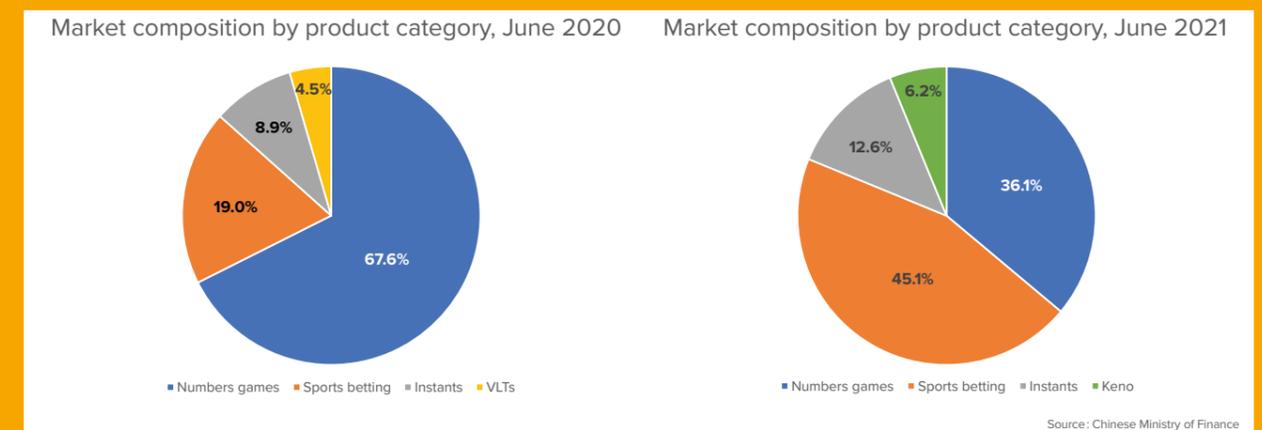


Figure 4. Change in composition of the Chinese lottery market (mainland China) by product category, June 2020 vs. June 2021.

to continue while upholding the principle of protecting the public health and safety of our employees, stakeholders, and the public.” Overall racing turnover grew 12.1% year-on-year.

With the resumption of the major football leagues from the second half of 2020, sports betting revenues were also up for FY 21. While a direct year-on-year comparison is not possible owing to the absence of international matches in 2020, sports betting revenues were up 23% in FY 21, as compared to FY 19. In contrast, sales of the Mark Six lottery continued their decline into 2021, with ongoing restrictions ensuring that draw-based games sales decreased another 34% year-on-year. Comparing FY 21 lottery sales with FY 19 lottery sales, lottery revenues are down by more than half overall.

Macau, China



In the special administrative region of Macau, China, casinos predominate; Macau overtook the Las Vegas strip in terms of gaming revenues in 2007. One of the world’s strictest border control regimes has kept COVID-19 infections to just 63 confirmed cases to date in the former Portuguese colony, but has also devastated revenues: Macau’s GDP, which depends heavily on taxes on gaming, declined 56% to USD 24 billion in 2020. Currently, Macau monthly visitor numbers remain deeply depressed. Pre-pandemic, Macau received more than three million visitors monthly on average; current footfall is less than one million visitors per month. The impact of COVID-19 on gaming in Macau is a microcosm of the virus’ impact on gaming more generally, with H2GC reporting that gaming in Asia Pacific is down by 21.9% in 2021 to date and 20.9% globally.

Australia



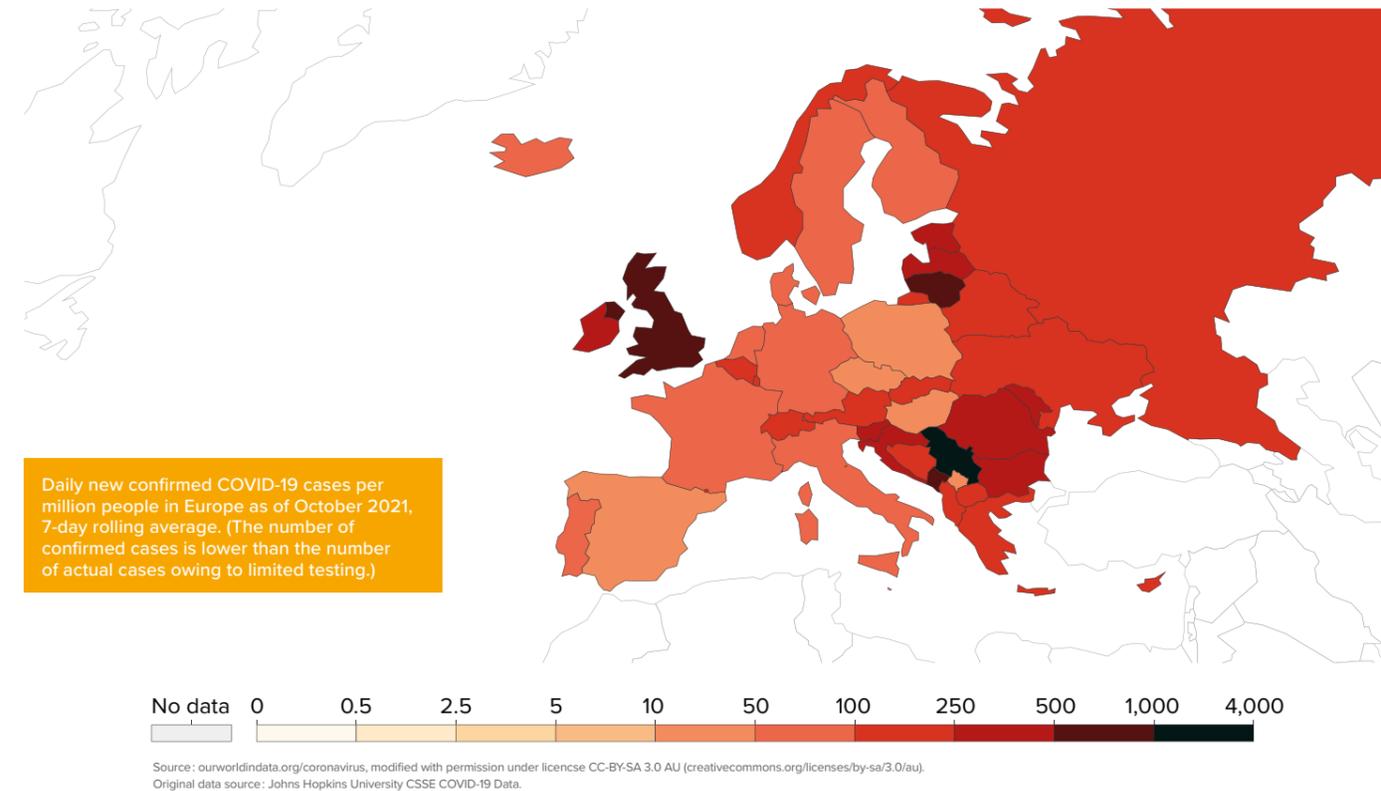
Until very recently, Australia has been comparatively unaffected by the SARS-CoV-2 pandemic, thanks largely to a ‘zero-COVID’ strategy pursued aggressively by the premiers of the various Australian states and territories. However, with the advent of the Delta variant, the state of New South Wales has been experiencing (by Australian standards) a major outbreak since June 2021, with Australia’s most populous state experiencing around 1,000 new confirmed cases a day as of this writing. Fortified by its earlier successes in tackling the pandemic, Australia has been comparatively slow getting its vaccination program off the ground – it is ranked close to last in vaccine uptake among OECD countries – with the unfortunate result that the country’s largest city, Sydney, now faces a period of extended lockdown to curtail the virus’ spread. At the time of writing, two million people were under curfew.

The Lotteries & Keno business [of Tabcorp] produced another record profit result driven by strategic game and portfolio development and digital growth.

Tabcorp Holdings Limited is Australia’s largest gaming operator, operating state-regulated lotteries in all of Australia’s states except Western Australia. The group operates three business units: lotteries and Keno; wagering and media; and gaming services. Here we report on overall group and lottery and keno results only. For FY 19/20, overall group revenue was down 4.8% to AUD 5,224 million owing to the impact of COVID-19, even as Australia was comparatively lightly impacted by COVID-19 restrictions during the reporting timeframes.

During this period lotteries exhibited strong performance, with like-for-like sales up circa 15 to 30% during COVID-19 restrictions. Overall lotteries and Keno revenues were AUD 2.9 billion, up 1.8% year-on-year; despite strong digital performance, Keno full-year revenues were down 14.3% on the back of enforced closures of clubs and hotels in New South Wales, Victoria, and Queensland during the second half of 2020. While the retail network – including newsagents and convenience stores – largely continued trading during the COVID-19 lockdown periods, retail turnover declined 4% in FY 20. In contrast, digital turnover grew strongly, accounting for 28% of total lotteries turnover in FY 20. For FY 19, the corresponding figure was 23.5%.

In a year heavily impacted by COVID-19, the Group delivered a strong operational result in FY 20/21, with group revenue up 8.8% year-on-year to AUD 5,686 million. Lotteries and Keno revenues came in at AUD 3,206 million, up 9.9% on the previous corresponding period and delivering a record profit result. Turnover of core lottery games (Saturday and mid-week Lotto, Set for Life, and instants) was up by more than 10% across each product offering. Digital turnover grew by 27% and accounted for 32.8% of total lotteries’ turnover for the year, even as the retail network remained the primary channel for consumer traffic. Keno revenues grew by 33.5% year-on-year as the entertainment sector rebounded from the closures of hospitality venues forced in FY 20. Keno digital turnover was up 74%. Commenting on the results, Tabcorp Managing Director and CEO David Attenborough said, “In the face of substantial challenges from the COVID-19 pandemic, our businesses delivered a strong operational performance and double-digit earnings growth. [...] The Lotteries & Keno business produced another record profit result driven by strategic game and portfolio development and digital growth. It continued its strong growth trajectory since the Tabcorp and Tatts combination in December 2017.” Tabcorp is expecting to demerge its lotteries and Keno division in mid-2022 following completion of a strategic review.



Europe

The European response to the pandemic has been varied, both in terms of the damage to various nations caused by the coronavirus and in terms of policy response towards managing the pandemic. France, Italy, Spain, and the UK are among the European countries worst hit by COVID-19, while Germany and Scandinavia (excepting Sweden) have experienced comparative success in combatting the pandemic. Policy responses have ranged from *laissez-faire* to controlled management; no country in Europe appears to be adopting a ‘zero-COVID’ approach favored in parts of Asia Pacific. Vaccination programs are generally well-advanced across Europe, especially in Denmark, Iceland, and the United Kingdom.

No country in Europe appears to be adopting a ‘zero-COVID’ approach

United Kingdom



The United Kingdom has had a mixed response to the pandemic to date. A delay in locking down early in the pandemic, at a time when no vaccines were available, is considered by many observers to have played an important role in the crushing first wave of the pandemic, which led to more than 300,000 confirmed cases and 40,000 deaths in the UK by early August 2020. The force of a brutal second wave of the pandemic, which began in winter 2020 and saw as many as 60,000 daily confirmed cases at one point, was blunted by late February 2021 thanks to an early and aggressive vaccination campaign using the Oxford/AstraZeneca adenoviral vector vaccine. Since May 2021 the UK government has been pursuing a somewhat different approach to managing the pandemic from most of its erstwhile neighbors in Europe,

favoring a Swedish-style *laissez-faire* or ‘live with the virus’ path that has seen daily confirmed cases skyrocket again; nonetheless hospitalizations and deaths have remained comparatively low thanks to the country’s high rate of vaccination.

Record-breaking FY 20/21 results

The pandemic notwithstanding, total UK National Lottery sales broke GBP 8 billion for the first time in the fiscal year through to 31 March 2021. The FY 20/21 record sales of GBP 8,373.9 billion represented an increase of GBP 468.8 million on the previous financial year’s revenues. This marked Camelot UK Lotteries’ Limited fourth successive year of revenue growth, following the wide-ranging strategic review undertaken by the company in 2017. This resulted in the best-ever returns to good causes from sales revenues alone, with GBP 1.2 billion in monies raised for good causes directed to COVID-19 relief.

Like other big national lotteries, the UK National Lottery – which is operated by Camelot UK Lotteries Limited (Camelot) – has traditionally depended heavily on its retail network for its revenues, with in-store retail sales normally

responsible for around 70% of total revenues. National Lottery retail sales were therefore impacted near the end of March 2020 and into April as a result of the UK-wide lockdown measures. Despite the downturn occasioned by the various lockdowns and other pandemic containment measures, the mitigations and swift interventions put in place by The National Lottery – such as the active encouragement proffered by Camelot in supporting the move of their player base to online – led to record sales for the 20/21 fiscal year. The growth in sales was driven by draw-based games, most notably Lotto, with revenues rising by GBP 153.6 million to GBP 4,690.7 million. A new feature introduced in November 2020 sees around a million players win an additional cash prize of GBP 5 for matching two main numbers in a ‘Must Be Won’ roll-down draw. This innovation proved popular with Camelot’s players and has underpinned the growth of Camelot’s flagship Lotto game at a time when sales of numbers games are declining in many international markets.

Although the UK retail sector was widely disrupted by the COVID-19 lockdowns instituted in the UK in the first half of 2020, with Camelot’s support more than 90% of its 44,000 retail partners continued to trade throughout the various lockdown periods. Nonetheless, in-store sales were down GBP 583.5 billion on FY 19/20 in-store sales of GBP 5,447.6 million. Down 18.9% year-on-year at the midway point of 2020, retail sales ultimately recovered strongly in the second half of 2020, resulting in an overall decline in retail sales of 10.7% for the year as a whole. Since year-end 2020, retail sales have recovered to near pre-pandemic trading levels.

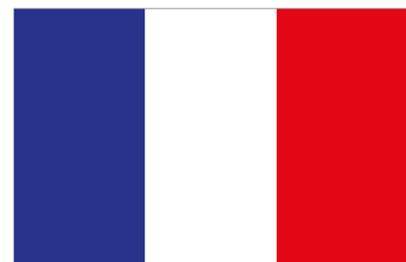
Growth of digital

Even as retail sales were depressed by COVID-19 physical containment measures, digital player registrations grew by 2.7 million over the year, amounting to approximately 4% of the entire UK population, resulting in The National Lottery recording its highest-ever digital sales of GBP 3,509.5 million. Year-on-year, digital sales increased by GBP 1,052.0 million, or 42.8%. Within digital, mobile sales grew by GBP 876.4 million to an all-time high of GBP 2,481.9 million, with most sales coming from The National Lottery’s apps. The move to digital occasioned by the decline in retail footfall was underpinned by an accelerated investment plan in the

digital channel, which was approved by Camelot’s board in March 2020. The recovery of retail in the second half of 2020 notwithstanding, Camelot continues to see players using The National Lottery’s apps and many punters playing online, reinforcing the view that in the right circumstances, digital channels augment rather than cannibalize the retail channel.

Commenting on the FY 20/21 results, Camelot CEO Nigel Railton said, “In what has been an extraordinarily challenging year, The National Lottery has demonstrated incredible resilience and flexibility to achieve this record performance. These results are a culmination of all of the work we’ve done over the last few years in the areas of brand, games, retail and digital. This, together with our years of experience and longstanding commitment to being a world leader in healthy play, have helped us ensure this vital boon for society when it’s been needed most.” The GBP 1.2 billion raised specifically for COVID-19 relief originated from a commitment made by The National Lottery in late March 2020 to provide GBP 300 million in emergency funding in response to the COVID-19 pandemic. This initial engagement for GBP 300 million in support was subsequently upgraded in April 2020 to a pledge to distribute at least GBP 600 million between all National Lottery distributors. With disbursements now standing at GBP 1.2 billion, this funding is the largest contribution to the UK’s pandemic relief effort outside of government, and has led to a significant increase in positivity towards the National Lottery’s brand.

France



With more than 7.2 million confirmed cases and more than 118,000 deaths, France has been hit almost as badly by the pandemic as the United Kingdom. A first wave of the pandemic in March 2020 was followed by second and third waves in November 2020 and March 2021 respectively, with daily case rates peaking mid-November 2020 at 56,000

confirmed cases per day; as in other countries, the pandemic was managed by a series of lockdowns and similar sanitation measures in the absence of an effective vaccine. France’s vaccination program began on 27 December 2020, after the EU approved the EUA of the Pfizer-BioNTech vaccine. In July 2021 France became one of the first countries in the world to require a health pass (vaccination / negative PCR or antigen test / recovery from COVID-19) to access venues welcoming more than 50 people, including museums, theaters, cinemas, festivals, and sports and leisure centers; following the introduction of the health pass, vaccination rates have lifted considerably.

FY 20 results

In France, a similar story played out for national gaming operator FDJ as for Camelot in the UK, where an H1 2020 decline in revenues was offset by stronger H2 2020 results; momentum then continued to increase in H1 2021, especially from May 2021 onwards. Recall that France was among the more badly hit of major European countries by the initial waves of the pandemic, with a general quarantine being ordered by the French government from 17 March 2020. The general quarantine was lifted 11 May 2020, but closures and travel restrictions continued until 2 June, and a state of health emergency remained in place until 24 July. As a result of these measures, stakes wagered fell by 18.4% overall in H1 2020. Sports betting was particularly badly affected during the first half of 2020, with a year-on-year decline in sales of 40% reported across this product category over the given time periods. A gradual recovery during summer 2020 continued throughout the second half of the year, during which time overall stakes grew 2.8% year-on-year, so that the French national lottery recorded a year-on-year decline of 6.8% in stakes across the whole of 2020 to EUR 15,959. The attrition in sports betting observed during the first six months of 2020 was offset by growth of 20% in H2 2020, limiting the decline for the year to 10%, as compared against 2019.

Throughout 2020, the retail network demonstrated considerable resilience: even during the height of the first-half lockdowns, 80% of the FDJ’s retail points of sale were permitted to remain open. Sales through the retail



network in 2020 totaled EUR 14,424 million, down 10% on 2019 results. In a now-familiar story, sales through retail points of sale were down by more than 20% in H1 2020, but even increased year-on-year by 2% in the second half of 2020. The distribution network held steady at nearly 30,000 points of sale, owing to support initiatives by FDJ and other stakeholders. There was nonetheless a strong growth in the online spend, with digital lottery stakes up over 60% at more than EUR 1.1 billion. Online sports betting activity also posted an increase. Overall, FDJ Group’s online stakes recorded an annual increase of nearly 40% to EUR 1.5 billion, or almost 10% of total stakes.

Commenting on the 2020 results, President and CEO of FDJ group Stéphane Pallez said: “2020 was an unprecedented and contrasted year during which FDJ demonstrated resilience and solidarity. The health crisis had a particularly strong impact on our business in the first half. But the recovery in the second half, combined with the Group’s responsiveness and relevant digital strategy, enabled us to preserve our performance and annual results.”

H1 2021 results

Turning attention to H1 2021, FDJ experienced good momentum, especially from mid-May onwards, the restrictions linked to the ongoing pandemic crisis notwithstanding. On 19 May 2021 outdoor restaurants re-opened in France, while on 9 June certain businesses with indoor patronage re-opened to the public.

This included bars, which represent nearly 10% of FDJ’s points of sales. In addition, the national night-time curfew – which had been in place since 17 October 2020 with a check-in time of 6 p.m. – was lifted on 30 June 2021. In view of the disruption to the sporting calendar and the impact of coronavirus containment measures instituted in 2021, a year-on-year comparison with H1 2020 is not possible. However, relative to H1 2019, stakes recorded by FDJ were up by 8.3% to EUR 9.2 billion, thanks to increased point of sale activity occasioned by the reopening of bars together with an uptake in sports betting activity driven by the UEFA EURO 2020 football championship. Lottery games were up 4% on H1 2019 to EUR 6.9 billion, with growth driven by instant games. Draw-based games were stable over the same revenue period with a 50% decline in stakes from Amigo, a draw-based game popular in bars and taverns, offset by a more than 20% increase in sales for other draw-based products, spearheaded by Loto and Euromillions. The latter benefitted in particular from a long draw cycle in Q1 2021, leading to a Euromillions jackpot of EUR 210 million last February, the highest ever. Sports betting revenues were up 25% on 2019 to EUR 2.3 billion, thanks to a more regular sporting calendar and the EURO 2020 football tournament. The EURO 2020 tournament generated EUR 260 million in stakes for FDJ – a figure comparable to that recorded for the 2018 FIFA World Cup – despite the absence of the French national team from the final phase of the tournament.

Online stakes

FDJ’s online stakes exceeded EUR 1.1 billion through to the end of H1 2021, an increase of more than 70% compared to H1 2020; the figure of EUR 1.1 billion represents 12% of total stakes for H1 2021. Overall digitalized stakes – including online and stakes digitalized at the point of sale, i.e. using a digital service/application for their preparation, prior to registration by the retailer – doubled compared to the first half of 2020, with more than 29% of total stakes placed through digitalized channels. Remarking on the results, Stéphane Pallez said: “The second quarter [of 2021] confirmed a recovery in our business to levels above those recorded before the crisis. Our stakes are increasing, both online and in our point-of-sale network. Over the half-year, we accordingly recorded an increase of nearly 9% in revenue compared with the same period in 2019. Barring new restrictions in response to developments in the health situation, the Group expects to maintain good momentum in the second half and is confident in its business and results prospects in accordance with its responsible gaming model.”

Germany



Relative to the rest of Europe, Germany has had a comparatively good response to the COVID-19 pandemic to date. The first case of COVID-19 was confirmed in late January 2020; by mid-March of that year, German states were mandating school and kindergarten closures, postponing academic semesters, and prohibiting visits to nursing homes to protect the elderly and infirm. Borders to neighboring countries such as Switzerland were closed 15 March, and by 22 March, six German states had imposed curfews. Such measures helped contain the initial wave of the pandemic, and restrictions began to loosen mid-April. A surge in cases during winter 2020 led to a partial

lockdown from early November and a tightening of social distancing rules; these measures only temporarily halted a rise in cases. By the end of November 2020, the total number of confirmed cases surpassed one million. A hard lockdown from 15 December made FFP2 (the European equivalent of the American N95) masks mandatory on public transport and in shops; these measures remain in place today. Vaccinations of critical populations such as the elderly began from January. A third wave of infections was driven by the Alpha variant in March 2021; this was broken by early May on the back of reforms in April 2021 that increased the federal government's powers to respond to the pandemic. With the rise to dominance of the Delta variant, a fourth wave of the pandemic began in late August 2021, with most cases arising in younger people. At this writing the country is experiencing around 10,000 new cases per day.



The DLTB

In Germany, like the US and Canada, lotteries are organized at the state rather than federal level. A total of 17 separate lotteries operate in Germany, 16 of which are run by the individual states (Bundesländer). Unlike in North America, however, the 16 state-regulated lotteries operate under the aegis of an umbrella organization, the Deutscher Lotto- und Totoblock (German Lotto and Toto Block, or DLTB). The DLTB ensures the 16 state lotteries operate under standardized rules.

FY 20 vs. FY 19

Germany bucked the trend of many other countries in 2020, with total stakes for FY 20 increasing by 8.8% year-on-year to more than EUR 7.9 billion. Commenting on the results, chair of the DLTB and managing director of Lotto Rheinland-Pfalz Jürgen Häfner said, "The 16 German state lottery companies proved to be crisis-proof and reliable during the 2020 [COVID-19] pandemic. This good annual result shows that our gaming offers as popular as ever – this despite numerous points of sale having to close temporarily during the pandemic." Mr. Häfner continued, "Many customers compensated for these closures, for example, by submitting multi-week tickets and using our online offerings."

The most popular product was again Lotto 6aus49, which enjoyed sales of EUR 3.98 billion, accounting thereby for more than half of all wagers. This exceeded the corresponding result for FY 19 by more than 12%. Changes to the

game matrix leading to larger jackpots and an increase in the price point to EUR 1.20 helped drive the flagship's results. Another highlight was the Eurojackpot block game: this multi-jurisdictional game, which is played across 17 countries in Europe, saw stakes rise 18% year-on-year to more than EUR 1.47 billion. Like all block games, Eurojackpot is jackpot-sensitive; a series of long-running jackpot cycles of more than EUR 90 million helped the pan-European lottery game's performance following a weaker FY 19.

FY 21

[The DLTB is] particularly pleased about the significant increase in our long-running LOTTO 6aus49.

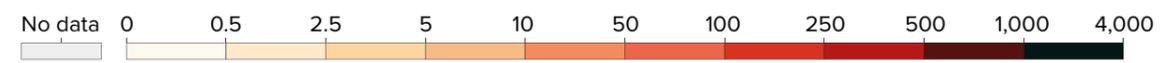
The good results for the DTLB continued into H1 2021, with the 16 members reporting that sales collectively rose to over EUR 4 billion in the first half of the year, up 7.9% on H1 2020. Chair of the DLTB, Jürgen Häfner remarked, "Our customers remained loyal to us in the first half of 2021. We are particularly pleased about the significant increase in our long-running LOTTO 6aus49." Mr. Häfner was referring to the excellent performance of the flagship Lotto 6aus49 game, which saw stakes grow 15.3% over the corresponding revenue

period of 2020. "We have managed to make our classic [Lotto 6aus49] fit for the future," Mr. Häfner said. On the back of the strong H1 2021 results more than EUR 1.6 billion was paid into respective state budgets in the form of taxes and duties. "That means every week around 61.5 million euros flow to the common good. Without this money, many things would not be possible", proclaimed Mr. Häfner.

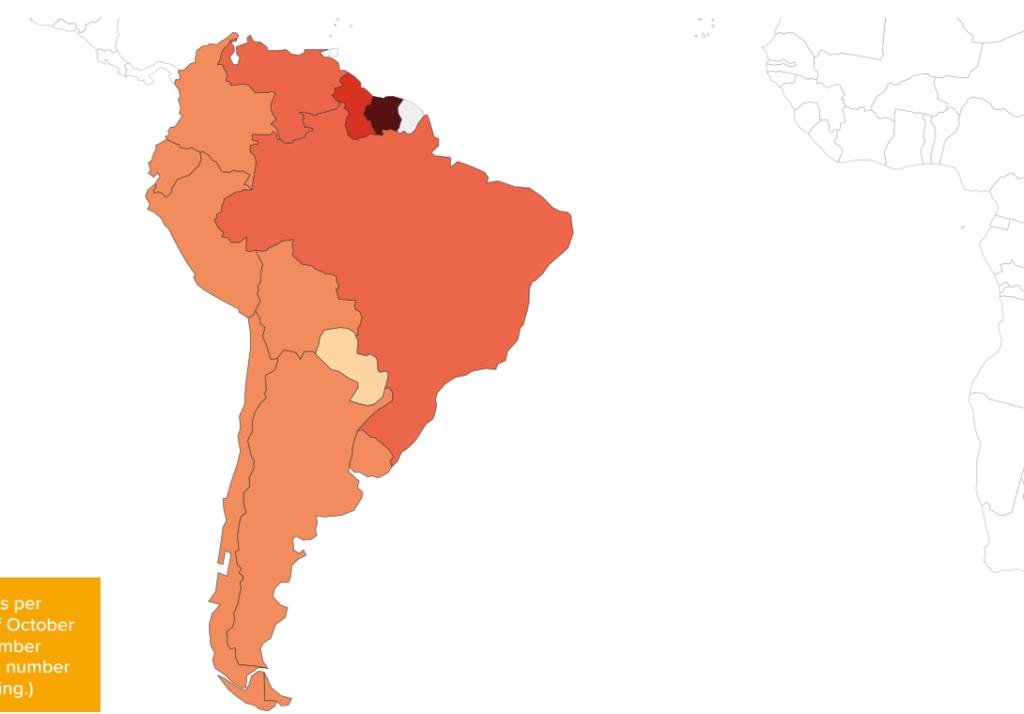
New State Treaty on Gambling enters into force

In a separate development, the new State Treaty on Gambling (Glücksspielstaatsvertrag) came into force on 1 July 2021. While the new treaty opens up the market to online casino as well as sports betting – something the DLTB has fought in the past – the DTLB has welcomed the treaty's introduction, saying that it continues to secure the public interest-oriented state lottery monopoly while for the first time also comprehensively regulating online gaming, helping thereby to suppress the illegal online market.

Daily new confirmed COVID-19 cases per million people in Latin America as of October 2021, 7-day rolling average. (The number of confirmed cases is lower than the number of actual cases owing to limited testing.)



Source: ourworldindata.org/coronavirus, modified with permission under license CC-BY-SA 3.0 AU (creativecommons.org/licenses/by-sa/3.0/au). Original data source: Johns Hopkins University CSSE COVID-19 Data.



Latin America

The COVID-19 pandemic has been particularly bad in Latin America. Brazil remains the world's second-most heavily impacted nation behind the United States. Chile, Peru, and Mexico have also been badly affected by the pandemic, with Peru experiencing the highest death rate of any country on a per capita basis, at almost 6,000 deaths per million people through to October 2021. Progress in vaccinating the region's populations unfortunately remains slow.

Brazil



With more than 21 million confirmed cases of COVID-19 and over 603,000 deaths, Brazil has been one of the countries most heavily affected by the SARS-CoV-2 virus, alongside the USA and India. Unfortunately, Brazil's response to the pandemic has been politicized, with the result that there is still no coordinated public health response to the contagion. Throughout the pandemic, Loterias CAIXA has nonetheless continued to operate. The Brazilian national lottery reports that in fiscal year 2020 lottery sales were extremely challenging, owing of course to the COVID-19 pandemic. (In Brazil, the fiscal year is the calendar year.) This was especially so during the first phase of the pandemic, where the retail network (physical commercial establishments) was badly impacted by a patchwork of local lockdowns lasting several months over the course of the first half of 2020.

The reduction in lottery sales, identified in the first half of 2020, was owing to the fact that most revenues from the sale of lottery products are raised through physical channels: the point-of-sale network has more than 13,000 units nationwide. As a result of the decreed lockdowns, the lottery network

was closed in some periods in 2020. In the second half of 2020, there was an increase in lottery sales, reaching levels of resumption meeting pre-established goals by the company, which occurred as a result of the progressive opening of commercial establishments and the lottery network in the country. Overall FY 20 sales of draw-based games were up 2.6% on FY 2019 draw-based sales, in something of a triumph for the Brazilian national lottery.

With regards to sports betting, national football matches and championships were suspended in certain months of 2020 in most states, which affected bets for lottery products that are based on or are linked to the results of football matches. Consequently, sales of pari-mutuel sports betting products in FY 20 declined 40.7% year-on-year. Overall, sports betting accounted for 0.66% of Caixa's stakes in FY 19, the most recent year for which consonant figures are available.

The wide dissemination of official electronic betting channels of Loterias Caixa (Loterias Online Portal and the CAIXA Lotteries App), as well as

the up-take and satisfactory adherence of the public to Caixa's official gaming channels, also contributed to the improved results reported in H2 2020. Of particular importance in this regard is that Loterías CAIXA sells lottery products via its highly-regarded Loterías Caixa App on both the IOS and Android platforms, in full compliance with the policies of use of these platforms. In the first half of 2021, the sales growth trend for revenues coming from electronic channels has been maintained.

With the resumption of professional league football matches in particular, [Caixa's] sales of sports betting products skyrocketed...

The positive trajectory noted for digital sales also carried over to the setting of draw-based games in H1 2021, where sales of draw-based games were

up 10.2% in H1 2021, compared to the corresponding revenue period of H1 2020. With the resumption of professional league football matches in particular, sales of sports betting products skyrocketed over the same relative timeframes. While a direct comparison is contra-indicated owing to the disruption to the sporting schedule in 2020, the surge in sports betting sales led to an overall year-on-year increase in sales of 10.8%.



Mexico



Mexico is another country that has been badly affected by the COVID-19 pandemic, with more than 3.7 million confirmed cases and 284,000 deaths to date; the capital Mexico City has been among the hardest hit of the country's 32 administrative divisions. The development of the pandemic in Mexico has followed a now-familiar path; after COVID-19 emerged in the country in February 2020, a national health emergency was declared on 30 March. Unfortunately the Federal response to the pandemic has been politicized, like in Brazil, with Mexico's states ultimately imposing a patchwork

of measures to curb the spread of disease, such as mask mandates in public spaces, the suspension of in-person teaching in schools and universities, and the enforced closure of entertainment and hospitality venues. Beaches were closed on 1 April 2020. A phased re-opening took place over summer 2020, with many states announcing the re-opening of non-essential businesses from June and the resumption of classes online from August. Mexico's vaccination program (initially restricted to health-care workers) began early, in December 2020, but was not sufficient to stem the tide of infections: the country experienced a local maxima in cases in January 2021. From March to June 2021 there was a comparative lull in cases; but with the arrival of the Delta variant, daily cases at present are higher than they have ever been. As of this writing only 25% of Mexico's population of 127.6 million is fully vaccinated.

Mexico's national lottery, Lotería Nacional para la Asistencia Pública (LOTENAL), was formed in 2019 from the merger of its two former two state lotteries,

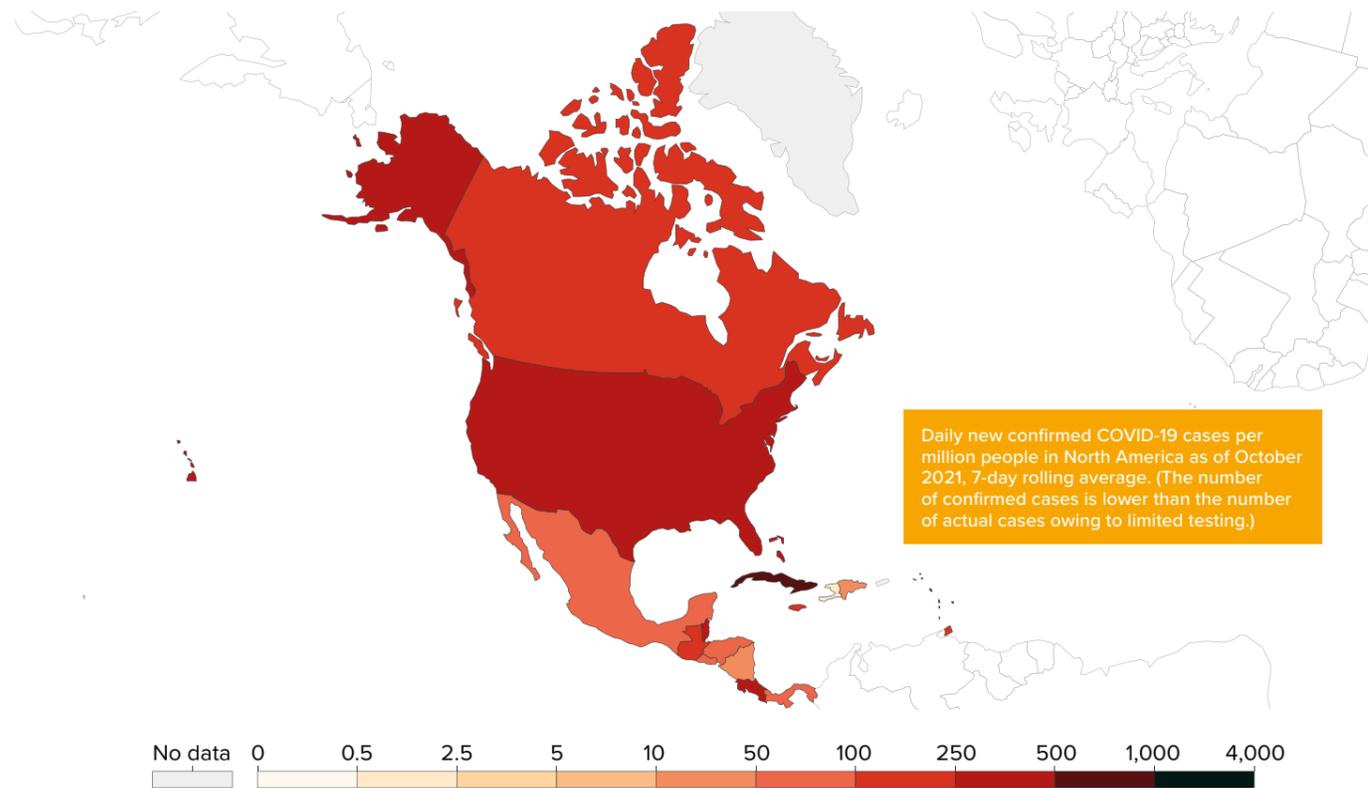
Pronósticos para la Asistencia Pública and Lotería Nacional para la Asistencia Pública, in a bid to enhance the fortunes of Mexico's lottery sector. The combined new organization retained the LOTENAL name, which dates back to 1770.

Reports from LOTENAL are available for the lottery's draw-based product offerings; separate figures for digital are not available. For calendar year 2020, sales of draw-based games declined 7.9%, as against 2019 calendar year sales, owing in part to the imposition of pandemic containment measures. In contrast, H1 2021 sales of draw-based games were up 63.8% on H1 2020 sales of the same products, reflecting the depressed performance of draw-based offerings in the first half of 2020.

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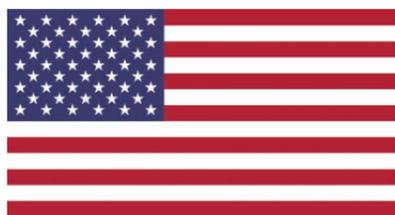
Daily new confirmed COVID-19 cases per million people in North America as of October 2021, 7-day rolling average. (The number of confirmed cases is lower than the number of actual cases owing to limited testing.)

Source: ourworldindata.org/coronavirus, modified with permission under license CC-BY-SA 3.0 AU (creativecommons.org/licenses/by-sa/3.0/au). Original data source: Johns Hopkins University CSSE COVID-19 Data.

North America

North America's pandemic response has of course been dominated by the US, which has had among the world's worst outcomes to date. Indeed, if Mississippi, Louisiana, and Florida were countries, they would each have one of the highest daily case averages per capita in the world, at more than 100 cases per 100,000 people. Canada has generally fared better, particularly since the advent of effective vaccines: at the time of writing, more than 70% of the Canadian population has been vaccinated with at least one vaccine dose.

USA



The US remains the country hit hardest by the COVID-19 pandemic, reporting more than 45 million cases of COVID-19 and 726,000 deaths through to the time of writing. A haphazard initial response to the pandemic up to the end of 2020, occasioned (*inter alia*) by political polarization, a patchwork of federal and state responses including piecemeal lockdowns, together with misinformation and shortcomings in testing permitted largely uncontrolled spread of SARS-CoV-2 throughout the United States through to the beginning of 2021. Following emergency use authorization by the US FDA of the Pfizer-BioNTech and Moderna vaccines in December 2020, a coordinated nationwide vaccination program saw 50% of the US population receiving at least one vaccine dose of a 2-dose regimen by 25 May 2021, blunting the effects of the pandemic thereby through the opening months of 2021 and breaking the causal chains between infection, hospitalization, and death. Vaccine uptake in the US has been uneven, however, with some pockets of the country reaching herd immunity vaccination targets of 80% or more, while other places, especially in hard-to-reach rural areas, have seen vaccinations lag. With the emergence of the Delta variant

in 2020, the virus has become resurgent in those parts of the US with lower vaccination rates, most notably the Deep South. As a result, the US is currently experiencing a new wave of COVID-19 cases, largely among the unvaccinated, even as the country is progressively reopening and relaxing restrictions after the various lockdowns and restrictions put in place to manage the pandemic in early 2020. Currently the country is locked in a tight race between vaccination and variants, as evinced by the dual charts of Figure 5.

Vaccine hesitancy in some parts of the United States continues to remain high as disinformation about risks proliferates, with some 40% of the population remaining unvaccinated at the time of writing. In this connection, lotteries have made a novel contribution to overcoming vaccine hesitancy, by offering large cash prizes to be awarded randomly among those who are vaccinated. The first such lottery-based incentive scheme was piloted by the Ohio Lottery in May 2021. This scheme met with some success, and vaccine drawings are now offered regularly by a number of US state lotteries, including Illinois, Louisiana, Missouri, and Oregon.

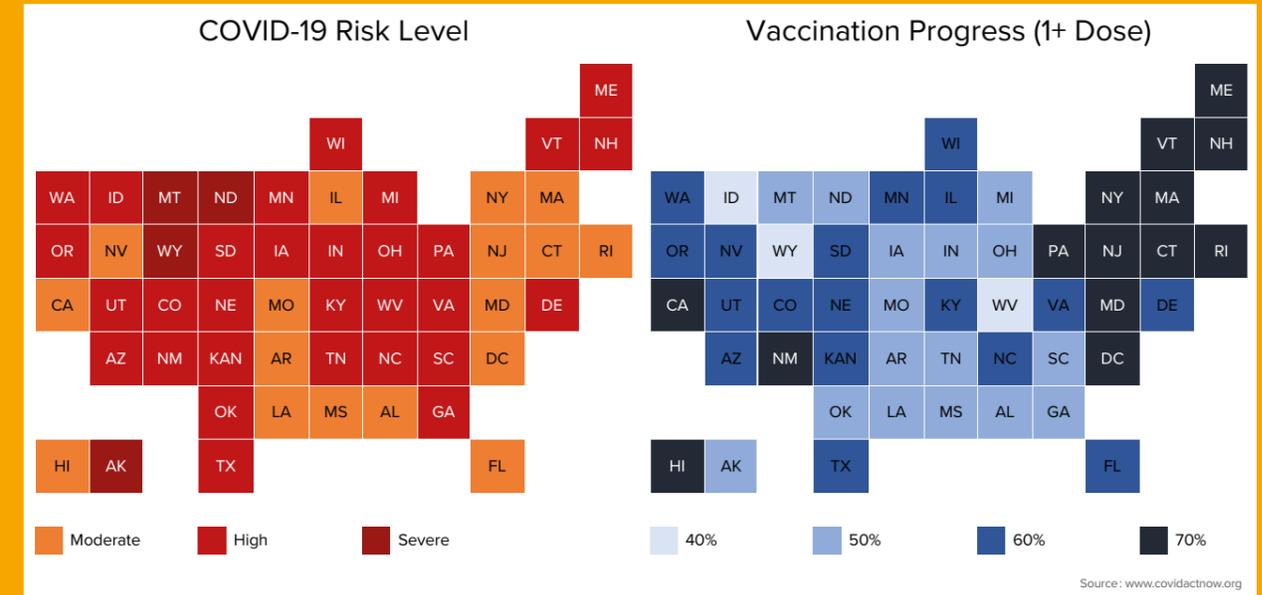


Figure 5. COVID-19 risk level for the US states vs. COVID-19 vaccination progress as of October 2021.

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Results by product category, FY 20 vs. FY 19

The lottery business in the USA was depressed in H1 2020 by the imposition of restrictions on movement early in the pandemic. In response, the national-level multijurisdictional games Powerball and Mega Millions lowered their starting price points and slowed the progression of their top prizes, in response to sales-for-jackpot slowing by about 20%. For the 2020 financial year (ending 30 June for most US lotteries), sales of these volatile games were 61% and 54% (respectively) of their FY 19 values. The lotto-type games of the individual jurisdictions generally fared better. Reports to the North American Association of State and Provincial Lotteries (NASPL), whose membership includes all US WLA-member lotteries together with a similar number of non-WLA-member lotteries, indicate that of 24 jurisdictions offering 'big' lotto games (top prizes over USD 1 million, annuitized), eight saw higher sales in FY 20 than in FY 19, while among 42 'small' or

'cash' lotto games, 17 showed such an increase. Multijurisdictional lotto games defining their prizes as payments 'for life' showed sales increases in 12 of the 36 jurisdictions offering them, with aggregate sales 24% higher than in FY 19. However, considering sales of lotto-type games as a whole across all NASPL reporters, the successes of small local games did not compensate for the weakness of the national games: FY 20 sales of lotto-type games were USD 9.9 billion, just 69% of the USD 14.4 billion reported for FY 19.

While lotto games depend on grand scale to make their large and growing top prizes sustainable, games based on matching three or four numbers offer more modest prizes and are not so scale-dependent. Usually, they are offered with draws every day, or twice per day. In the pandemic environment, games of this type grew about 6% (NASPL FY 20/FY 19).

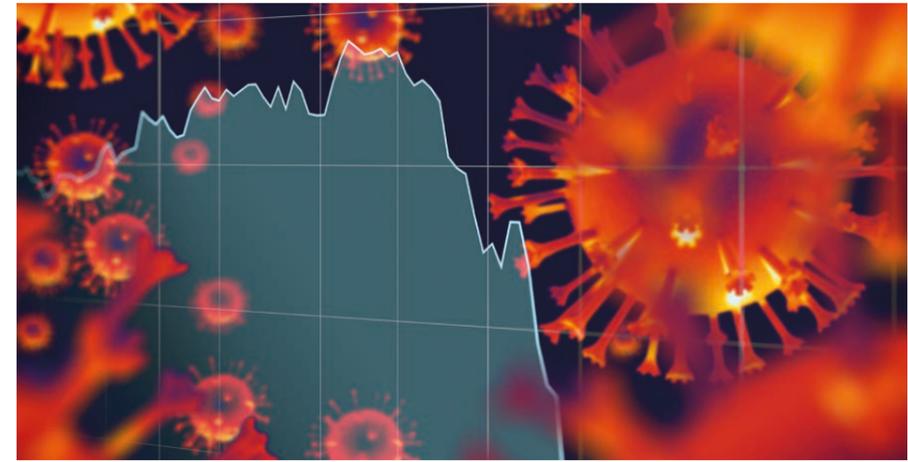
Printed instant games accounted for USD 51.5 billion (about 62%) of US lottery sales in FY 19. This total increased to USD 55.5 billion (67%) in FY 20. This increase in printed instant games (7.7% for the category) largely made up for the shortfall in lotto-type games, with the net effect that sales in FY 20 were 101% of those in FY 19 across traditional product categories (that is, excluding sports betting, video lottery terminals, and the like, offered by a few US lotteries, where volume is not usually reported as sales). Instant games operate at a smaller net win for the lottery than most draw games. Consequently, even though total sales changed little from FY 19 to FY 20, transfers to beneficiaries in FY 20 (USD 23.8 billion) were about 95% of the FY 19 level.

The strength of small numbers games and printed instant games is perhaps surprising, given that these are generally purchased in retail locations that saw less footfall during the pandemic. However, as with other goods, consumers can compensate for fewer store

visits by 'buying ahead'. Given the unchanging nature of the top prizes in numbers and instant games, this is a natural sort of compensation.

The five US lotteries that were able to offer electronic instant games (e-instants, for home or mobile play) all saw spectacular growth in this category (FY 20 / FY 19 = 190%). This was not due simply to the novelty of the category: non-WLA member Michigan Lottery, in 2014 the first in the US to offer e-instants, saw 88% growth in sales from FY 19 to FY 20. Rather, the ability to buy from anywhere has obvious advantages in the context of lowered mobility.

The voluntary closures of gaming and casino venues on Indian reservations in 20 contributed to a major decline in gaming revenues for FY 20. Figures from the National Indian Gaming Commission (NIGC) revealed Gross Gaming Revenue (GGR) for fiscal 2020 of USD 27.8 billion. For fiscal 2019, the corresponding figure from the NIGC was USD 34.6 billion. The USD 6.7 billion decrease in GGR represents a fall in gross gaming revenue of 19.5%. It was a similar story across the US as a whole for 2020, where commercial casino gaming industry revenue declined 31.3% year-on-year.



FY 21

While in FY 20 lottery sales initially fell, then shifted across products and recovered to FY 19 levels, in FY 21 and particularly in the second half of that period there was substantial growth across most product categories. Most US lotteries completed FY 21 last 30 June, and most have reported total sales at record high levels. The Arizona Lottery serves as a case in point. The southwestern lottery enjoyed a record-breaking fiscal year through to June 2021, with sales revenues up 31% year-on-year to USD 1.4 billion. The previous sales record had been set just 12 months earlier, in FY 20. The bonanza results resulted in more than USD 260 million in transfers to beneficiaries, including Arizona's public universities, health services, and local transport networks. Arizona Lottery Executive Director Gregg Edgar said, "The Arizona Lottery and our entire network of valued retailers are grateful to our players who are helping to do so much good in our great state by enjoying our games." He continued, "The more than a quarter billion dollars that they've returned to over a dozen vital programs and services this year are educating Arizonans, housing the homeless, creating jobs, protecting our iconic wildlife and landscapes, and advocating for innocent children who find themselves caught up in the court system." In addition to transfers to beneficiaries, the lottery paid out more than USD 977 million in prizes and injected US 97 million into the local economy through retailer commissions.

Sales figures have at this writing been compiled by NASPL only through the third fiscal quarter (ending 31 March 2021). Even with partial data, however, great growth in most product categories

is evident. Sales of traditional lottery games in the first three quarters of FY 21 were 117% of the corresponding part of FY 20. Printed instant games grew to 119% of FY 20 level. The national-scale games Powerball and Mega Millions recovered, aided by a USD 1 billion advertised jackpot (the second-highest ever) in Mega Millions in January 2021. Aggregate sales of the two games were 134% of the depressed FY 20 levels, though still well below the record sales of the same period in FY 19 (which included both a USD 1.5 billion Mega Millions jackpot and a USD 758 million Powerball jackpot). The less volatile state-level lotto games grew in the first three quarters of FY 21 to 109% of the FY 20 level. Daily numbers games continued to grow, achieving 117% of FY 20 sales. The few US states reporting sales of e-instants reported sales volume double that of FY 20. Also notable was the growth of 'new game' content, such as Cash Pop™, which sees players win by matching against a single number in a game matrix of 1 to 15; prize payout is determined by the size of the price point times a randomly chosen multiplier in the range 5 to 250. Introduced by the New Jersey Lottery in 2019, the game has since expanded to Georgia and Kentucky, with other states to follow.

Beneficiary transfers, like sales, are generally reported to be at record levels. More precise conclusions will follow the compilation of results from all jurisdictions.

The more than a quarter billion dollars that [have been] returned to over a dozen vital programs and services this year are educating Arizonans, housing the homeless, creating jobs, protecting our iconic wildlife and landscapes, and advocating for innocent children who find themselves caught up in the court system.



Canada



Canada's response to the COVID-19 pandemic, coordinated by the Canadian Federal government and the individual provinces, has resulted in better outcomes overall than in the USA. Although Canada's vaccination program started later, by May 2021 the percentage of the population fully vaccinated reached 50%, and thereafter exceeded the vaccination rate achieved in the USA. At this writing, 66% of the population has been fully vaccinated (with 74% having received at least one dose) and the rate of new cases is much lower than the peak rate seen before vaccinations became available.

Lottery results, FY 20 vs. FY 19

Sales results are available for all provinces except Quebec, which reports based on GGR. Overall, sales in FY 20 declined only to 98.4% of the FY 19 level. The more volatile national lotto games (Lotto Max and Lotto 6/49) declined by 3% in aggregate. Instant sales were unchanged, while numbers games registered small increases. A decline of 6% in sports betting was largely offset by nearly six-fold gains in Internet games, available in British Columbia, Ontario, and the Atlantic provinces of Canada.

FY 21

NASPL data indicates that for the first three quarters of FY 21, sales of lottery games in the reporting provinces increased to 116% of FY 20 levels. This increase was largely driven by a 30% increase in sales of instant games year-on-year and a further four-fold increase in Internet-only games. The national lotto games gained 5% in aggregate year-on-year, while provincial lotto games gained 18%.

NASPL data indicates that for the first three quarters of FY 21, sales of lottery games in the reporting provinces increased to 116% of FY 20 levels. This increase was largely driven by a 30% increase in sales of instant games year-on-year and a further four-fold increase in Internet-only games.

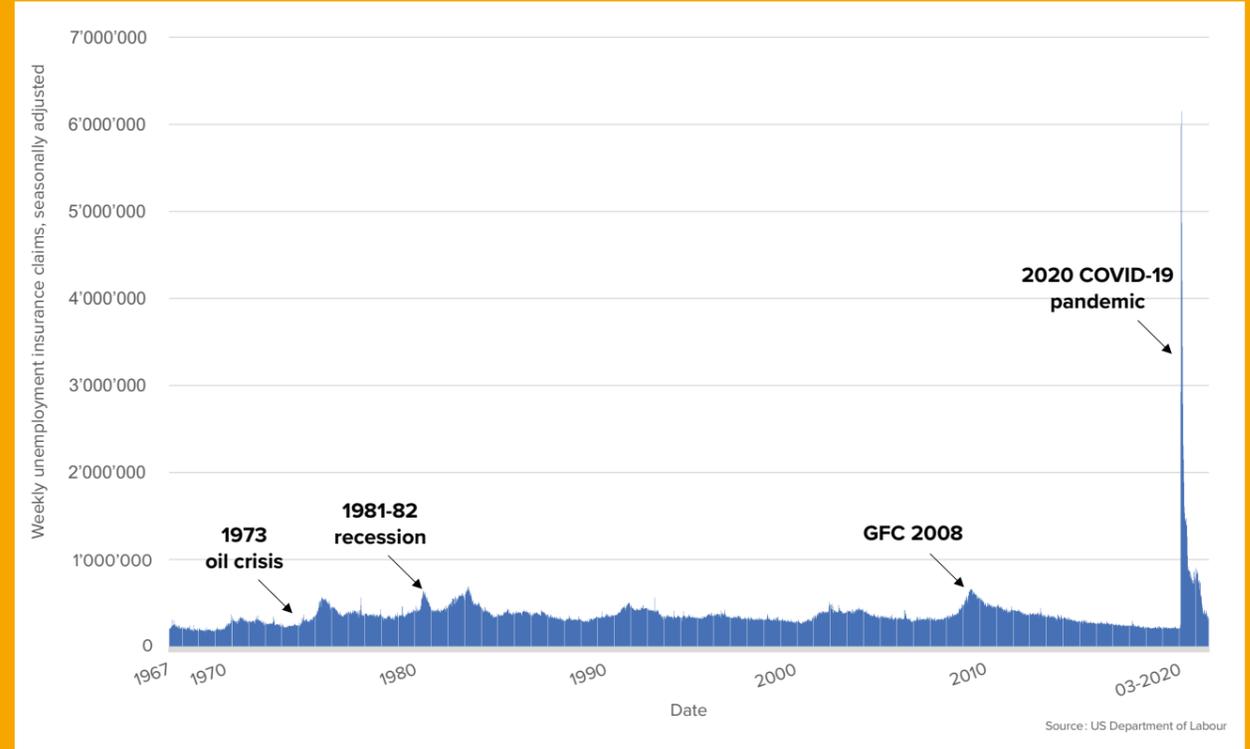


Figure 6. US weekly unemployment claims (seasonally adjusted), 1967–.



Drivers of change in North America

Despite the great advances made by jurisdictions that can sell lottery products over the Internet, most lottery sales in North America are still made face-to-face at retail. The resilience of lottery sales in the context of greatly restricted retail business was understood to be largely due to even greater impacts of the COVID-19 pandemic on competing gaming venues, such as casinos. Many casinos were closed outright during the first months of pandemic response. Casinos have now largely re-opened; however, we do not see a compensatory slump in lottery sales. Rather it appears that consumer spending on gaming may have increased. For example, in the US state of Maryland, both casinos and lottery are under the control of a single state agency, the State Lottery and Gaming Control Agency. In the financial year just completed (FY 21), the lottery and the casinos together contributed 6.1% more than in their previous record year of FY 19. Although most of the gain came from the lottery, the casinos exceeded their FY 19 performance despite operating at reduced capacity for eight out of 12 months.

Statistics developed by the US Bureau of Economic Analysis (BEA) indicate that real disposable personal income – that is, income from all sources minus taxes – increased dramatically during the ‘lockdown’ phase of pandemic response (especially the second quarter of calendar 2020), and remains somewhat elevated currently, compared to the immediate pre-pandemic period. In light of US unemployment figures (see Figure 6), this may seem counterintuitive, but personal incomes have been buoyed in many cases by US Federal and State relief programs. Personal consumption expenditures decreased during the lockdown – there were fewer places to spend – before rebounding later in the year. In short, it appears that in the USA at least, people simply have more money to spend. In view of the continuing disruption to many hospitality and entertainment businesses, they also have fewer ways to spend it. Gaming in general, and lottery in particular, are well positioned to capture some of this disposable income.

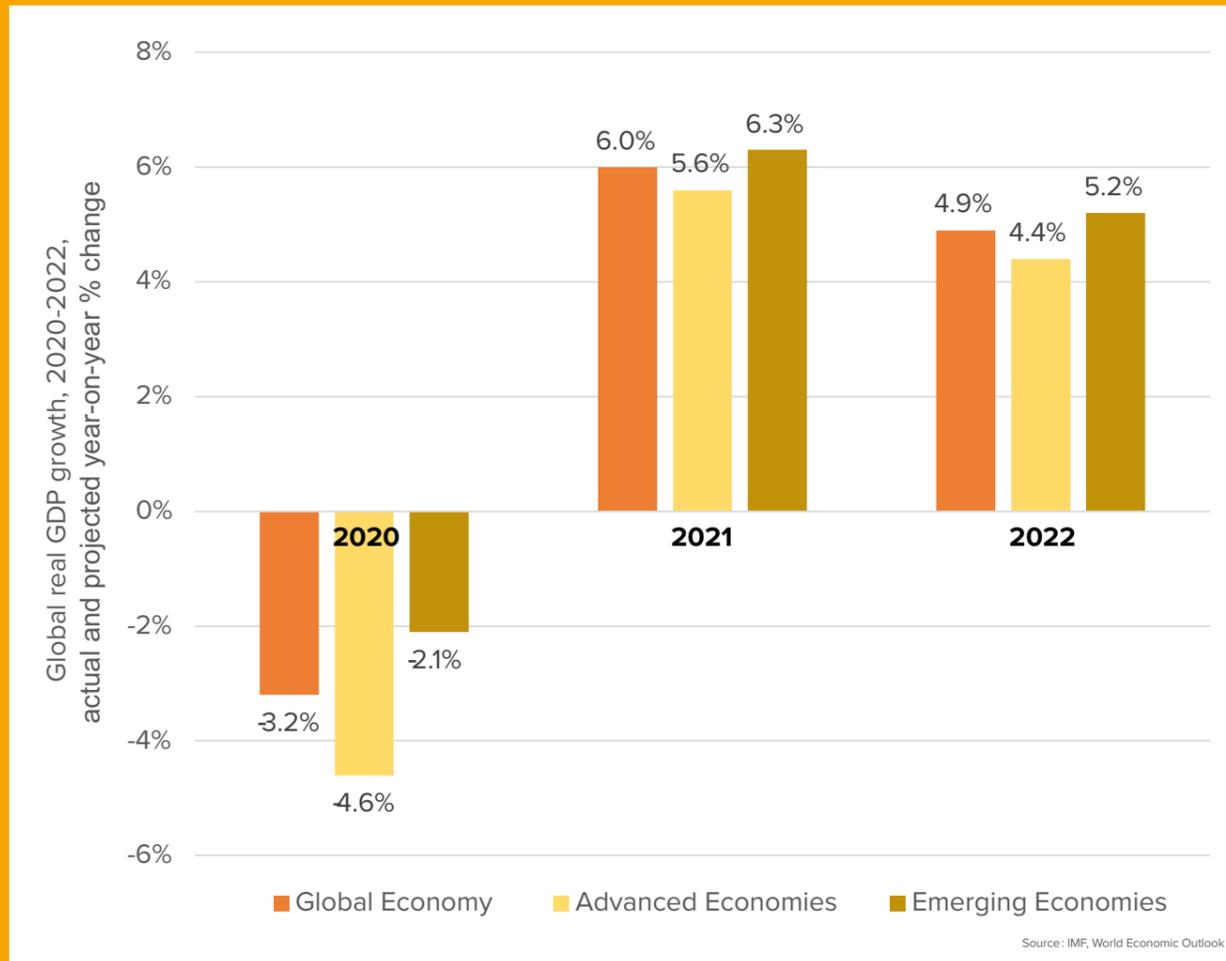


Figure 7. IMF actual and projected outlook, 2020–2022, for global, advanced, and emerging economies.

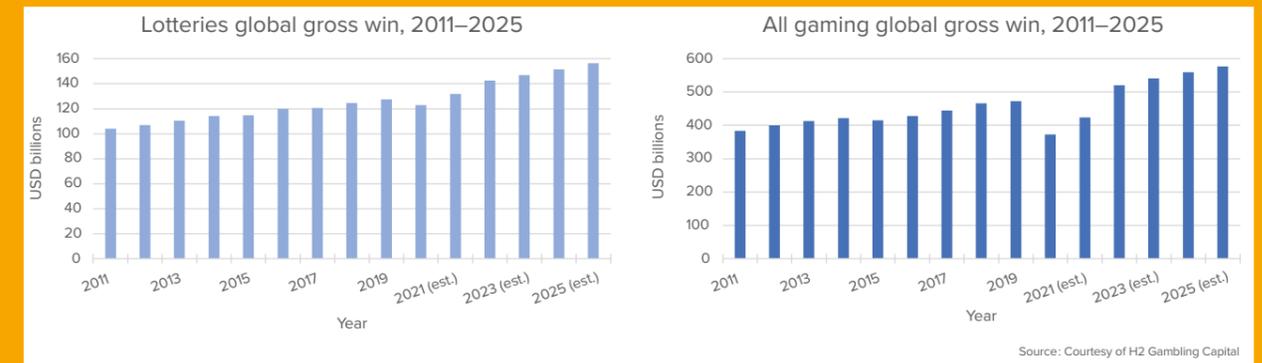


Figure 8. H2GC actual and projected outlook, 2011–2025, for global gross win (lotteries) and global gross win (all gaming).

Outlook

With the advent of the COVID-19 Delta variant, and the arrival of further variants expected, most public health officials globally remain of the opinion that the pandemic still has many months to run, even in countries with heavily vaccinated populations. Israel, which has over 60% of its population fully vaccinated, is a sobering case in point. At the time of writing, the country is seeing an upsurge of infections with more than 7,000 new cases daily.

With the development of effective vaccines and economies around the globe continuing to reopen, the IMF paints a rosier picture for the global economy in 2021 and 2022. After projecting a 4.9% decline in real GDP globally for 2020 in April of that year, the contraction in worldwide economic output ultimately came in at a better-than-expected 3.2%.

The IMF revised its initial growth projections for 2021 of 5.5% upwards to 6.0% in April 2021, in a move that reflected additional fiscal support in some large economies, a continued vaccine-powered economic recovery in H2 2021, and the continued evolution and adaptation of the global economy to the present pandemic circumstances (including sharply decreased mobility). For details, see *Figure 7*. The IMF's improved outlook is reflected in US unemployment figures, which also track the pandemic as a whole: a sharp, rising economic shock followed by a longer road to recovery, underpinned by US Federal and State government unemployment relief and the coordinated vaccine rollout nationwide, as previously illustrated in *Figure 6*. The improved economic outlook notwithstanding, the IMF cautions however that high uncertainty continues to surround its forecast, with outcomes

being dependent on the course of the pandemic, the effectiveness of policy in support of a vaccine-powered normalization, and the development of financial conditions more generally.

The IMF revised its initial growth projections for 2021 of 5.5% upwards to 6.0% in April 2021...

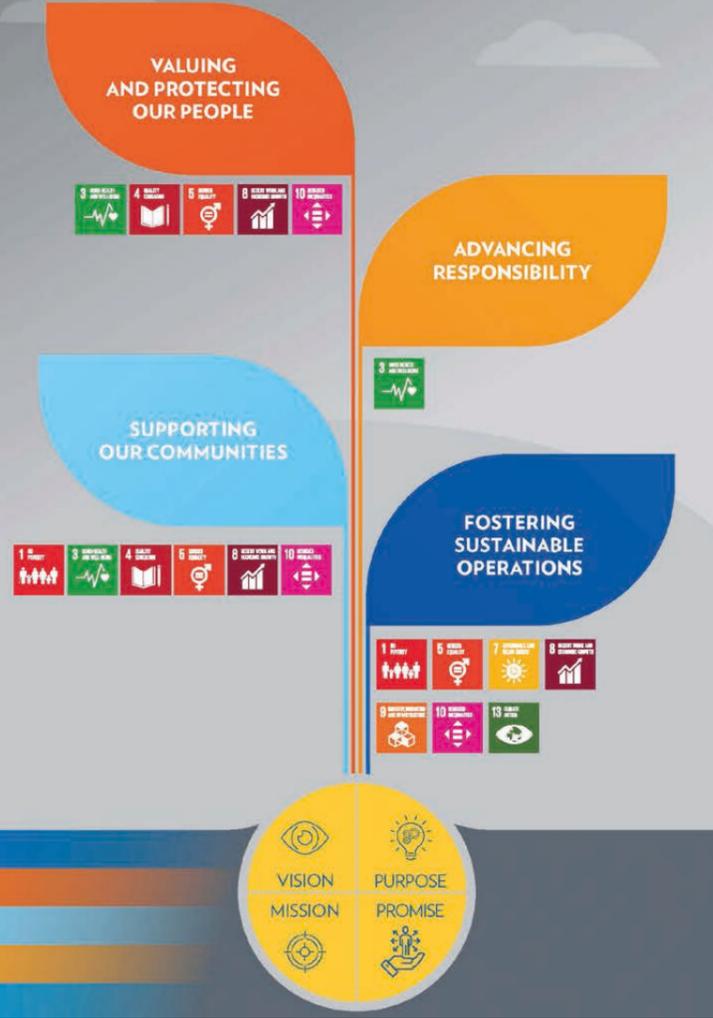
For lotteries and sports betting operators, the history of the pandemic has followed a similar arc to the general economy globally: an initial major dislocation and recovery through to end 2020, followed by a period of increased spend – sometimes to record levels – through the first half of 2021. However, it is not yet clear if the gains made in the market in the six months up to mid-year 2021 will be 'sticky'. Sustaining current levels of lottery sales may depend upon maintaining lottery as an attractive alternative, as the currently restricted field of entertainment options recovers. Nonetheless, H2 Gambling Capital remains bullish, particularly on lotteries, with their projections

suggesting a return to pre-pandemic levels of gross win as early as end 2022: for details, see *Figure 8*.

Turning to the future, the WLA will continue to report on developments in its continuing coverage of the COVID-19 pandemic and its impact on the lottery and sports betting sector in future editions of both the WLA magazine and the WLA Quarterly Lottery Sales Indicator. By end 2021, a truer picture of the scale and effect of the pandemic on lotteries, sports betting, and gaming should have emerged; the WLA looks forward to reporting on subsequent developments accordingly.



IGT's framework for corporate social responsibility is grounded in the company's values and is focused on nine of the United Nations' Sustainable Development Goals. These goals are integrated into the company's four strategic priorities: Valuing and Protecting Our People, Advancing Responsibility, Supporting Our Communities, and Fostering Sustainable Operations.



IGT | Future Forward and Purpose Driven

The impacts of the pandemic brought with them a new set of opportunities, risks, and consumer expectations. IGT provides an update on how the company is staying ahead of the challenges and operating responsibly to support customers and contribute to a more equitable and sustainable world.

The pandemic amplified a host of challenges for people everywhere as health concerns collided with financial and social ones. It also spurred a period of reassessment for businesses, individuals, and communities. Unsurprisingly, the broader relationship between business and society is receiving greater attention as well.

This trend was building in the decade prior to the pandemic, when more organizations – from Silicon Valley tech firms to some of the world's lotteries – began reporting publicly on their efforts to operate sustainable, profitable, and purpose-driven businesses. IGT has been at the forefront, now entering its 14th year of publishing a sustainability report.

The momentum is expected to continue and accelerate toward greater inclusion and accountability, as CSR efforts have always by definition reflected an organization's relationship with a gamut of stakeholders, including customers, employees, local communities, governments, suppliers, and the environment.

Post-Pandemic Issues

Global consumer trends agency Foresight Factory, IGT's longtime partner, projects that "with COVID-19 contained, climate change will become the dominant global threat" and, importantly, it will increasingly

be viewed as a social issue." Tackling climate change is increasingly a goal for governments as well as consumers.

Foresight Factory sees a further trend toward rethinking how human work is valued across the supply chain. "Consumers are recognizing that it's not just the environmental cost of products that matters," says Foresight Factory's Dominic Harrison, noting that companies would do well to "offer transparency across the entire supply chain."

Writing in *Forbes* recently, a CSR specialist observed that after the protests over racial and social injustice in the U.S. and elsewhere, "government officials, inves-

tors, employees and customers [will also] demand more inclusion and equity from the companies they associate with."

IGT has been cited as a leader within and beyond the industry for its long-standing commitment to these and other important aspects of social responsibility – from the company's adherence to the world's most demanding **Responsible Gaming frameworks** to IGT's selection as one of only 325 companies across 50 industries included in the **2020 Bloomberg Gender Equality Index**, which recognizes companies that are committed to advancing women's equality. The gaming industry's **All-In Diversity Project** also celebrated IGT as one of the sector's leaders in making progress toward inclusion in the workplace.

Like other firms on the leading edge of CSR practices, IGT looks at a broad spectrum of sustainability concerns, from the company's energy use to wider environmental and human rights issues. Last year, IGT qualified as an Outperformer with **Sustainalytics** and in 2021 was ranked second in the industry by this leading independent global provider of environmental, social, and corporate governance (ESG) ratings to investors. IGT is ranked by several other ratings providers, among them Morgan Stanley Capital Investment (MSCI). MSCI ratings aim to measure a company's resilience to long-term ESG risks. Companies are scored on an industry-relative AAA-CCC scale across the most relevant Key Issues based on a company's business model. **IGT's rating is at AA**, and with regard to the Casino & Gaming sector it has been ranked among the group of the best performers.

Sustainable Procurement

Participating in the **EL/WLA Responsible Worldwide Webinar Week** in September, IGT's **CSR Senior Manager, Stefania Colombo**, described the steps that IGT is carrying out to protect human rights in its business and specifically throughout its supply chain.

Along with examples of the policies and procedures in place at IGT, Colombo described the regulatory environment for human rights and supply chain issues, the levels of impact an organization can make, and the many reasons why human rights are an essential issue for businesses today.



Stefania Colombo, CSR Senior Manager at IGT, participated in the recent EL/WLA Responsible Worldwide Webinar with a presentation on ensuring respect for human rights throughout the supply chain.

"Enterprises can affect the human rights of their employees and contract workers, their customers, workers in their supply chains, communities around their operations, and end users of their products or services," Colombo notes. To this end, IGT created a **Sustainable Procurement Working Group** in 2018 focused on **the protection of human rights and the environment** along the organization's entire supply chain. In 2019, this working group established the **IGT Supplier Code of Conduct**, to which the company's suppliers are required to adhere. The group is now defining

an **Action Plan** aimed at integrating sustainability criteria in the supplier evaluation at a global scale. "This work requires an in-depth analysis of the supply chain, aimed at identifying potential risk factors," explains Colombo. But that's just the initial step.

The working group is also tasked with defining the tools for assessing the risks and sustainability performance of suppliers, implementing the responsible supply chain management procedure based on the level of risk, and conducting periodic reviews to fuel continuous improvement.



A Comprehensive Review

IGT's annual sustainability report provides a detailed account of these sustainable procurement initiatives and all other aspects of the company's CSR approach.

The most recent report, released in July, demonstrates that while the world changed in 2020, IGT's positive momentum and commitment to sustainable growth did not. Like lotteries worldwide, the company thrived through its ability to embrace change and demonstrate immense flexibility to support employees and customers.

During this time, IGT continued to develop specific targets and initiatives that contribute to the achievement of the nine out of 17 **Sustainable Development Goals (SDGs)** that the company has identified as areas of focus within the 2030 **United Nations Agenda for Sustainable Development**.

The company is participating in this global effort by pursuing SDGs within the company's scope of operations based on IGT's four strategic priorities: Valuing and Protecting Our People, Advancing Responsibly, Supporting Our Communities, and Fostering Sustainable Operations. The approach involves seven working groups comprised of different IGT departments.

IGT has also aligned its sustainability initiatives with the **United Nations Global Compact (UNGC)**, the largest corporate responsibility initiative in the world for the development, implementation, and disclosure of responsible corporate policies and practices.

And IGT continues to develop Responsible Gaming solutions that meet and exceed the requirements of various jurisdictions, achieving recertifications and recognition from organizations such as the World Lotteries Association and the Global Gambling Guidance Group.

"Our customers and employees care a lot about sustainability – it's not an academic exercise," says **Jay Gendron, Chief Operating Officer Lottery**. "Customers come to us and ask us to demonstrate our leadership and commitment. And with about 11,000 employees operating in more than 100 countries, our sustainability practices are also supported by those strong relationships with our people, customers, and suppliers around the world. Customers – and players – can be confident in our values and our approach as we continue to deliver outstanding customer service, goods and services."

Explore IGT's most recent Sustainability Report online now at [IGT.com](https://www.igt.com)

"We promote a sustainable, balanced, and long-term approach to Responsible Gaming, where player protection is continuously considered in our work. In addition to complying with strict procedures, for many years we have focused on continuous innovation to ensure that our Responsible Gaming program represents our ongoing commitment to players."
 – Fabio Cairoli, CEO Global Lottery, IGT



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- Biometrics for intuitive face and fingerprint sign-in
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Scientific Games fuels global offerings with expansion and acquisition

Strengthening connection between retail and digital instant win entertainment is part of company's growth plan

The remarkable growth in instant win entertainment over the last several years – both retail and digital – is a driving force behind the recent investments Scientific Games is making. The company's success as a global lottery provider has positioned it as the leader in game portfolio management, offering synergies between traditional instant "scratch" games sold at retail and instant games played online.

The global instant game market is projected to grow at 4% CAGR from 2020 to 2025, with the iLottery segment projected to reach 14.4% growth. In the U.S. alone, the iLottery market is projected to grow from \$3 billion in sales today to \$12 billion by 2025.

It's happening. In the last year, Scientific Games' work with the perennially innovative Pennsylvania Lottery to connect retail and digital has increased the Lottery's \$3.7 billion instant product category sales by more than 17% and its \$100 million iLottery category by more than 22% (fiscal year 2020 vs fiscal year 2021).

Another example is the Atlantic Lottery's strong focus on digital evolution led to significant growth for digital lottery performance. Across three fiscal years, 2018 through 2020, the Lottery grew total online sales by 152%, from \$38 million in 2018 to \$96.5 million in 2020. Equally as impressive, over the same period retail instant game sales grew by 4.3%, from \$228.5 million to \$238 million.

...when retail and digital instant game portfolios are designed and executed properly, growth is the result.

In both instances, when retail and digital instant game portfolios are designed and executed properly, growth is the result.

Instant Growth

It's why Scientific Games is ramping up in an era that saw production and deliverables in many industries slowed or halted due to the pandemic. The company is pulling out all the stops, and pushing forward to keep 130+ lottery customers in 50 countries around the world up and running.

Relying on its logistics expertise and patented technologies, the company stood by its promise and kept the pipeline to lottery retailers flowing with scratch games throughout 2020 and 2021, strategically maneuvering around government shutdowns, shipping and supply chain challenges. With contingency plans activated and stringent safety protocols in place and, an all-in approach from managers and employees at five worldwide production facilities supported record fiscal years for many lotteries.

In the midst of global chaos, new production technology was being built and installed at its Leeds, UK production facility which serves the UK National Lottery and 50 lotteries in Europe and internationally. The Leeds facility is one of Scientific Games' five global instant games production centers.

Come September, the company was finally able to celebrate the official ribbon-cutting of its newest, most advanced lottery instant game technology that expands global production by 20%.

Hilary Benn, Member of UK Parliament, participated in a COVID-safe ribbon-cutting ceremony and production tour with Mark Scholey, VP Global Manufacturing, and Kevin Anderson, VP Global Strategic Accounts EMEA,



as well as a host of Scientific Games' UK employees.

"Our multi-million dollar investment in this UK production expansion represents our strong commitment to serve the UK National Lottery and lotteries throughout Europe, and to entertain the world's players through our instant game innovation," said Anderson.

With new production technology now operational, the world's largest creator, manufacturer and services provider of lottery instant games expects the additional production volume to add an estimated 175 employees to the company's UK workforce.

"The production technology expansion allows lotteries to bring new games to market more quickly so they can offer just-in-time inventory at retail. It strengthens our nearly 50 years of global leadership in lottery instant products, and importantly helps our lottery customers drive maximum proceeds to support their beneficiary programs," said Scholey.

The new technology is the most advanced in the world, offering a wide range of flexibility in instant game innovation including playstyle, color, images, ticket sizes, and specialty papers and finishes. The technology manufactures instant game tickets at 1,000 feet per minute and supports the company's commitment to quality environmental practices with the use of green technology, recyclable paper, water-based inks, and energy-efficient processes.

Our innovation teams are focused on keeping them entertained with engaging content, and connecting the retail and digital lottery experience.

"More than 20 million new players tried instant scratch games during COVID-19," said Scholey. "Our innovation teams are focused on keeping them entertained with engaging content, and connecting the retail and digital lottery experience."

Based on the significant uptick in online purchasing and entertainment usage during the pandemic, digital plays an increasingly important role in the lottery product mix.

Digital Lottery Explosion

The current forecast* on the potential for iLottery is an estimated \$47 billion globally by 2025. And it's exactly why – in addition to expanding instant game production capacity – Scientific Games recently acquired a leading digital instant game content studio, UK-based Sideplay Entertainment, to expand its portfolio of iLottery content and accelerate the global market penetration of its iLottery business.

Sideplay is the primary supplier of digital instant games to the UK National Lottery, one of the largest interactive lotteries in the world. In North America, Scientific Games is the exclusive distributor of Sideplay's top-performing content for industry-leading iLottery programs, including the Pennsylvania Lottery and Loto-Québec.

"This acquisition highlights our growth plan, our strategies around providing a wide array of high-performing digital content, and our goal to become the number one iLottery provider," said Anderson. "We are delivering a breadth of products that ensures the right mix of games for our customers and players to facilitate growth and create exceptional experiences."

The combination of Sideplay's innovative portfolio of digital games and agile content distribution technology with Scientific Games' iLottery platforms and

digital solutions is expected to increase player engagement and drive further growth of our iLottery solutions in markets around the world.

The addition of Sideplay's digital game server content distribution technology to Scientific Games' existing digital tech stack will also allow for increased speed-to-market.

Consumer behavior over the last year is a measurement guide. There is a wider base of consumers online who are interested in lottery products. To remain relevant and keep lottery game entertainment at the forefront, lotteries are planning now for a future that includes iLottery.

Currently, Scientific Games services more than 20 iLottery customers in nine countries—Azerbaijan, Canada, Denmark, Germany, Norway, Sweden, Switzerland, Turkey, and the United States.

"Scientific Games is focused on ways that we can increase our speed to market and player experiences," said Scholey. "One of the pillars for success is investment in the games players want to play. We want to deliver excellent experiences through great game content. This is an overarching goal across all our product lines."

As for instant scratch games, the company continues to set the global lottery industry's gold standard for game programming security, producing more than 3,000 instant games per year that drive nearly 70% of global instant game retail sales.

Now, Scientific Games is channeling its five decades of knowledge and expertise performance for retail instant game portfolios with the same data-driven approach to creating synergies with digital instant portfolios. It's a connection driven by consumers that's crucial for lottery sustainability.

*Sources: La Fleur's; Projected growth rates based on H2 Gambling Ca(H2GC) Capital Global Gaming Data, 2020 Edition.





OLG Tickets

Tri-State Big Spin event

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Who's ready for the big reveal?

Building suspense has always been an effective tool to keep customers engaged. Even popular streaming services, which have typically been known to drop full seasons of a show for viewers to binge watch over a short time, have recently moved to releasing weekly episodes to capitalize on cliffhangers and captivating endings that keep viewers coming back. Not only does it extend the lifecycle of the show, but also ensures customers stay subscribed to their platforms longer.

In the instant ticket industry, gratification most often comes immediately which has been the basis for countless successful games and unparalleled sales in recent years. However, lotteries must continually look for new ideas and concepts to attract and retain players, as well as engage new players including those that have turned to lottery as a source of entertainment during the pandemic. Leveraging the 'curiosity gap', that is, the difference between what we *already* know and what we really *want* to know, is a powerful tool. Like staggered show releases on streaming services, extended game play and prize reveals allow lotteries to further entertain and captivate their players with not only instant wins but rewarding experiences.

This concept manifests itself in several outstanding games launched by lotteries, in partnership with Pollard Banknote, that effectively increase the entertainment value and build the important bridge between traditional retail and digital channels.

A new \$pin on an instant scratch ticket

A great example of a successful omnichannel game that provides a truly unique experience and unparalleled entertainment value is *THE BIG \$PIN*. This concept, which has now been

launched by several North American lotteries, was created by the Ontario Lottery and Gaming Corporation ("OLG"). While each lottery has customized the game to accommodate their own goals and jurisdictional constraints, a common thread is the thrill of revealing the top prize by spinning a giant prize wheel at an exciting Big Wheel spin event.

OLG maximized engagement of this game with three prize tiers. First, on the instant ticket, winners reveal either a cash prize or a "SPIN" prize. If a "SPIN" prize is revealed, the player wins a digital spin at retail and receives a guaranteed prize of either cash or a "BIG SPIN". "BIG SPIN" winners have the chance to spin a Big Wheel at a recorded live event with a guaranteed large cash prize.

OLG had planned to keep the first iteration of the game in market for six months, but it sold out in four short weeks. The game continues to perform in Ontario and has since been elevated to *THE BIGGER \$PIN*.

Recognizing the potential of the concept, the New England Tri-State Lotteries took the BIG \$PIN across state lines for a multi-jurisdictional game launched in Maine, New Hampshire, and Vermont. The \$5 *BIG \$PIN* game was designed to extend the life of the game and capture the moment when a player knows they have won

a prize as they anxiously await the spin of the wheel to determine the prize amount. The scratch portion of the ticket gave players the opportunity to win an instant cash prize or a SPIN prize. Winners of the SPIN prize were able to reveal the SPIN on a retail monitor in a store and/or on their mobile device for a guaranteed cash reward.

The Tri-State Lotteries added even more thrill to the game by giving players the opportunity to enter a second chance draw to appear on stage at *THE BIG \$PIN* Live Event—with lucky winners receiving a minimum guaranteed prize of \$50,000, up to a maximum prize of \$250,000, and VIP treatment at a concert.

THE BIG \$PIN was a huge success for the Tri-State Lotteries. The game performed exceptionally well in each state. On average, sales were 67% higher than similar \$5 games based on 12-week sales. As a result of this success, all three lotteries reordered the game.

Hitting the jackpot with player engagement

The Interprovincial Lottery Corporation ("ILC"), which brings together Canadian lottery organizations to facilitate national games, recently launched their own multi-jurisdictional game, the *Jackpot* family of games featuring a unique second chance program.

The British Columbia Lottery Corporation ("BCLC"), Western Canada Lottery Corporation ("WCLC"), and OLG partnered to offer *Jackpot* instant tickets at the \$5, \$10, and \$20 price points. In addition to the traditional play area where players can win instant prizes, the tickets include an extra scratch-off area for a second chance contest. Players reveal contest codes from their *Jackpot* tickets to enter up to twenty \$25,000 weekly draws and a \$250,000 grand prize draw. While second chance draws are not new, the significant number of draws and the scale of the prizes available facilitates exceptional, extended engagement. The weekly draws keep the game top of mind for players which helps to drive continued sales and the final grand prize draw takes place a month after the weekly draws conclude, maintaining interest and building further excitement.

Additionally, every contest code entered gives players a chance to win additional bonus entries by playing a fun slots-style digital game. As an added opportunity

to encourage players to engage with the Lottery, the *Jackpot* program allows people to request contest codes, even without purchasing a ticket, attracting potential new players into the lottery ecosystem.

The added entertainment value provided by the second chance program and digital game have been embraced by new and existing players alike. During the first three months of the program, the majority of players visiting the site were under 45 years of age, demonstrating the appeal of the game to younger players. In total, almost 1.2 million tickets have been entered into the second chance program. The players holding those entries will continue to be invested long after scratching their ticket, providing deeper and continued engagement with the Lottery.

The perfect storm for extended entertainment

Games featuring a progressive jackpot are another compelling concept that, while not new to lottery, have not been a common feature of instant games—until now. A progressive jackpot is a jackpot that increases each time the game is played without producing a winner. Players' interest and desire to play grows as the jackpot increases.

The Florida Lottery's innovative, new *STRUCK BY LUCK* instant ticket, launched in partnership with Pollard Banknote in August 2021, is using progressive jackpots to take instant tickets to the next level.

Combining the familiar features of an instant ticket with a multi-tiered digital app that serves to pique players' curiosity by adding an exciting progressive instant jackpot element, *STRUCK BY LUCK* transcends traditional instant game play.

After scratching a *STRUCK BY LUCK* instant ticket, a lucky player can win an instant cash prize of up to \$1 million or uncover a "Storm" prize symbol representing a guaranteed win of an undisclosed amount of up to \$5,000. The exact "Storm" prize amount is revealed by scanning the ticket's barcode on the *STRUCK BY LUCK* ticket app, visiting the Lottery's website, or by using a ticket checker at retail.

If the "Storm" prize reveals a money bag symbol, the player wins the progressive jackpot. The prize amount is the jackpot value at the time the ticket is redeemed, which can reach up to \$75,000. Winners can claim their prize immediately or take

their chances and wait for the jackpot to grow as more tickets are purchased. But if another progressive jackpot winner validates their ticket first, the jackpot resets to \$5,000 and starts growing again.

Players can check the digital app or Lottery website for the current jackpot value and see the location of where other prizes were won. The app can also send notifications when players nearby have been "Struck by Luck" to help increase winner awareness. This innovative product creates a multi-channel experience that maximizes player engagement and ties the instant ticket experience to both the retail and digital platforms.

After nine weeks in the Florida market, there have been over 170,000 app downloads, over 750,000 site visits, and over one million games played, with the majority of digital reveals taking place on smartphones. The incredible success of the game translated into the *Struck by Luck* app ranking in the top 50 downloaded entertainment apps in the U.S. shortly after launch!

Extending games continues to be a winning strategy

As recognized across many industries, including most recently, streaming services, carefully leveraging the power of the 'curiosity gap' to extend an experience, increase entertainment value, and deepen engagement over time, strengthens customer loyalty and results in continued growth. For Pollard Banknote, this means continuing to explore new ideas and innovative concepts, such as *THE BIG \$PIN* and progressive jackpots, and customizing the right solutions for each specific jurisdiction to help our lottery partners maximize revenues for the good causes they support.



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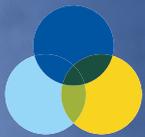
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