

A CHANGE ON THE HORIZON FOR THE GAMING INDUSTRY: TRENDS,
BLOCKCHAIN TECHNOLOGY, AND CRYPTOCURRENCY

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INTRODUCTION

Gaming laws and regulations continue to face new challenges as technology advances. Technology is revolutionizing the gaming industry; however, the gaming industry could be in murky waters if technology regulations do not keep up with the times.¹ While these technological innovations reflect the gaming industry's response to shifting consumer trends by directing its focus on millennials, the gaming industry needs to properly prepare for what comes next. Cryptocurrency in the online gambling world has seen an enormous boom in the past two years.² This surge echoes the already changing gaming industry market and the international world's calculated steps to incorporate cryptocurrency in response.³

The technologically driven gaming experience will replace the traditional notions of gambling.⁴ Currently, these trends are evident in casino design, marketing strategies, payment methods, choice of interactive games, and

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¹ See Press Release, SmartPlay.Tech-, Blockchain Gambling Machine Placed in Land-Based Casino (Dec. 25, 2017), <https://news.bitcoin.com/pr-smartplay-tech-blockchain-gambling-machine-placed-in-the-land-based-casino/>.

² See generally Mina Down, *How Gaming Could Drive Cryptocurrency and Blockchain Adoption*, HACKER NOON (Jan. 23, 2019), <https://hackernoon.com/how-gaming-could-drive-cryptocurrency-and-blockchain-adoption-7ab12bc88138>.

³ Press Release, Coinspeaker, How Cryptocurrencies Have Impacted the Online Gambling Industry (Apr. 25, 2018), <https://www.coinspeaker.com/cryptocurrencies-impacted-online-gambling-industry/>.

⁴ See *id.*

entertainment.⁵ These trends demonstrate that casinos are aiming to revamp the gaming experience for the customers of tomorrow.⁶ This gaming overhaul means that regulations will have to reflect such developments in a way that embraces and enhances change to facilitate technological growth rather than inhibit it.

Cryptocurrency is currently changing the financial playing field.⁷ The gaming industry is merely a snippet showing how cryptocurrency has pervaded various industries at a global scale.⁸ Although cryptocurrency has gained momentum and has permeated gaming across the board, especially outside of the United States, it is difficult to predict its influence in the future because it lacks stability.⁹ Experts disagree on whether cryptocurrency is here to stay and whether digital currencies will become part of the mainstream.¹⁰ Yet, blockchain technology itself appears to be the “buzzword of the year, if not the decade” because of its real-world application.¹¹

It is important to note that cryptocurrency falls under the blockchain technology umbrella.¹² Even if casinos are not receptive to cryptocurrency, blockchain technology can revolutionize casino transactions and enhance players’ experiences. Cryptocurrency has yet to gain traction in both the United States’ financial and gaming industries for various issues, some of the issues include volatility, money-laundering compliance, and criminal activity risks, as

⁵ Samantha Beckett, *Are Land Based Casinos Doing Enough to Attract Millennials?*, CASINO.ORG (Sept. 11, 2017), <https://www.casino.org/blog/are-land-based-casinos-doing-enough-to-attract-millennials/>.

⁶ *Id.*

⁷ See generally Christine Lagarde, *Winds of Change: The Case for New Digital Currency*, Speech at the Singapore Fintech Festival (Nov. 14, 2018), INT’L MONETARY FUND, <https://www.imf.org/en/News/Articles/2018/11/13/sp111418-winds-of-change-the-case-for-new-digital-currency>.

⁸ See e.g., Globalcoin, *The Effects of Cryptocurrencies on the Gambling Industry*, GLOBALCOIN REPORT (July 10, 2018), <https://globalcoinreport.com/effects-crypto-currencies-gambling-industry/>.

⁹ See Lagarde, *supra* note 7.

¹⁰ See Sophie Bearman, *As Bitcoin’s Prices Plunges, Skeptics Say the Cryptocurrency Has No Value. Here’s One Argument for Why They’re Wrong*, CNBC (Jan. 17, 2018, 3:44 PM), <https://www.cnbc.com/2018/01/16/skeptics-say-bitcoin-has-no-value-heres-why-theyre-wrong.html>.

¹¹ Masha Borak, *Blockchain Buzzwords, Changes, and Challenges: EmTech China Blockchain Panel*, TECHNODE (Jan. 31, 2018), <https://technode.com/2018/01/31/emtech-china-blockchain-buzzwords/>; Mattha Busby, *Blockchain is this Year’s Buzzword- but Can It Outlive the Hype?*, THE GUARDIAN (Jan. 30, 2018, 3:00 PM), <https://www.theguardian.com/technology/2018/jan/30/blockchain-buzzword-hype-open-source-ledger-bitcoin>.

¹² Steve Lubka, *Why Blockchain Will Enable a Virtual Reality Renaissance*, MEDIUM - ALTCOIN MAG. (Oct. 21, 2018), <https://medium.com/altcoin-magazine/why-blockchain-will-enable-a-virtual-reality-renaissance-23f382d0d668>. “It is important to recognize that without Blockchain, we lack any way to truly issue independent digital assets and that independent digital assets will be an extremely important addition to another emerging technology - Virtual Reality.” *Id.*

well as a lack of uniform federal regulatory bodies with clear enforcement and investigative authority.¹³ However, this is an opportunity for Nevada to be a key player at the forefront of these challenges, just as Nevada has historically been a leader in gaming and innovation.¹⁴ Even though Nevada views itself as a blockchain technology-friendly state, the Nevada Gaming Control Board does not have rules on cryptocurrency.¹⁵

The changing gaming trends require the Nevada Gaming Control Board to strongly consider a role for blockchain technology first, and then see how cryptocurrency or even internal virtual currencies should be incorporated. The United States Supreme Court struck down the Professional and Amateur Sports Protection Act (PASPA), which opened the door for states to regulate their own sports betting.¹⁶ Esports betting is also one of the many areas where blockchain technology and digital currencies can play a larger role.¹⁷ Esports represents great economic potential for Nevada and many other states recognize this opportunity.¹⁸

This note will provide the Nevada Gaming Control Board with recommended regulations that embrace cryptocurrency and distributed ledger technology (DTL) technologies associated with the gaming industry.¹⁹ It will also provide a suggested action plan to prepare for what technological changes may come. While these recommendations are building blocks, a solid foundation is necessary to start creating a technology-forward legal framework. Three questions drive this analysis: (1) What market trends in gaming drive cryptocurrency? (2) How are other countries regulating cryptocurrencies for

¹³ See Aaron Hankin, *Is the Piecemeal Approach to Crypto Oversight Creating Regulatory Arbitrage*, MARKETWATCH (Sept. 20, 2018, 5:56 PM), <https://www.marketwatch.com/story/is-the-piecemeal-approach-to-crypto-oversight-creating-regulatory-arbitrage-2018-09-20>.

¹⁴ Ella McDonald, *Nevada Casinos Begin to Embrace Bitcoin as a Payment Method*, LEGAL GAMBLING & L. (Mar. 27, 2018), <https://www.legalgamblingandthelaw.com/news/nevada-casinos-begin-to-embrace-bitcoin-as-a-payment-method/>.

¹⁵ Christopher Owens, *What Major Barriers Do Casinos Have When Trying to Adopt Bitcoin*, BITNEWS TODAY (Mar. 15, 2019, 4:37 PM), <https://bitnewstoday.com/news/what-major-barriers-do-casinos-have-when-trying-to-adopt-bitcoin/>.

¹⁶ A.J. Perez, *What It Means: Supreme Court Strikes Down PASPA Law that Limited Sports Betting*, USA TODAY (May 14, 2018, 3:23 PM), <https://www.usatoday.com/story/sports/2018/05/14/supreme-court-sports-betting-paspa-law-new-jersey/440710002/>.

¹⁷ See Seamus Byrne, *Blockchain Decrypted: Explaining the Technology's Impact on Esports*, ESPORTS OBSERVER (Feb. 21, 2019), <https://esportsobserver.com/cryptocurrency-blockchain-esports/>.

¹⁸ See *id.*

¹⁹ This student note intends to explore the Nevada Gaming Control Board's possible regulatory responses to ongoing gaming trends so that the Nevada Gaming Control Board can properly prepare by creating relevant regulations in a timely manner. It is not intended to delve into the complexities of United States finance law. It is also not intended to contemplate or analyze how the various U.S. federal regulatory bodies can best regulate cryptocurrency.

their gaming industry? (3) What regulations best anticipate new technologies and how can the Nevada Gaming Control Board apply such regulations to incorporate blockchain technology/cryptocurrency?

Section I will define cryptocurrency and blockchain technology. It will discuss question one and explore the trends where cryptocurrency has excelled and continues to impact the gaming industry. Section II will focus on particular countries in the international gaming community: Japan, Macau, and Malta. This section will discuss each country's attempt to regulate cryptocurrency and what regulatory schemes they have considered and implemented. It will explore question two by parsing out the various approaches used by more established and newer gaming jurisdictions. Section III will discuss question three and offer the Nevada Gaming Control Board regulation recommendations that foster blockchain technology innovation and also provide a friendlier environment for digital currencies. It will also discuss the policy behind these recommendations and why planning the pace of regulation is just as important as preparing regulations with a feasible action plan.

I. WHAT MARKET TRENDS IN GAMING DRIVE CRYPTOCURRENCY?

A. *What is Cryptocurrency?*

Cryptocurrency is a digital currency that operates without a centralized bank. Instead of the centralized banking, hub and spoke model that exists today, virtual currencies are borderless, anonymous, have components, and lack the hefty regulations that govern central banks.²⁰ “[V]irtual currencies are a digital representation of value that may function as a medium of exchange, a unit of account, []or a store of value. . . run on a decentralized peer-to-peer network of computers” that relies on a blockchain.²¹ It allows for “[e]very peer in the network. . . to have a list with all transactions to check if future transactions are valid or an attempt to double spend.”²² A transaction requires a signature through a private key.²³ Then comes confirmation of that transaction, which differentiates cryptocurrency from other financial transactions.²⁴ Miners

²⁰ *Cryptocurrency Online Gambling*, WORLD CASINO INDEX, <https://www.worldcasinoindex.com/cryptocurrency/> (last visited Oct. 11, 2019).

²¹ J. Christopher Giancarlo, Chairman of the Commodity Futures Trading Commission, Testimony before the Senate Banking Committee (Feb. 6, 2018), <https://cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo37>.

²² Ameer Rosic, *What is Cryptocurrency [Everything You Need to Know!]*, BLOCKGEEKS (Sept. 13, 2018), <https://blockgeeks.com/guides/what-is-cryptocurrency/>.

²³ See Arpan Srivastava, *Public Key Cryptography and Digital Signatures*, MEDIUM (Nov. 10, 2018), <https://medium.com/coinmonks/public-key-cryptography-and-digital-signatures-6d81a06c15c4>.

²⁴ *Id.*

confirm transactions by authenticating the information.²⁵ This is called proof of work.²⁶ When miners confirm these transactions, “every node has to add it to its database [and therefore] [i]t . . . become[s] part of the blockchain.”²⁷ What makes cryptocurrency appealing is that the transactional process is irreversible, anonymous, and secure.²⁸ It has no gatekeepers, works on a global scale, and the transaction is quick.²⁹

Unlike the American dollar, cryptocurrency is not backed by gold or by a central government.³⁰ Computers generate a limited supply.³¹ A potential cryptocurrency buyer may choose to buy cryptocurrency with fiat or set up an exchange to trade.³² Cryptocurrency is volatile because it has a small market cap meaning that its liquidity is low.³³ Furthermore, its community is small compared to traditional economic markets.³⁴ When a person decides to purchase cryptocurrency, there are various options available. From Bitcoin (known as the gold standard of cryptocurrency) to Ethereum and Ripple, there are many types of currencies to choose from.³⁵ Each cryptocurrency has its own unique features and values as well, so for a first-time buyer, research and timing are important.³⁶

Cryptocurrency remains a nascent market vulnerable to high volatility and fraud on both the buying and selling ends.³⁷ These issues reveal hesitancy in the gaming industry; however, these issues exist with fiat money as well.³⁸ A decentralized ledger, anonymity, fraud protection, and lower transaction fees make cryptocurrency appealing for gaming, but the anonymity component presents a challenge to money laundering regulations because the knowing

²⁵ Forrest Stroud, *Cryptocurrency Mining*, WEBOPEDIA, <https://www.webopedia.com/TERM/C/cryptocurrency-mining.html> (last visited Mar. 29, 2019).

²⁶ Rasic, *supra* note 22.

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ Chrisjan Pauw, *How Cryptocurrency Price Work, Explained*, COINTELEGRAPH (July 24, 2018), <https://cointelegraph.com/explained/how-cryptocurrency-prices-work-explained>.

³¹ *Id.*

³² Cherry Reynard, *Is It Better to Buy or Trade Cryptocurrencies*, TELEGRAPH (May 25, 2018, 3:15 PM), <https://www.telegraph.co.uk/technology/digital-money/buying-vs-trading-cryptocurrency/>.

³³ See *Understanding a Cryptocurrency's Market Cap*, COINIST (last visited Mar. 31, 2019), <https://www.coinist.io/cryptocurrency-market-cap/>.

³⁴ Pauw, *supra* note 30.

³⁵ Jeff Desjardins, *Comparing Bitcoin, Ethereum, and Other Cryptos*, VISUAL CAPITALIST (Sept. 13, 2017), <http://www.visualcapitalist.com/comparing-bitcoin-ethereum-cryptos/>.

³⁶ *Id.*

³⁷ Pauw, *supra* note 30; See also Gareth Jenkinson, *Unpacking the 5 Biggest Cryptocurrency Scams*, COINTELEGRAPH (Apr. 18, 2018), <https://cointelegraph.com/news/unpacking-the-5-biggest-cryptocurrency-scams>.

³⁸ *Id.*

user's identity is vital to track the money source.³⁹

B. What is Blockchain Technology?

Blockchain is a unique digital ledger that connects to a vast network where a single entity cannot control it, and there is no single point of failure.⁴⁰ Simply put, blockchain is “a public record of transactions” where the “chain of linked transactions. . .reference [to the transaction] before. . .ordering them.”⁴¹ Nodes make up the network where “every node is an administrator of the blockchain.”⁴² When a transaction occurs, that transaction gets broadcasted to the network.⁴³ This decentralized network eliminates hacking risks and data breaches that come with centralized methods.⁴⁴

Blockchain technology is what powers virtual currencies.⁴⁵ It is also the kind of technology that the financial world takes seriously.⁴⁶ Blockchain and smart contracts are one of the many benefits the financial industry is exploring and adopting.⁴⁷ This naturally requires the legal world's involvement.⁴⁸ Blockchain has a multi-industry-wide impact⁴⁹ Adapting regulations for this influential technology is not only necessary, but also absolutely critical for the gaming industry and its future growth.

C. Gaming Trends

The new generation of gamers are currently re-shaping the gaming industry.⁵⁰ Young people and their preferences continue to mold the future of

³⁹ Owens, *supra* note 15.

⁴⁰ Rosic, *supra* note 22.

⁴¹ Jonathan Paul Wood, *What is Blockchain: Explained for Beginners*, MEDIUM - BLOCKCHAIN EDUCATION NETWORK (Oct. 14, 2017), <https://medium.com/block-chain-education-network/what-is-blockchain-explained-for-beginners-5e747cea271>.

⁴² Loveneesh Bansal, *Blockchain: A New Type of Internet*, EQUINIX, (Oct. 5, 2017), <https://blog.equinix.com/blog/2017/10/05/blockchain-a-new-type-of-internet/>.

⁴³ Rosic, *supra* note 22.

⁴⁴ *See id.*

⁴⁵ *See generally* World Casino Index, *supra* note 20.

⁴⁶ *See* Lin William Cong & Zhiguo He, *Blockchain, Smart Contracts, and Information*, VOX CEPR POLICY PORTAL (July 5, 2018), <https://voxeu.org/article/blockchain-smart-contracts-and-information>.

⁴⁷ *Id.*

⁴⁸ *See id.*

⁴⁹ *See* Abhimanyu Krishnan, *24 Industries That Blockchain Will Radically Transform*, INVEST IN BLOCKCHAIN (Feb. 27, 2018), <https://www.investinblockchain.com/blockchain-transform-industries/>.

⁵⁰ *See* Michael K. Spencer, *The Rise of Cryptocurrencies in Gaming*, MEDIUM (Aug. 5, 2018), <https://medium.com/@bitgamesocial/the-rise-of-cryptocurrencies->

technology, and the rise of virtual currency in gaming is a result of that shift.⁵¹ Increased popularity for cryptocurrency and online gambling demonstrates that the gambling world is already adjusting its sails.⁵² Pop culture has a strong influence on gaming design that incorporates themes based on music or television with improved graphics for video and skills-based slots.⁵³ These new customer experiences, powered by algorithms, create a unique experience for the gambler.⁵⁴ Millennials (especially within the 18–35 age range) prefer to gamble on their smartphones.⁵⁵ Virtual reality and mobile casinos cater to millennial preferences with immersive experiences.⁵⁶ Moreover, younger generations distrust banks and the financial system.⁵⁷ Blockchain technology offers more security in comparison to traditional security methods.⁵⁸ According to a survey from MMGY Global, a travel marketing firm, around forty-eight percent of millennials prefer cryptocurrency over fiat.⁵⁹ When millennials visit casinos, it is estimated that they come with less than \$100 cash.⁶⁰ Rather than spend on gambling, they spend on entertainment, social activities, and restaurants.⁶¹ In comparison, the older generations spend their money on the casino floor.⁶² In general, older generations make up the majority of land-based gambling, while millennials have turned to online gambling- where they can still virtually play the slot machines using payment methods that include cryptocurrency.⁶³

The casino floors of tomorrow will look different from the casino floors of today because of these gaming trends.⁶⁴ Unlike the traditional slot machines,

in-gaming-495c19460061.

⁵¹ *Id.*

⁵² Coinspeaker, *supra* note 3.

⁵³ James Green, *2019 Trends to Expect to See in Online Slot Gambling*, BALTIMORE POST-EXAMINER (Jan. 2, 2019), <https://baltimorepostexaminer.com/2019-trends-to-expect-to-see-in-online-slot-gambling/2019/01/02>.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ Kate Rooney, *After the Crisis, a New Generation Puts Its Trust in Technology Over Traditional Banks*, CNBC (Oct. 10, 2018, 11:56 PM), <https://www.cnn.com/2018/09/14/a-new-generation-puts-its-trust-in-tech-over-traditional-banks.html>.

⁵⁸ *Id.*

⁵⁹ Jonathan Kim, *Research: Nearly Half of Millennials Prefer Crypto Over Fiat*, CRYPTOSLATE (Sept. 7, 2018, 10:00 AM), <https://cryptoslate.com/research-nearly-half-of-millennials-prefer-crypto-over-fiat>

⁶⁰ Beckett, *supra* note 5.

⁶¹ *Id.*

⁶² Sarah Feldberg, *Value Bet: Las Vegas Evolves to Delight Millennials*, TRAVEL WKLY. (Sept. 26, 2018), <https://www.travelweekly.com/Travel-News/Hotel-News/Future-proofing-Las-Vegas>.

⁶³ See Chris Evans, *Why Land-Based Casinos Should Bring in Bitcoin*, BITCOIN GAMBLING GUIDE (Mar. 21, 2016), <https://www.bitcoingg.com/land-based-casinos-bring-bitcoin/>.

⁶⁴ Kevin Horridge, *The Casino Floor of Tomorrow: Attracting Millennials to*

gambling will be more interactive, much like online video games.⁶⁵ Eric Meyerhofer, the CEO of a Gamblit Gaming, believes the casino floor will look like “a modern-day arcade for adults.”⁶⁶ This vision also includes an emphasis on gaming in a more social setting versus sitting alone at a slot machine.⁶⁷ Since the Supreme Court declared PASPA unconstitutional, states that decide to legalize sports gambling will likely cater to these trends.⁶⁸ Now that as many as twenty states will be legalizing sports betting, “[this] paves the way for cryptocurrency gambling. . .[and] is sure to see solid global growth in the coming years.”⁶⁹

1. Esports

As esports continues to expand, grow, and solidify its relationship with fans, the industry has taken competitive video gaming to the next level.⁷⁰ The changing gaming culture is best highlighted by the production value associated with the Esports experience.⁷¹ The Arena of Valor’s Esports playoffs production uses lighting, sound, and unique staging to enhance the entertainment value and sophistication of the event for its participants.⁷² The spectacle involves a commentary team on the sidelines and live streaming.⁷³ This is a “specific market segment that has seen cryptocurrencies as a special added value for their growth.”⁷⁴ According to NewZoo’s annual report, North America alone will generate thirty-seven percent (\$409 million) of the global Esports revenue.⁷⁵ Because “[c]ryptocurrency and eSports are moving closer to

Casinos, CASINO.ORG (Aug. 31, 2017), <https://www.casino.org/blog/the-casino-floor-of-tomorrow-attracting-millennials-to-casinos/>.

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ Beckett, *supra* note 5.

⁶⁸ See John Gaudiosi, *How Cryptocurrency is Impacting Traditional Sports & Esports*, CONSUMER TECH. ASS’N (Aug. 9, 2018), <https://www.cta.tech/News/i3/Articles/2018/July-August/How-Cryptocurrency-is-Impacting-Traditional-Sports.aspx>.

⁶⁹ *Id.*

⁷⁰ Brian Crecente, *Tencent: Mobile Esports is the Next Big Thing*, VARIETY (June 25, 2018, 12:00 PM), <https://variety.com/2018/gaming/features/tencent-mobile-esports-arena-of-valor-1202856396/>.

⁷¹ See AJ Willingham, *What is eSports? A Look at an Explosive Billion-Dollar Industry*, CNN (Aug. 27, 2018, 2:18 PM), <https://www.cnn.com/2018/08/27/us/esports-what-is-video-game-professional-league-madden-trnd/index.html>.

⁷² Arena of Valor, *Arena of Valor World Cup Finals 2018 Day 1*, YOUTUBE (July 27, 2018), https://www.youtube.com/watch?v=sr3ao52_c68 (specifically at 40:05-44:10).

⁷³ Crecente, *supra* note 70.

⁷⁴ Coinspeaker, *supra* note 3.

⁷⁵ Global Esports Market Report, *Key Numbers: 2017-2022 Esports Revenue Growth*, NEWZOO (last visited Mar. 25, 2019), <https://newzoo.com/key-numbers/>.

each other. . . as the two mature. . . [they will] continu[e] to disrupt the status quo of their two industries.”⁷⁶ With the rise of technology, Esports and cryptocurrency partnerships can enhance the gaming experience.

Unikrn, an esports-betting platform, created its own cryptocurrency called Unikoin.⁷⁷ Users can purchase Unikoins to enter raffles and win prizes.⁷⁸ These Unikoins cannot be exchanged for any currency.⁷⁹ This method effectively worked around the U.S.’s former ban on sports betting.⁸⁰ But, in 2018, Unikrn faced a class action lawsuit for allegedly violating U.S. securities law.⁸¹ The lead plaintiff, John Hastings, participated in Unikrn’s Initial Coin Offering (ICO) and claimed that Unikrn led investors to believe that the “tokens” would eventually be “worth more than the virtual currencies invested.”⁸² This is an example of why cryptocurrency, blockchain technology, and U.S. finance laws deserve cohesive, regulatory action in order to catch up with the European and Asian regulatory advancements.

Cryptocurrency in esports offers communication advantages.⁸³ It prevents communication errors by processing thousands of bets in seconds via blockchain technology.⁸⁴ Additionally, players do not participate necessarily for financial gain but rather for the “gamer-centered” prizes.⁸⁵ Trading platforms—for clothing skins and weapons—are one of the many ways cryptocurrency and gaming interact.⁸⁶ To appreciate the ongoing technological and cultural shifts, it is vital to understand that cryptocurrency is not limited to financial investment; it also builds better gaming communities.⁸⁷

2. Daily Fantasy Sports

⁷⁶ Chris Morris, *What Cryptocurrency Could Mean For eSports*, TWICE (Jan. 14, 2019), <https://www.twice.com/product/ces-2019-what-cryptocurrency-could-mean-esports>.

⁷⁷ Coinspeaker, *supra* note 3

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ Wolfie Zhao, *Mark Cuban-Backed Unikrn ICO Hit by Class Action Lawsuit*, COINDESK (Aug. 17, 2018, 7:13 AM), <https://www.coindesk.com/mark-cuban-backed-unikrn-ico-hit-by-class-action-lawsuit>.

⁸² *Id.*

⁸³ Dean Takahashi, *Unikrn Gets Gambling License for Crypto-Based Betting on Esports and Games*, VENTURE BEAT (Oct. 23, 2018, 6:01 AM), <https://venturebeat.com/2018/10/23/unikrn-gets-gambling-license-for-crypto-based-betting-on-esports-and-games/>.

⁸⁴ *Id.* (In reference that Unikrn can process over “9,000 bets per second.”)

⁸⁵ Morris, *supra* note 76.

⁸⁶ William M. Peaster, *Beginner’s Guide to Gaming and eSports Cryptocurrencies*, BLOCKONOMI (June 6, 2018), <https://blockonomi.com/gaming-esports-cryptocurrencies/>. This refers specifically to WAX for first-person shooter games.

⁸⁷ *See id.*

Millions of Americans play Daily Fantasy Sports. Fantasy sports companies are starting to use blockchain so that their players can effectively assess their skills and connect within the network using various devices.⁸⁸ Companies are also “beginning to combine blockchain technology with fantasy sports leagues.”⁸⁹ For example, Protoblock has its own currency called FantasyBits.⁹⁰ Additionally, the London Football Exchange (LFE) hopes to use cryptocurrency to democratize ownership and offer fans the option to use tokens for tours and discounts on merchandise.⁹¹ The LFE has also considered allowing players to use tokens to purchase game tickets and eliminate the transactional middleman.⁹² Even though there is no betting involved, cryptocurrency still has a place for the gaming world where it facilitates exchanges, improves security, and therefore, keeps fans engaged.⁹³ This is a valuable advantage to note since fantasy sports include a vast array of games.⁹⁴

3. Online Casinos and Consumers

If a player wants to gamble using cryptocurrency in an online casino, thorough research is important. Some of the features to look for in reliable cryptocurrency casinos are proper licensing and mobile compatibility.⁹⁵ It is prudent to find a casino that is licensed, such as those within European jurisdictions.⁹⁶ There are cryptocurrency-only sites and more established ones that accept cryptocurrency as one of many payment methods.⁹⁷ For a consumer who is not as serious about playing with cryptocurrency, an online casino that is well established and has a good reputation is the safest bet.⁹⁸ Bitcoin and Ethereum are two of the most popular cryptocurrencies used in online casinos.⁹⁹ Even with Bitcoin’s dramatic value drop, this drop does not

⁸⁸ Gaudiosi, *supra* note 68.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *See id.*

⁹⁵ *See Best Casinos Supporting Cryptocurrencies 2019*, CASINO MOBSTERS, <https://crypto.casinomobsters.com/casinos/> (last visited Aug. 30, 2019).

⁹⁶ *See Online Casinos – Where Are They Located and Licensed*, CASINOMANUAL, <https://www.casinomanual.co.uk/beginners-guide-to-online-casinos/online-casinos-where-are-they-located-and-licensed/> (last visited Aug. 30, 2019).

⁹⁷ *See generally Top Gambling Sites Accepting Cryptocurrency in 2019*, GAMBLINGSITES.COM, <https://www.gamblingsites.com/cryptocurrency/sites/> (last visited Aug. 30, 2019).

⁹⁸ *Id.*

⁹⁹ Biraajmaan Tamuly, *Will Cryptocurrency Take Over Online Casino Industry in 2019*, AMBCRYPTO (Jan. 24, 2019), <https://ambcrypto.com/will-cryptocurrency->

necessarily mean that cryptocurrencies will go away.¹⁰⁰ Players value the advantages of cryptocurrency that increase efficiency, such as no conversion fees.¹⁰¹ This indicates that cryptocurrency will continue to shape and influence the online casino gambling world.

The level of consumer caution required for safe online casino playing highlights how cryptocurrency and security remain a high priority for players.¹⁰² In an attempt to address security concerns, cryptocurrency proponents in online casinos argue that blockchain technology is the best solution.¹⁰³ Daily transactions between operators and players can be in the hundreds of thousands, which usually takes several days to complete.¹⁰⁴ Blockchain technology removes third parties from the transactional equation, allowing the operator and player to transact directly.¹⁰⁵

Because of the security that blockchain offers, cryptocurrency's popularity in online casinos can open doors for other realms of gaming to embrace digital currency expansion.¹⁰⁶ Land-based casinos have contemplated merging land-based components with online gaming as a way to change marketing strategies, which would require casinos to incorporate cryptocurrency.¹⁰⁷ Indeed, integrating online and land-based gambling would be a game changer for land-based casinos. Casinos would give their online patrons a certain amount of transferrable points to play in the land-based casino.¹⁰⁸ Casinos would be able to provide the virtual perks of the online casino and the in-person gambling experience, thereby exposing patrons to other forms of gaming.¹⁰⁹

Whether or not land-based casinos can actually bring millennial players from an online casino to a real one depends on the other components that millennial players value, such as dining options, entertainment, and socialization.¹¹⁰ It also depends on how land-based casinos would be able to manage digital wallets in order to know the identity of the player and the money source. While these financial requirements vary from jurisdiction to jurisdiction, the idea of merging these two worlds requires casinos to embrace

take-over-online-casino-industry-in-2019/.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² See Press Release, Coingape, Is There a Future for Cryptocurrencies in the Online Casino Industry (Apr. 17, 2019), <https://coingape.com/is-there-a-future-for-cryptocurrencies-in-the-online-casino-industry/>.

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ See Clare Fitzgerald, *Engaged Nation Links Land-Based and Online Social Gambling*, CASINO CITY TIMES (May 26, 2017), <http://www.casinocitytimes.com/article/engaged-nation-links-land-based-and-online-social-gaming-65856>.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ Beckett, *supra* note 5.

digital currencies to a certain degree.¹¹¹ Even though the adoption should most likely be cautious, and perhaps minimal, creating the availability to use online digital currency at a land-based casino can be the key to exposing the millennial player to other games and forms of entertainment.¹¹² This exposure will eventually lead to a shift away from traditional gambling where the gaming industry offers a variety of alternative experiences that appeals to the younger generations.¹¹³

4. *Virtual Reality*

Virtual reality brings people from all over the world onto a shared, virtual stage to share an experience together.¹¹⁴ As a business model, “digital currency makes sense in virtual worlds[.]”¹¹⁵ Alexandre Tomic, co-founder and CEO of ALEA shared his thoughts on whether virtual reality and gaming will gain traction.¹¹⁶ Tomic responded, “definitely yes, we are doing entertainment. . .it’s immersive. . .it’s not even a question. . .in 2020 or 2022, all the internet is going to be VR.”¹¹⁷ These plans indicate that there is a place for cryptocurrency in an augmented virtual reality world. While cryptocurrency’s instability can be off-putting to many, there are ongoing projects that incorporate digital currency as a way for players to collect prizes. For example, MINAR is a free-to-play gaming application that offers Minar Coins, Minar Points, and Lucky Draw Tickets, ranking the three types of coins players can use in order to redeem different prizes.¹¹⁸ Moreover, MINAR uses blockchain technology that tracks data users and their behaviors including these digital transactions to learn about what their players need.¹¹⁹

¹¹¹ See generally *Jurisdictional Reports*, GAMBLING COMPLIANCE, <https://gamb lingcompliance.com/content/jurisdictional-reports> (last visited Sept. 13, 2019).

¹¹² Beckett, *supra* note 5.

¹¹³ *Id.*

¹¹⁴ Thomas McCoy, *Is Virtual Reality the Future of Casinos?*, USA ONLINE CASINO (Oct. 25, 2017), <https://www.usaonlinecasino.com/blog/is-virtual-reality-the-future-of-casinos/>.

¹¹⁵ Brian Armstrong, *Digital Currency Could Be Widely Used In VR*, MEDIUM (Dec. 6, 2018), <https://medium.com/@barmstrong/digital-currency-could-be-widely-used-in-vr-a90c475ec112>.

¹¹⁶ Dukascopy TV, *Gambling with Virtual Reality*, YOUTUBE (Jan. 19, 2018), https://www.youtube.com/watch?v=_P3Y071yAV8 (ALEA is an operator that created the world’s first real money VR casino, SlotsMillion.).

¹¹⁷ *Id.* at 0:43-0:56.

¹¹⁸ Gerald Fenech, *WIR Distributes Thousands of Virtual Coins at World Economic Forum 2019 in Davos*, FORBES (Jan. 27, 2019, 10:00 AM), <https://www.forbes.com/sites/geraldfenech/2019/01/27/wir-distributes-thousands-of-virtual-coins-at-world-economic-forum-2019-in-davos/#745078d475d8>.

¹¹⁹ See *id.*

Virtual reality could potentially alter the look of the casino floor.¹²⁰ Paul Steelman, an expert in entertainment architecture said, “[w]e’re very anxious to see how the digital revolution. . .affects our overall business as we. . .go forward[.]”¹²¹ VR lounges in casinos would allow participants to wear headsets and play games.¹²² They would also be able to learn about how to play games that the casino floor offers, explained through a virtual reality experience.¹²³ MGM Resorts uses virtual reality as a marketing tool.¹²⁴ The MGM’s MyVegas social casino gives players the ability to visit MGM’s multiple Las Vegas strip properties.¹²⁵ Additionally, Caesar’s introduced its first virtual reality lounge at Alto Bar where players get a 360 degree immersive experience.¹²⁶

Blockchain and virtual reality show economic promise if virtual reality can develop a single layer that connects to virtual spaces and physical locations.¹²⁷ Virtual reality can be furthered even more with the idea of tangible and individual assets.¹²⁸ Virtual assets such as virtual clothing and buildings could be sold using virtual currency.¹²⁹ This requires blockchain technology so that participants have “the ability to create secure digital assets.¹³⁰ Ownership rather than a license would allow virtual reality to create a “parallel economic system of goods, property, and jobs.”¹³¹ Even though these visions may not be right around the corner, they are feasible.¹³²

Another example of blockchain technology working in tandem with virtual reality is the project Decentraland.¹³³ Decentraland is a virtual reality platform on the Ethereum blockchain.¹³⁴ It allows users to explore a virtual land with

¹²⁰ See Kaleb Roedel, *VR, Skill-Based Games Hitting Casino Floors in Nevada and Beyond — but Are Gamblers Asking For Them?*, NORTHERN NEV. BUS. VIEW (Dec. 26, 2018), <https://www.nnbusinessview.com/news/vr-skill-based-games-hitting-casino-floors-in-nevada-and-beyond-but-are-gamblers-asking-for-them/>.

¹²¹ *The Oral History of Paul Steelman*, 9 UNLV GAMING L.J. 137, 144 (2019).

¹²² McCoy, *supra* note 114.

¹²³ *Id.*

¹²⁴ Sarah Blackburn, *Gambling on Virtual Reality: The Online Casinos of the Future*, VENTUREBEAT (Nov. 13, 2015, 7:05 AM), <https://venturebeat.com/2015/11/13/gambling-on-virtual-reality-the-online-casinos-of-the-future/>.

¹²⁵ *Id.*

¹²⁶ Chelsea Ryder, *Alto Bar at Caesar’s Palace Introduces Las Vegas’ First Virtual Reality Lounge Featuring Oculus Rift*, L.V. BLOG (Dec. 28, 2016), <http://blog.caesars.com/las-vegas/news/alto-bar-at-caesars-palace-introduces-las-vegas-first-virtual-reality-lounge-featuring-oculus-rift/>.

¹²⁷ Lubka, *supra* note 12.

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ Jon Wood, *Blockchain and AR/VR – A Match Made in Virtual Heaven*, MEDIUM - TRIVIAL.CO (Apr. 5, 2018), <https://medium.com/trivial-co/blockchain-and-ar-vr-a-match-made-in-virtual-heaven-26e54782be56>.

¹³⁴ *Id.*

options to purchase land through the Ethereum blockchain “while smart contracts track all modifications.”¹³⁵ Some future contemplations in the project include the possibility of building a casino where people pay to access and buy goods.¹³⁶ As a virtual casino builder, the owner may lease a “gambling game functionality from a developer. . .and [the owner] can take any of the house winnings. . .”¹³⁷ While many of these projects are in their infancy, the visions demonstrate that virtual reality can potentially change e-commerce and eventually reach a tipping point in gaming.¹³⁸

II.HOW ARE OTHER COUNTRIES REGULATING CRYPTOCURRENCY?

A. Malta, “Blockchain Island”

The ever-growing online gaming industry highlights the need for regulations that allow technological innovation. Corporations are moving to Malta because Malta provides a cryptocurrency friendly environment.¹³⁹ Three Maltese bills have helped facilitate a blockchain ecosystem regulatory framework: (1) the Malta Digital Innovation Authority Act (MDIA), (2) Virtual Financial Assets Act (VFSA), and (3) the Innovative Technology Arrangements and Service Act (ITASA).¹⁴⁰ Together, these three bills represent the “world’s first integrated framework for the regulation of government-sanctioned token offerings.”¹⁴¹

The Malta Gaming Authority (MGA) launched its first legislative Sandbox in April 2018.¹⁴² Because cryptocurrency and gaming regulations are just starting to develop, this strategic approach allowed the Maltese government to get feedback without restricting technology within the ecosystem.¹⁴³ One of the main Sandbox goals is to provide participants with safeguards that protected both investors and consumers via procedures that prevent money laundering and terrorism funding.¹⁴⁴ However, not everyone agrees with the path that the

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ Fenech, *supra* note 118.

¹³⁸ *See id.*

¹³⁹ Kheper, *Malta, Where Gaming Meets Blockchain*, MEDIUM (July 16, 2018), <https://medium.com/@kheper.token/malta-where-gaming-meets-blockchain-aa01e2ba3fc5>.

¹⁴⁰ Jay Derenthal, *Understanding Malta’s Leadership on Security Token Regulation*, NASDAQ - BITCOIN MAG. (Nov. 7, 2018, 8:40 AM), <https://www.nasdaq.com/article/understanding-maltas-leadership-on-security-token-regulation-cm1051452>.

¹⁴¹ *Id.*

¹⁴² Kheper, *supra* note 139.

¹⁴³ *Id.*

¹⁴⁴ Stephen O’Neal, *Malta’s Regulatory Framework Attracts Crypto Players, but Int’l Watchdogs and Local Opposition are Skeptical*, COINTELEGRAPH (Feb. 2,

Maltese government continues to take.¹⁴⁵ The Nationalist Party, which is the local opposition, expressed concern about the Maltese government's ability to attract sound investment from credible companies.¹⁴⁶ The International Monetary Fund (IMF) also expressed concern about how Malta's cryptocurrency regulations pose a significant risk of money laundering and illegal criminal activity.¹⁴⁷ While these concerns show there is plenty of work ahead, these discussions highlight common concerns in the gaming industry throughout the world.

1. *Sandbox Test in the Gaming Industry*¹⁴⁸

By being at the forefront of distributed ledger technology (DLT), the MGA hopes to continue expanding business opportunities without stifling technological developments.¹⁴⁹ The MGA intends to formulate a sound approach to DLT in order to protect consumers and prevent money laundering.¹⁵⁰ Moreover, the MGA decided to focus on a sandbox testing environment and invite public feedback.¹⁵¹ A Sandbox Test will allow Malta to test "blockchain assets in a controlled environment."¹⁵² This will allow regulators to analyze what potential risks occur during this process. The MGA's first two phases started in January 2019 and should last around ten months.¹⁵³

2019), <https://cointelegraph.com/news/maltas-regulatory-framework-has-attracted-crypto-players-but-international-watchdogs-and-local-opposition-are-skeptical>.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ See *Sandbox: Technology Dictionary*, TECHNOPEDIA (last visited Mar. 30, 2019), <https://www.techopedia.com/definition/27681/sandbox-software-development> ("A Sandbox test is a type of software testing environment that enables the isolated execution of software or programs for independent evaluation, monitoring, or testing.").

¹⁴⁹ Malta Gaming Authority, *The MGA Publishes Guidelines on its Sandbox Framework for the Acceptance of Virtual Financial Assets and the Use of Distributed Ledger Technology Within the Gaming Industry at the Delta Summit 2018*, MALTA GAMING AUTHORITY - NEWS (Oct. 4, 2018), <https://www.mga.org.mt/the-mga-publishes-guidelines-on-its-sandbox-framework-for-the-acceptance-of-virtual-financial-assets-and-the-use-of-distributed-ledger-technology-within-the-gaming-industry-at-the-delta-summit-2018/>.

¹⁵⁰ See *id.*

¹⁵¹ *Id.*

¹⁵² *MGA Launches Sandbox Test of Cryptocurrency Regulations*, IGAMING BUS. (Jan. 4, 2019), <https://www.igamingbusiness.com/news/mga-launches-sandbox-test-cryptocurrency-regulations>.

¹⁵³ Malta Gaming Authority, *The MGA Implements First Phase of its Sandbox Framework for the Acceptance of Virtual Financial Assets and the Use of Distributed Ledger Technology Within the Gaming Industry*, MALTA GAMING AUTHORITY (Jan. 3, 2019), <https://www.mga.org.mt/the-mga-implements-first->

To participate in the Sandbox Framework, the applicant must hold a relevant license “without prejudice to any other regulatory requirements stemming from other applicable legislation[.]”¹⁵⁴ In order to further the licensing process, the Licensee Relationship Management System (LRMS) is a portal that facilitates easier participation and license management.¹⁵⁵ Participants use the LRMS to report virtual financial assets player liabilities along with failed return transactions.¹⁵⁶

The Sandbox Test also requires virtual wallets where “only wallets whose address is specifically tied to the individual player shall be admissible for use in the gaming ecosystem.”¹⁵⁷ There are different types of wallets available: hardware, software, and custodian wallets.¹⁵⁸ Virtual wallets that require identification are not unique requirements because that information is necessary to fight money-laundering.¹⁵⁹ The European Parliament’s Special Committee on Financial Crimes considered mandatory versus voluntary registrations and in its study, recommends policies requiring mandatory user registration instead of voluntary.¹⁶⁰

Financial instruments or electronic money can become a valid form of payment on a case by case basis according to the MGA’s approval per the distributed ledger technology criteria:¹⁶¹

When users sign-up to gaming websites with the intent to use virtual financial assets, only wallet addresses. . .tied to the individual will be permitted within the gaming ecosystem. Once the wallet has been recognized. . .the operator must

phase-of-its-sandbox-framework-for-the-acceptance-of-virtual-financial-assets-and-the-use-of-distributed-ledger-technology-within-the-gaming-industry/.

¹⁵⁴ *Id.*

¹⁵⁵ *MGA Implements First Phase of Sandbox Framework*, FOCUS GAMING NELLIS (Jan. 7, 2019), <https://focusgn.com/malta-implements-first-phase-sandbox-framework>

¹⁵⁶ *Id.*

¹⁵⁷ *Guidance on the Use of Distributed Ledger Technology and the Acceptance of Virtual Currencies through the Implementation of a Sandbox Environment*, at 10, MALTA GAMING AUTHORITY (Mar. 2018), <https://www.mga.org.mt/wp-content/uploads/MGA-Public-Consultation-Guidance-on-the-use-of-Distributed-Ledger-Technology-and-the-acceptance-of-Virtual-Currencies-through-the-implementation-of-a-Sandbox-Environment.pdf>.

¹⁵⁸ Robby Houben & Alexander Snyers, *Cryptocurrencies and Blockchain: Legal Context and Implications for Financial Crime, Money Laundering, and Tax Evasion*, at 27, EU PARLIAMENT: POLICY DEP’T FOR ECON., SCI., & QUALITY OF LIFE POLICIES (July 2018), <http://www.europarl.europa.eu/cmsdata/150761/TAX%20Study%20on%20cryptocurrencies%20and%20blockchain.pdf>.

¹⁵⁹ *See id.* at 53, 60–61.

¹⁶⁰ *Id.* at 14.

¹⁶¹ DD Consultus, *The Technicalities of the Malta Gaming Authority’s DLT Sandbox Framework*, DENITZA DIMITROVA CONSULTUS (Dec. 11, 2018), <https://ddconsultus.com/articles/80>.

verify the individual's details and their wallet. Once verification is complete, players receive their gaming funds. Withdrawals can only be performed to verified wallets, and if a pending transaction does not match the player's verified wallet address, funds will be returned to their point of origin or shall be frozen.¹⁶²

Moreover, the distributed ledger technologies used for gaming will be subject to audit and will include smart contracts, especially when smart contracts hold funds.¹⁶³ This Sandbox test is designed for the MGA to view potentially risky complications. Because of the controlled environment, the MGA will have a better idea of what virtual assets in a real-life gaming space will look like.¹⁶⁴

B. Japan

Japan is a top-player in digital gaming.¹⁶⁵ With over \$19.2 billion in revenue, it ranks third in the international gaming market.¹⁶⁶ Furthermore, seventy-seven percent of their gamers purchased in-game items or virtual goods.¹⁶⁷ These numbers demonstrate an obvious opportunity for blockchain technology because "ownership and liquidity of virtual items are the current problems" blockchain can solve.¹⁶⁸ While cryptocurrency is the economic mechanism, blockchain technology allows players to have ownership and "enables interoperable profiles of players and. . .virtual items."¹⁶⁹

Japan regulates cryptocurrency exchanges via the statutory authority of the Payment Service Act.¹⁷⁰ The act defines cryptocurrency as having a property value used "for the purchase. . .of goods. . .that is transferable via an electronic processing system. . ."¹⁷¹ It essentially recognized virtual currency as a method

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ Simon Deloit, *MGA Pushes Ahead with Cryptocurrency Sandbox Framework*, GAMBLING NEWS (Jan. 5, 2019), <https://www.gamblingnews.com/news/mga-pushes-ahead-with-cryptocurrency-sandbox-framework/>.

¹⁶⁵ Kyle Lu, *A Sneak Peek into the Blockchain Gaming Market in Japan: Way Ahead of the Others*, HACKER NOON (Mar. 25, 2019), <https://hackernoon.com/a-sneak-peek-into-the-blockchain-gaming-market-in-japan-way-ahead-of-the-others-3546afbbfd3d>.

¹⁶⁶ *Japan Games Market 2018*, NEWZOO - INSIGHTS (Aug. 1, 2018), <https://newzo.com/insights/infographics/japan-games-market-2018/>.

¹⁶⁷ *Id.*

¹⁶⁸ Kyle Lu, *supra* note 165.

¹⁶⁹ *Id.*

¹⁷⁰ Masahiko Ishida et al., *Japan Regulatory Update on Virtual Currency Business*, DLA PIPER (Dec. 29, 2017), <https://www.dlapiper.com/en/japan/insights/publications/2017/12/japan-regulatory-update-on-virtual-currency-business/>.

¹⁷¹ GLOBAL LEGAL RES. DIRECTORATE, REGULATION OF CRYPTOCURRENCY

of payment and added regulations for licenses to ensure reliable exchange operations.¹⁷² To be a cryptocurrency operator, businesses must register with the Japanese Finance Bureau, which has certain regulatory measures.¹⁷³ Separate accountants review the management of registered businesses.¹⁷⁴ Businesses must send the Financial Services Agency a report and the Agency has the authority to rescind the registration of cryptocurrency exchange should the business fail to comply with regulations.¹⁷⁵ Japan's financial regulations for cryptocurrency bolsters the gaming industry's ability to provide customers with this payment method.¹⁷⁶

Japanese gaming trends further demonstrate that digital technology drives multiple categories. Around twenty-six percent of the Japanese population views gaming online and of those viewers, eighty-four percent are esports viewers.¹⁷⁷ However, professional gambling in Japan was limited because of its restrictive gambling laws that categorized esports under local gambling laws that capped prize money at \$880.¹⁷⁸ This cap limited Japan's gambling possibilities.¹⁷⁹ However, a government licensing system resolved the issue.¹⁸⁰ The Japanese Esports Union is a governing body that issues licenses for esports professionals.¹⁸¹ Thanks to these recent Japanese regulation changes, a Hong Kong casino operator plans to build an esports stadium in Japan as part of an integrated resort.¹⁸² For the Japanese gaming tourism sector to boom, gaming investors will rely on fostering relationships with Chinese customers, as they are likely to be the main source of Japan's tourists.¹⁸³ Even though Japan has historically been a global gaming influencer, Japan is behind its regional

AROUND THE WORLD, LIBR. OF CONG., 111 (June 2018), <https://www.loc.gov/law/help/cryptocurrency/cryptocurrency-world-survey.pdf> [hereinafter *Regulation of Cryptocurrency Around the World*].

¹⁷² David Hamilton, *Japan & Crypto – Lessons in Blockchain Regulation*, COINCENTRAL (Aug. 8, 2018), <https://coincentral.com/japan-crypto-lessons-in-blockchain-regulation/>.

¹⁷³ *Regulation of Cryptocurrency Around the World*, *supra* note 171, at 111.

¹⁷⁴ *Regulation of Cryptocurrency Around the World*, *supra* note 171, at 111

¹⁷⁵ *Regulation of Cryptocurrency Around the World*, *supra* note 171, at 111–12

¹⁷⁶ See Hamilton, *supra* note 172.

¹⁷⁷ *Japan Games Market 2018*, *supra* note 166.

¹⁷⁸ Seamus Byrne, *Japan's Esports Market Sees Substantial Growth in 2018*, ESPORTS OBSERVER (Dec. 15, 2018), <https://esportsobserver.com/japan-esports-market/>.

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² Eri Sugiura, *Casino Company Melco Envisions Esports as Big Draw for Japan Resort*, NIKKEI ASIAN REV. (Oct. 15, 2018 5:59 PM), <https://asia.nikkei.com/Business/Business-trends/Casino-company-Melco-envisions-esports-as-big-draw-for-Japan-resort>.

¹⁸³ *Id.*

competitors in esports.¹⁸⁴ These strategic regulatory changes aim to help Japan catch up with the digital and technological trends of the gaming world.

C. Macau

In stark contrast, Macau's views on virtual currency exchange are adverse because of its risky nature.¹⁸⁵ Macau does not recognize virtual commodities as legal tender.¹⁸⁶ Because virtual commodities do not fall under this category, it is not under the supervision of the Monetary Authority of Macau (AMCM).¹⁸⁷ Moreover, the AMCM warns that virtual commodities pose money risks including money laundering.¹⁸⁸ There is "widespread reluctance by Macau officials to embrace innovation [which] will eventually limit the industry's capacity for growth[.]"¹⁸⁹

Jose Alvares, a Partner at Macau's CA Lawyers expressed concern for Macau's fear of innovation and stated, "The question for us is how do we merge the land-based player with the online player."¹⁹⁰ Leaders in the industry recognize that cryptocurrency is expanding beyond the online gambling world and will soon affect land-based casinos.¹⁹¹ This expansion is especially significant because land-based casinos can tap into the online gambling market and incentivize this market to enter the land-based casino world by offering cryptocurrency playing options.¹⁹²

Macau is known for its high rollers who bring in their millions to gamble. But when these high rollers play with millions, it can present transactional difficulties because it is expensive to move that money to privately funded rooms.¹⁹³ These rooms will charge around five to seven percent for their services.¹⁹⁴ When players gamble in the millions, five to seven percent is a

¹⁸⁴ Graham Ashton, *Japan's Three Esports Associations Merge into Single Entity*, ESPORTS OBSERVER (Feb. 1, 2018), <https://esportsobserver.com/japan-esports-union-announcement/>.

¹⁸⁵ *Regulation of Cryptocurrency Around the World*, *supra* note 171, at 113.

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ Ben Blaschke, *Fear of Innovation a Threat to Macau*, INSIDE ASIAN GAMING (Nov. 16, 2018, 7:21 AM), <https://www.asgam.com/index.php/2018/11/16/fear-of-innovation-a-threat-to-macau/>.

¹⁹⁰ *Id.*

¹⁹¹ *See id.*

¹⁹² *See id.*; *see also* Horridge, *supra* note 64.

¹⁹³ Kevin Anderton, *High Stakes International Gambling is About to Get its Own Cryptocurrency [Infographic]*, FORBES (Mar. 13, 2018, 4:46 PM), <https://www.forbes.com/sites/kevinanderton/2018/03/13/high-stakes-international-gambling-is-about-to-get-its-own-cryptocurrency-infographic/#21248a9a1b43>.

¹⁹⁴ *Id.*

large cut.¹⁹⁵ Companies like Dragon Coin aim to bring these service costs down by allowing players to “exchange their digital tokens for Dragon Global Chips” using a wallet, then proceed to gamble, and change back their tokens to their local currency when they get home.¹⁹⁶

Even though Macau rejects cryptocurrency, it does not prevent policy implementation that is blockchain friendly. In fact, De Club International Company plans to build the first blockchain casino.¹⁹⁷ Its goal is to cut down payments-processing costs and improve customer confidence in the casino industry.¹⁹⁸ Interestingly, De Club plans to work with a Maltese company called Wide Rich Global Company Limited in order to launch this blockchain project.¹⁹⁹ The goals of creating a blockchain casino are to increase withdrawal speeds, secure user identification, and ensure privacy.²⁰⁰ De Club plans to have its online prototype ready to launch this year.²⁰¹

Malta, Japan, and Macau are at different stages when it comes to cryptocurrency and blockchain. While Malta is actively pursuing ways to welcome cryptocurrency into gaming, Japan’s recent regulations welcoming economic possibilities such as esports, is just getting started. Macau, a dominant player in the Asian gambling market, is at the opposite end of the spectrum when compared to Malta. However, all three gaming jurisdictions support blockchain technology within their regulations and policies. Blockchain is a powerful technological tool that can solve many gaming problems and therefore help give gaming jurisdictions economic momentum.

III. WHAT REGULATIONS ANTICIPATE NEW TECHNOLOGIES AND HOW CAN THE NEVADA GAMING CONTROL BOARD APPLY SUCH REGULATIONS TO INCORPORATE CRYPTOCURRENCY/BLOCKCHAIN TECHNOLOGY?

Blockchain is changing the gaming industry. The rest of the international world is organizing, planning, and executing new regulations and policies to welcome cryptocurrency and blockchain technology. In response, the Nevada Gaming Control Board (Board) must revamp and re-evaluate regulations to meet the demands of the blockchain/cryptocurrency future. Rather than play catch-up, Nevada should prepare.

A. Recommendations

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Macau Company to Launch First Blockchain Based Casino*, THE CRYPTO UPDATES (Oct. 14, 2018), <https://www.thecryptoupdates.com/macau-company-to-launch-first-blockchain-based-casino/>.

¹⁹⁸ *Id.*

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ *Id.*

To start the groundwork for a solid regulatory framework that considers factors relevant to Nevada, the Board should set reporting deadlines within the next three years. This three-year period would give the task force the ability to calibrate upcoming technological advancements as well as setbacks. There are pieces of the puzzle to consider when it comes to regulation because there are various wants and needs from a business perspective to work through as well. It will also give the task force enough time to adapt to new trends and give them time to respond to the circumstances accordingly. Once the three-year period is over, the Board can reevaluate its progress and decide what the next best steps should be to continue supporting the needs of the Nevada gaming industry. The Board should do the following:

1. Create a Task Force

All Board members should be involved in creating a task force and selecting the members. It should choose one board member as the chair in charge of delegating tasks and enforcing deadlines. Additionally, a portion of the technology division should be part of the task force—including the division's top technology specialists and administrators. The task force must include specialized blockchain tech experts. All members of the task force, and especially the Board should not only be familiar with blockchain technology, but also have a solid, intermediate understanding of what this technology does and how it works. The Board should continue their blockchain education and report such findings with the help of blockchain tech experts (who should maintain an advisory role within the task force). The task force should require technology education workshops not only for themselves but also have the workshops available for staff members who can contribute via an advisory role.

While it is unrealistic to expect board members to become tech experts on blockchain overnight, it is feasible and vital for the Board and tech experts to collaborate and create a regulatory framework together. This is why the task force should also include corporate-gaming representatives. While business goals may differ, a task force that communicates with these different players will likely produce a reasonable regulatory framework that is broad and inclusive.

2. Set Goals and Guidelines

Mandatory public reporting every month, including progress reports on the task force's own technology education, meeting discussions, and a list of the names of experts invited to collaborate. The task force should also determine leadership goals for the gaming industry and what regulatory outcomes they would like to see as a result of this collaborative task force.

3. Create Flexible Tech-Industry Definitions

The task force should create a comprehensive list of technological definitions that are specific to the gaming/technological industry. This list of definitions should clarify industry gaming/technological practices to guide policymakers. This process must be done by working with tech, legal, and corporate experts. The statutory language can determine whether a word applies broadly or narrowly. Statutory language that is too narrow can make interpretation difficult especially because technology changes so rapidly. Statutory language that is too broad may not give technology the necessary protections it requires.

Nevada is one of several states that adopted laws referencing the word, “blockchain.”²⁰² Nevada State Senator Ben Kieckhefer described Senate Bill 398 as having a definition broad enough “to evolve over time” as technology evolves.²⁰³ The intent behind the bill was to attract technological entrepreneurs to Nevada and ensure that Nevada recognizes blockchain and smart contracts.²⁰⁴ Because Nevada recognizes blockchain as an electronic record, blockchain meets legal requirements for certain documents that need to be in writing.²⁰⁵ Having a comprehensive list written and defined by the gaming industry experts themselves will help legislatures refer to current industry practices and therefore, help them write better rules.

4. Create Basic Cryptocurrency Regulations Without Implementation.

The Nevada Gaming Control Board should focus only on creating a basic cryptocurrency regulatory framework to potentially implement down the road (in whole or in part). This should also come with extensive commentary on how to manage the risks involved within the framework. For example, The D Las Vegas Casino Hotel has a bitcoin ATM available on its casino floor that allows customers to withdraw a maximum of \$5,000.²⁰⁶ Interestingly, no

²⁰² Adrienne Jeffries, *Blockchain Laws Tend to be Hasty, Unnecessary, and Extremely Thirsty*, VERGE (Mar. 29, 2018, 12:52 PM), <https://www.theverge.com/2018/3/29/17176596/blockchain-bitcoin-cryptocurrency-state-law-legislation>.

²⁰³ Terri Russell, *New Nevada Blockchain Law Explained*, KOLO NEWS (June 6, 2018, 6:52 PM), <https://www.kolotv.com/content/news/New-Nevada-blockchain-law-484779261.html>.

²⁰⁴ Gayle M. Hyman & Matthew P. Digesti, *New Nevada Legislation Recognizes Blockchain and Smart Contract Technologies*, NEV. LAWYER 1, 13 (Aug. 2017), https://www.nvbar.org/wp-content/uploads/NevadaLawyer_Aug2017_Blockchain-1.pdf.

²⁰⁵ *Id.*

²⁰⁶ Renee, *Nevada Casinos are Still Not Very Open to Embracing Bitcoin Payments*, TIGHT POKER (Mar. 27, 2018), <https://www.tightpoker.com/news/nevada-casinos-are-still-not-very-open-to-embracing-bitcoin-payments-12514/>. *See also*,

Nevada laws require the D Casino to report a bitcoin ATM to gaming regulators.²⁰⁷ The Board can require all Nevada casino operators to disclose any type of cryptocurrency activity as part of their license requirements. If the Board wants to know more information about that bitcoin ATM, the Board could either require mandatory reports or at least inform casino operators that for the sake of analyzing gaming trends, these operators may voluntarily give the Board information.

Another example involves anti-money laundering (AML) compliance. Cryptocurrency's anonymity creates an AML compliance issue.²⁰⁸ If Nevada casinos violate AML laws, they may face steep civil penalties.²⁰⁹ Casinos must file suspicious activity reports (SARs) for any transactions \$5,000 or more and must file currency transaction reports (CTRs) for any cash-ins and cash-outs of \$10,000 or more.²¹⁰ If a casino player would like to use cryptocurrency, the Board could recommend that players should comply with digital wallet identification registration. They could consider this a foundational component for tracking money coming in and out of the casino. Therefore, this can be a reasonably basic requirement to start building a cryptocurrency regulatory framework.

Furthermore, the Board should turn to the international world for guidance as it creates a foundational framework. Through comprehensive studies and investigations, the European Union has considered a user registration requirement—with both voluntary and mandatory options.²¹¹ Virtual wallets are imperative to track the source because the wallet user must be connected to an individual player to play.²¹² Those with more than one wallet would need to include the address they used to link their first digital wallet before initiating a deposit.²¹³ Apart from identifying the individual, the Board could decide that real-name verification is important and therefore include it in its preliminary

Arthur Kane, *Casino, Pot Business Slow to Adopt Bitcoin in Nevada*, L.V. REV. J. (Mar. 26, 2018, 12:28 AM), <https://www.reviewjournal.com/business/casinos-gaming/casino-pot-business-slow-to-adopt-bitcoin-in-nevada/>.

²⁰⁷ *Id.*

²⁰⁸ See James O'Toole, *Las Vegas Sands Resolves Laundering Case with \$47 Million Deal*, CNN BUS. (Aug. 27, 2013, 10:47 PM), <https://money.cnn.com/2013/08/27/news/companies/las-vegas-sands/index.html> (showing that in 2017, the Las Vegas Sands Corporations paid around \$47 million in penalties in a special non-prosecution agreement involving a high stakes gambler, Ye Gon, who had ties to organized crime in Sinaloa).

²⁰⁹ See *id.*

²¹⁰ Mary K. Treanor, et al., *The U.S. Casino and Gaming Industry: AML/BSA Regulation and Enforcement*, BALLARD SPAHR LLP (July 16, 2018), <https://www.moneylaunderingnews.com/2018/07/the-u-s-casino-and-gaming-industry-aml-bsa-regulation-and-enforcement/>.

²¹¹ Houben & Snyers, *supra* note 158, at 9, 80.

²¹² See generally *id.* at 9, 17.

²¹³ See generally *id.* at 17 (“A user’s public and private keys are kept in a digital wallet[.]”).

regulatory framework.²¹⁴ Individual wallet identification requirements would reduce the likelihood of high-risk situations. The Board should also fully disclose the drawbacks to these registration requirements since it may deter some cryptocurrency users who value their anonymity in the gambling sphere.

Alternatively, the Board may determine that it should limit digital currency use to token purchases where players can redeem prizes, rather than convert their digital currencies to the local legal tender. Even though there are U.S. finance laws, state laws, and gaming industry goals that the Board must consider, a task force would start working through those difficulties.²¹⁵ While large Nevada casino operators do not accept cryptocurrency yet, the Board needs to have regulations ready should that position change.²¹⁶ This is not only advisable, but paramount to maintaining the future economic health of the casino and entertainment industry.

B. Incentivize Blockchain Technology in Gaming

Blockchain, like the internet, is a “foundational technology.”²¹⁷ Large gaming corporations like the Las Vegas Sands Corporation recognize blockchain’s vast application potential.²¹⁸ Blockchain technology experts from different corporations can share their perspectives on such existing regulations and offer ideas as to what laws could further blockchain growth while still protecting the gaming industry’s interests. Their perspective will help the Board determine what issues are more pressing than others and how introducing certain new laws can further these technological goals. Much like comments in the Uniform Commercial Code or model codes states may adopt, the task force’s team of legal and tech experts can provide additional examples and detailed explanations for these regulations. These explanations can include recommendations for additional criteria that should be changed or added so long as it supports blockchain innovation in the gaming industry without offending Nevada public policy.

For instance, Nevada has a statute regarding electronic records and transactions, including defining “blockchain.” The task force can focus on the language in NRS 719.045 to clarify terminology and provide blockchain

²¹⁴ Pascal Sprenger & Fraszka Balsiger, *Anti-Money Laundering in Time of Cryptocurrencies*, KPMG - COMPLIANCE MATTERS (June 2018), <https://assets.kpmg.com/content/dam/kpmg/ch/pdf/anti-money-laundering-in-times-of-cryptocurrency.pdf>, (stating that these real-name verifications can provide information on individual connections to countries of conflict with known terrorist and criminal activity).

²¹⁵ See Hankin, *supra* note 13.

²¹⁶ See Todd William, *Will Blockchain Technology Change the Gaming Industry?*, EQUITIES.COM (May 14, 2018, 10:00 AM), <https://www.equities.com/news/will-blockchain-technology-change-the-gaming-industry>.

²¹⁷ *Id.*

²¹⁸ *Id.*

application examples within the gaming industry context.²¹⁹ In the statutory language, terminology such as “redundantly maintained” can benefit from the task force’s commentary.²²⁰ The task force can define or clarify the language or provide additional analysis within its report. The task force can also report whether or not the language is broad enough to cover gaming practices or make recommendations for necessary revisions. Moreover, the task force can explain what “validated by the use of cryptography” means as applied to gaming and if the scope of the statutory language covers what the gaming industry needs to continue growing.²²¹

CONCLUSION

These recommendations touch only the surface for a regulatory overhaul catered to bolstering blockchain technology and cryptocurrency. To crank the shaft on the regulatory engine, the Nevada Gaming Control Board must act to ensure that Nevada is ready for the blockchain/cryptocurrency movement. The international world continues to embrace blockchain technology. Malta’s forward-thinking regulations indicate a new direction for gaming and possibly a new emerging gaming leader. Lawmakers face difficult challenges when it comes to writing laws that regulate cryptocurrency because cryptocurrency “operate[s] outside of the conventional financial system.”²²² It disrupts the traditional modern economic structure we know.²²³ Moreover, generational issues concerning millennials and their gaming interests require casinos to adapt and utilize technologies that cater to this ever-growing market.²²⁴ This trend has reawakened Japan, the videogame giant, and has opened doors for exponential economic growth.

Technological advancements often require regulations and policies, and the “law often stands on the sidelines as technology charges ahead, intervening only after a significant delay[.]”²²⁵ Welcoming blockchain technology for some uses while denying blockchain in a virtual currency capacity is contradictory. Even if the Board does not find a realistic place for cryptocurrency within the next three years, the drive for more interactive, social, and skill-typed games can possibly pave the way for digital currencies over time.

²¹⁹ NEV. REV. STAT. § 719.045 (2017).

²²⁰ *Id.*

²²¹ *Id.*

²²² Constandino Papagiannis & Michelle Meyer, *The Rise of Cryptocurrency and Regulatory Uncertainty*, TRELIANT (Apr. 2018), https://www.treliant.com/Portals/0/Documents/New%20Coordinates/Individual%20Articles/Treliant_Papagiannis_SP18.pdf?ver=2018-05-09-094259-710.

²²³ *See id.*

²²⁴ *See generally* Horridge, *supra* note 64.

²²⁵ Kristen E. Eichensehr, *Giving Up on Cybersecurity*, 64 UCLA L. REV. DISC. 320, 323 (2016).

Whether or not cryptocurrency is here to stay, it is clear that it would be imprudent to ignore it. While U.S. federal regulatory bodies take a piecemeal approach to cryptocurrency regulation, differing in enforcement and jurisdictional powers, it is imperative that the Board be proactive.²²⁶ Nevada has historically been a gaming leader. Malta, Japan, and Macau offer insight into how other jurisdictions have responded to these gaming trends. Nevada still has a chance to hold on to its leadership role in the gaming industry if it tackles the blockchain gaming trends head on and the time is now.

²²⁶ See Hankin, *supra* note 13.