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**SMART CONTRACT INTEGRATION IN PROFESSIONAL SPORTS MANAGEMENT:
THE IMMINENCE OF ATHLETE REPRESENTATION**

*Joshua Bernstein**

Introduction:

Beyond the world of cryptocurrencies, blockchain can revolutionize common business practices through the use of smart contracts. This article will discuss the inevitable incorporation of the use of smart contracts into a nearly trillion-dollar sports industry. First, I will introduce Bitcoin and the technology behind Bitcoin: blockchain. Second, I will introduce smart contracts and the concept behind their use. Third, I will discuss the current role of the traditional contract in the sports industry. Finally, I will aggregate the previous three parts and analyze how incorporating smart contracts into the sports industry will be beneficial.

Part I: What is a Blockchain?

As Bitcoin continues to pour into our society at full force, consumers are becoming more and more intrigued, yet skeptical of its potential uses; skepticism, however, is often caused by a lack of knowledge or confusion. Although this article will introduce the concept of Bitcoin, the primary focus is on the technology behind Bitcoin (and other cryptocurrencies): blockchain.

So, what is blockchain? It is easiest to grasp this concept by thinking as though the cryptocurrency technology has its own language. A block in the cryptocurrency language "is a record of new transactions."¹ These records may include the location of either cryptocurrency (such as a Bitcoin wallet address) or other pieces of data (such as medical data, voting records, sport scores, etc.). A new block is then added to the "chain" when each record of the new transaction is completed.² This whole process creates the blockchain.

This becomes more complicated when the terminology starts to include the language associated with cryptocurrencies. For example, when frequently asked with the question, "What actually is blockchain?" The Support Team at Blockchain.com defines the term "blockchain technology" as "the transparent, trustless, publicly accessible ledger that allows the secure transfer of ownership of units of value using public key encryption and proof of work methods."³ Unless you have some background in this field or technology, this definition will undoubtedly confuse you, and for good reason.

To try and break down this more technical definition, Douglas Vaughn and Anna Outzen of Deutsch Kerrigan LLP described blockchain as essentially a "computerized public ledger that can apply to almost anything a person might typically save into a database or spreadsheet."⁴ Fundamentally,

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¹ Jacob Kleinman, *What Is Blockchain?*, Lifehacker (2018), <https://lifehacker.com/what-is-blockchain-1822094625> (last visited Feb. 4, 2018).

² *Id.*

³ Alyson, *What is blockchain Technology?*, Blockchain Support Center (2017), <https://support.blockchain.com/hc/en-us/articles/211160223-What-is-blockchain-technology> (last visited Jan. 20, 2018).

⁴ Douglas Vaughn, Anna Outzen & Deutsch Kerrigan, *Understanding How Blockchain Could Impact Legal Industry*, Law360 (Jan. 11, 2017, 12:17 PM); Joseph Raczynski, *Building Our Blockchain Future: What Lies Ahead (Part 3)*, Legal Executive Institute (2016), <http://legalexecutiveinstitute.com/blockchain-future-ahead/> (last visited Jan. 20, 2018).

whatever content or data is uploaded to the blockchain is shared among users so that all participants to the transaction can view the blockchain and be in sync.⁵

It is helpful to think of Blockchain as a new technology allowing multiple parties in a transaction to each verify what will be entered onto a ledger in advance. However, the key is that no single party can later change those ledger entries. This in turn results in a trustworthy record that severely inhibits fraud.⁶ Many people can write entries into a record of information, and a community of users can control how the record of information is amended and updated.⁷ As a result, blockchain is decentralized, a key factor in its popularity.

Blockchains require multiple parties and a shared infrastructure. In essence, a blockchain can be used to automate or decentralize the certification authority.⁸ This idea has led many to see blockchain as a valid alternative to the traditional banking system. Instead of needing a bank or some other institution to verify the transfer of money, blockchain can be used to eliminate the middle man.⁹

Connecting this idea of blockchain as an alternative to the banking system and relating it briefly to the use of Bitcoin, blockchain is a register, or ledger, of all bitcoin transactions that have ever occurred. Each transaction, or block, is authenticated before it is added to the chain of all prior transactions, the blockchain. The blockchain is open and transparent for all to see, although the transactions are still anonymous.¹⁰ Thus, if you send Bitcoin to a friend (or sell it), that transaction becomes publicly available on the blockchain. Other people may not know your identity, but they know exactly how much value has been transferred from one person to another.¹¹

It comes as no surprise that the blockchain technology could be analyzed in great depth. However, without pursuing too heavy of a technical approach, the above explanation should provide a basic understanding of the blockchain concept. With the foundation for cryptocurrencies established, it is important next to briefly introduce the concept of cryptocurrencies (such as Bitcoin).

BITCOIN AND TOKENS

In its simplest terms, Bitcoin is a “digital dollar.”¹² Like a traditional fiat currency, the price of Bitcoin fluctuates based on supply and demand, although to a much greater extent. People are now beginning to convert Bitcoin into what are called “tokens,” which companies issue during an Initial Coin Offering (ICO). An ICO allows investment in a company by purchasing tokens with their Bitcoin.¹³ “A “token” by definition is a representation of any fungible tradable good such as currency,

⁵ *Id.*; See also Ian Lopez, *Blockchain Buzz: How the Blockchain Stands to Change Legal Tech*, Legaltech News (2016), <http://www.legaltechnews.com/id=1202763033042/Blockchain-Buzz-How-the-Blockchain-Stands-to-Change-Legal-Tech> (last visited Jan. 21, 2018).

⁶ Nolan Bauerle, *What is Blockchain Technology?*, CoinDesk (2017), <https://www.coindesk.com/information/what-is-blockchain-technology/> (last visited Jan. 20, 2018).

⁷ Ronald L Chichester, *Blockchains Explained*, 80 TEXAS BAR JOURNAL 228, 229 (2016).

⁸ *PowerAgent POWA: Blockchain Based Sports Contract Tokens?*, BitcoinExchangeGuide (2018), <https://bitcoinexchangeguide.com/poweragent-powa/> (last visited Jan. 21, 2018).

⁹ Jacob Kleinman, *What Is Blockchain?*, Lifehacker (2018), <https://lifehacker.com/what-is-blockchain-1822094625> (last visited Feb. 4, 2018).

¹⁰ Reggie O’Shields, *Smart Contracts: Legal Agreements For The Blockchain*, 21 N.C. Banking Inst. 177, 179 (Mar. 2017).

¹¹ Jacob Kleinman, *Supra What Is Blockchain?*, Lifehacker (2018).

¹² Samantha Radocchia, *How Is Ethereum Different From Bitcoin?*, Forbes (2017), <https://www.forbes.com/sites/quora/2017/09/14/how-is-ethereum-different-from-bitcoin/#5a94fbff502b> (last visited Jan. 21, 2018).

¹³ *Id.*

loyalty points, gold certificates, in game items, and more.”¹⁴ Based on the supply and demand of those tokens, their price, just like a share of stock after a company holds an Initial Public Offering (IPO), goes up or down.”¹⁵ In other words, a token is really an abstraction representing ownership of an underlying tradable asset.¹⁶

ETHEREUM

It is an important concept to realize that there is more than one blockchain. For example, Ethereum is another very popular blockchain. Ethereum is a decentralized platform, with its own blockchain and coin. Ethereum’s coin, Ether, is essentially just another “digital dollar.” This is very much like the concept of Bitcoin, however, the difference between Ethereum and Bitcoin is the fact that Bitcoin is nothing more than a currency, whereas Ethereum is a ledger technology that companies are using to build new programs.”¹⁷ Both Bitcoin and Ethereum operate on what is called “blockchain” technology, however Ethereum’s is far more robust, allowing for the use of smart contracts on Ethereum’s blockchain.¹⁸

HYPERLEDGER

Hyperledger is a new technology, which launched in 2016 by the Linux Foundation with a technical and organizational governance structure and thirty founding corporate members. Hyperledger is a new private blockchain, or distributed ledger, and is about “communities of software developers building blockchain frameworks and platforms. It is a global collaboration, hosted by The Linux Foundation, including leaders in finance, banking, Internet of Things, supply chains, manufacturing and Technology.”¹⁹

Without delving into the technical specificity, Hyperledger is a permissioned blockchain, which differs from the blockchains found with Bitcoin and Ethereum. Permissioned blockchains allow participants to be known to one another. There are many projects that are being developed with Hyperledger, with the most prominent being Hyperledger Fabric, “a business blockchain framework hosted by the Linux Foundation intended as a foundation for developing blockchain applications or solutions with a modular architecture. Hyperledger Fabric allows components such as consensus and membership services to be plug-and-play.”²⁰ In practice, “Many companies are working together to build an open blockchain fabric that can support production business networks – testing interactions between applications and secure blockchain networks for use cases including supply chain, capital markets, manufacturing and healthcare.”²¹

¹⁴ Robert Simoes, *Ethereum Tokens vs. ETH: What's the difference?*, Medium (2017), <https://medium.com/@RobertSimoes/ethereum-tokens-vs-coins-whats-the-difference-5ba27a08141b> (last visited Jan. 21, 2018).

¹⁵ Samantha Radocchia, *How Is Ethereum Different From Bitcoin?*, Forbes (2017).

¹⁶ Robert Simoes, *Ethereum Tokens vs. ETH: What's the difference?*, Medium (2017).

¹⁷ Samantha Radocchia, *How Is Ethereum Different From Bitcoin?*, Forbes (2017),

<https://www.forbes.com/sites/quora/2017/09/14/how-is-ethereum-different-from-bitcoin/#7844be1d502b> (last visited Apr. 30, 2018).

¹⁸ *Id.*

¹⁹ *About Hyperledger*, Hyperledger (2017), <https://www.hyperledger.org/about> (last visited Mar. 4, 2018).

²⁰ *IBM Blockchain based on Hyperledger Fabric from the Linux Foundation*, IBM (2018), <https://www.ibm.com/blockchain/hyperledger.html> (last visited Mar. 4, 2018).

²¹ *Id.*

Part II: Smart Contracts Overview

Coinciding with the Ethereum blockchain, among others, is the concept of smart contracts. Smart contracts are self-executing electronic instructions drafted in computer code allowing a computer to "read" the contract and, in many cases, effectuate the instruction.²² Smart contracts self-execute the stipulations of an agreement when predetermined conditions are triggered.²³ The contracts are intended to work in concert with blockchain technology to enforce transactions on the blockchain and are a step beyond typical electronic contracts in that the actual agreement is embodied in computer code, rather than English or another traditional language. Thus, a physical signature is not possible or needed. Instead, the parties "sign" the smart contract using cryptographic security and deploy it to a distributed ledger, or blockchain. Smart contracts are not novel, however, as they must consist of a discernible agreement between parties with capacity to make that agreement, much like a traditional contract.²⁴

The general process of creating and executing a smart contract involves several steps. First, the program itself is recorded on the blockchain, which gives it a blockchain's characteristic permanence and censorship resistance. Second, the program can itself control blockchain assets – i.e., it can store and transfer amounts of cryptocurrency. Third, the program is executed by the blockchain, meaning it will always execute as written and no one can interfere with its operation.²⁵

The overarching interest in smart contracts results from this secure and instant contract execution. Instead of costly litigation to solve problems, a smart contract stops execution — i.e. someone does not get paid if pre-determined conditions are not met.²⁶ In the alternative, if said conditions are met, the smart contract will automatically execute, thus preventing any withholding of payments.²⁷

With this concept in mind, smart contracts work best when you can ask quantitative questions like amounts, temperature, weight, time and date, and other measurable items.²⁸ A host of data inputs make for better contracts and are no problem for machines to process rapidly.²⁹

The field of finance is another area where smart contracts work very well. The financial industry is driven by data, and calculations are used to determine contract goal achievement. When certain quantifiable goals and milestones are achieved, the smart contract will allow predetermined conditions, think payments, deliverables, etc., to execute.³⁰

Because of the close relationship between the professional sports industry and financial industry, the use of smart contracts can prove extremely beneficial to all parties involved. The emergence of smart contracts in the sports industry is beginning to evolve. Although this link has been made, the use of smart contracts in the sports world still remains very limited. For example, besides a lone European based crypto-company (PowerAgent, discussed in detail in Part IV), smart contracts

²² Reggie O'Shields, *Smart Contracts: Legal Agreements For The Blockchain*, 21 N.C. Banking Inst. 177, 179 (Mar. 2017).

²³ *Id.*

²⁴ *Id.*

²⁵ Josh Stark, *Making Sense of Blockchain Smart Contracts*, CoinDesk (2016), <https://www.coindesk.com/making-sense-smart-contracts/> (last visited Jan. 21, 2018).

²⁶ Terry Brock, *Business advantages of blockchain smart contracts*, bizjournals.com (2017), <https://www.bizjournals.com/bizjournals/how-to/technology/2017/09/business-advantages-of-blockchain-smart-contracts.html> (last visited Jan. 21, 2018).

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

are scarce among today's sports industry, specifically in creating, managing, tracking or protecting professional athlete contracts.

Part III: Current Sports Industry Practice

In the current industry practice, professional athletes rely on sports agents to represent them in the business aspects of their profession.³¹ There have been many groups engaged in attempting to regulate agents, however, despite the introduction of regulations by all of these groups, none have been truly effective at addressing the full range of problems that have occurred since the late 1970s.³²

Beyond unscrupulous agents' improper conduct in collegiate sports, reports of unethical behavior in the field of sports agency are widespread.³³ Problems that occur with some frequency include incompetent representation, improper financial advising, fraud, larceny, conflicts of interest, excessive fee charging, and client raiding.³⁴ Competition from unqualified agents and against large agencies is regularly recognized as a major contributor to the unethical and illegal reality that many agents produce.³⁵

REGULATION OF ATHLETE REPRESENTATIVES.

As the sport agency industry has evolved, aspects of professional service firms have become more pronounced as duties have expanded and specialization has increased.³⁶ In addition, most professional sports leagues now require all agents and managers to have at least a bachelor's degree. To an even greater extent, some leagues, such as the National Football league (NFL) require all agents to have at least a master's degree, unless you have at least six years of full-time negotiation experience in sports management.³⁷ In addition to both an undergraduate and Masters or Law degree, a successful completion of a written multiple-choice examination must be passed and an application fee must be submitted.³⁸ Although the NFL provides some of the strictest requirements to become an agent, the restrictions are not very stringent for those who have completed a post graduate Masters or Law degree.

In a similar respect to the NFL, an aspiring agent of the National Basketball Association (NBA) must complete and pass an examination and submit an application fee.³⁹ However, the educational requirements are much less stringent, requiring only a "degree from an accredited four-year college/university [or] to substitute for any year(s) of education, an applicant may submit for consideration any relevant negotiating experience."⁴⁰

³¹ James Masteralexis, Lisa Masteralexis, & Kevin Snyder, *Enough Is Enough: The Case For Federal Regulation Of Sport Agents*, 20 JEFFREY S. MORAD, SPORTS L.J. 69.

³² *Id.* at 74.

³³ *Id.*

³⁴ *Id.* 74-75.

³⁵ Ross Viltz, Chad Seifried, & Jeremy Foreman, *An Analysis of Sports Agent Regulation in Intercollegiate Athletics: A Call for Cooperation*, 24 J. LEGAL ASPECTS OF SPORT 62

³⁶ 20 JEFFREY S. MORAD SPORTS L.J. at 79.

³⁷ *How to Become an Agent*, NFL Players Association (2014), <https://www.nflpa.com/agents/how-to-become-an-agent> (last visited Mar. 4, 2018).

³⁸ *Id.*

³⁹ *Becoming An Agent*, NATIONAL BASKETBALL PLAYERS ASSOCIATION, <https://nbpa.com/becoming-an-agent/> (last visited Mar. 5, 2018).

⁴⁰ *Id.*

In a similar fashion, to become a MLB agent, which enables a representative to represent or advise a player in negotiating the terms of a Major League contract, an aspiring agent must pass an examination. However, the major difference is that an aspiring MLB agent does not need any sort of educational background.⁴¹ Although restrictions and regulations have been enacted to help monitor the number of agents, there are still a surplus of agents compared to the number of professional athletes. This in turn leads to a very competitive industry, in which young agents just entering the field may feel tempted to incentivize potential clients.

One of the most debated and provocative regulations relates to student athletes.⁴² The Sports Agent Responsibility and Trust Act (SPARTA), seeks to protect student-athletes by prohibiting sports agents from signing athletes to an agency contract. SPARTA provides regulations that comply with the Federal Trade Commission (FTC).⁴³ Currently more prevalent in the news is the restriction of SPARTA that considers misrepresentations and offers of gifts to students by sports agents to be in violation of the FTC's Regulations regarding the Federal Trade Commission Act.⁴⁴ The issue of incentivizing amateur collegiate athletes is a prevalent problem in the National Collegiate Athletic Association (NCAA). However, with the help of blockchain technology (as discussed with SportyCo in Part IV), amateur athletes may be able to be endorsed by third parties other than agents.

EXPENSES: SPORTS AGENT'S COMMISSIONS.

Although a professional athlete does not need a sports agent to negotiate a deal or contract, it is the most common practice to either hire an agent or a contract attorney. As a result, expenses will occur with the employment of these representatives.⁴⁵ In addition to a potential hourly wage, an agent or lawyer will take a commission based on the terms of the contract. An agent's commission will vary depending on the sport the athlete is associated with; however, generally, an "agent earns between 4 and 10 percent of an athlete's playing contract."⁴⁶

Specific sports leagues will also place a maximum percentage that an agent can earn via a commission. Although neither the National Hockey League (NHL) nor the MLB place limits on an agent's commission, the NFL "states that an agent cannot receive more than 3 percent of player salaries."⁴⁷ The NBA also imposes a 3 percent limit on an agent's commission.⁴⁸

It is clear that this restriction of a sports agent's commission on a player's contract can limit the amount an agent can make. However, there are no limits on the commissions an agent may make for an endorsement deal. In this respect, "an agent typically earns 10 to 20 percent of a client's endorsement contract. An agent may also set up paid meetings and appearances, for which he'll typically take between 10 and 20 percent of the earnings."⁴⁹

⁴¹ *MLBPA Agent Certification*, <https://registration.mlbpa.org/> (last visited Mar. 5, 2018).

⁴² Sports Agent Responsibility and Trust Act, 15 USCS § 7801 (2008).

⁴³ *The Sports Agent Responsibility And Trust Act*, U.S. Legal, <https://sportslaw.uslegal.com/the-sports-agent-responsibility-and-trust-act/> (last visited Mar. 4, 2018).

⁴⁴ *Id.*

⁴⁵ Jason Belzer, *Do Professional Athletes Need To Be Represented By Sports Agents?*, SportsMoney (2015), <https://www.forbes.com/sites/jasonbelzer/2015/07/27/do-professional-athletes-need-to-be-represented-by-sports-agents/#2daa9a7e6a9e> (last visited Mar. 5, 2018).

⁴⁶ Marie Gentile, *The Average Sports Agent's Commission*, Chron.com, <http://work.chron.com/average-sports-agents-commission-21083.html> (last visited Mar. 5, 2018).

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

USE OF TRADITIONAL CONTRACTS.

In the current industry of sports management and athlete representation, the use of traditional contracts play a valuable role. To have a legally binding and enforceable sports contract, six elements must be present: (1) an agreement; (2) between competent parties; (3) based upon the genuine assent of the parties; (4) supported by consideration; (5) made for a lawful objective; and (6) in the form required by law.⁵⁰ Although implied contracts are often valid in many industry contexts, all implied contracts (i.e., a contract in which the agreement is not evidenced by written or spoken words, but by the acts and conduct of the parties) in the sports industry have virtually been eliminated.⁵¹ Instead, the industry norm for sports contracts is in the form of an express contract: a contract in which the agreement of the parties is evidenced by their words, whether spoken or written.⁵²

In respect to a sports contract, it can be divided into three categories: (1) professional service contracts or standard player contracts; (2) endorsement contracts; and (3) appearance contracts. Many of the standard player contracts are exactly that: standard. The contracts will include “boilerplate” language, with simple variations for each individual athlete.⁵³ As such, the incorporation of templated smart contracts to replace the traditional contract is not unrealistic.

Part IV: The Incorporation of Smart Contracts into the Sports Industry

THEORY.

Incorporating smart contracts in place of, or along with, the traditional contract in the sports industry will prove beneficial for all parties involved. Not only will the incorporation of smart contracts simplify the contract drafting process, it also has the potential to eliminate disputes that arise from contracts. For example, because smart contracts are self-executing based on predetermined conditions, once those conditions are met, payment is transferred automatically. If the predetermined conditions are not met, then payment will not be released. Conversely, if said predetermined conditions are met, the payment will be automatically released. The automatic execution of smart contracts based on predetermined conditions will help prevent parties from withholding proper payments and it will deter parties from demanding invalid payments. The use of smart contracts will streamline the athlete contract process, allowing for a secure way of transacting massive amounts of money.

Another example to portray how the sports industry can utilize the blockchain technology with the use of smart contracts is via incentive-use payments. As one ex-rugby star had explained, “There is further potential for blockchain-based smart contracts in other areas of sport as well. One example would be incentive-based bonus payments, where a player is paid extra for on-field performance.”⁵⁴ To understand the potential use in this way, think of a power-hitting professional baseball player (Player X). Assume that Player X and the team have a smart contract in place where Player X will receive a \$250,000 bonus if he hits thirty-five homeruns during the season. With blockchain and smart contracts, if Player X is currently at thirty-four homeruns and then hits number thirty-five, the transaction will automatically and instantaneously fulfill itself due to meeting the predetermined conditions of the smart contract. The smart contract will pull the data (in this case

⁵⁰ *Sports Contracts – Basic Principles*, U.S. Legal, <https://sportslaw.uslegal.com/sports-agents-and-contracts/sports-contracts-basic-principles/> (last visited Mar. 3, 2018).

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Id.*

⁵⁴ Jon Southurst, *Ex-Rugby Star: Smart Contracts Could Prevent Legal Disputes in Sport*, CoinDesk (2015), <https://www.coindesk.com/ex-rugby-star-smart-contracts-prevent-legal-disputes-sport/> (last visited Jan. 20, 2018).

Player X's number of homeruns) from the blockchain. Once the predetermined condition is met, the transaction is fulfilled, and \$250,000 is instantly transferred to Player X.

Although this is a very simple example, the different combinations of contract conditions involving a professional athlete and the team are virtually endless. For example, this technology can be used in the context of team merit. In this situation, the smart contract may involve a clause which ensures a \$1,000,000 bonus to Player X if Player X's team wins the World Series. With the use of smart contracts, the transaction can be digitally facilitated, verified, and executed in a credible way without the need of third party intermediaries.

A third, and related, example of how smart contracts can be exploited in the sports industry is in endorsement deals. Disputes between professional sportspeople and third-party sponsors arise with high frequency.⁵⁵ However, the use of smart contracts to replace traditional contracts can help with these issues.⁵⁶ Although the negotiation process will remain the same between the two parties, the process of how these terms are executed will change. With the use of smart contracts, the transactions will only occur when the predetermined conditions are met. For an example, assume Player A has entered an endorsement deal with Company Z. Player A will be paid \$500,000 after he appears at ten Company Z sponsored events. The process will work similarly as seen above with a contract between Player A and a team. The smart contract will pull the data (in this case, Player A's number of appearances) from the blockchain. Once the predetermined condition is met (in this example, ten appearances), the transaction is fulfilled and \$500,000 is instantly transferred to Player A. However, if the condition is never met, then the transfer will not occur and Player A will not receive the funds.

In reality, Player A would probably get paid per appearance with a bonus at the end for all completed appearances; something easily accomplishable with blockchain technology and smart contracts. In this instance, Player A may be paid a fixed amount (depending on negotiated terms) of \$50,000 per appearance. After each successful individual appearance, the use of smart contracts allows an automatic transfer of \$50,000 to Player A. If Player A only appears in eight of the ten total appearances, Player A would not earn the supplemental bonus, based on negotiated terms. As such, the smart contract would not release those bonus funds. Conversely, if Player A successfully appears at all ten of the sponsorship events and meets the predetermined terms of the contract, the bonus will automatically be released to Player A.

Although these are just a few examples of how smart contracts can be merged into the sports industry, there are many potential opportunities. Essentially, a smart contract can replace a traditional contract associated with a professional athlete in any situation. For example, professional athletes will have insurance plans, sponsorships, and other general contractual obligations (i.e., the athlete's agent or possible investment deals). By replacing the use of traditional contracts with smart contracts in the professional sport industry, transactions will be processed automatically, allowing for a streamlined payment process for all parties involved.

EXECUTION.

Although smart contracts have the potential to be used in the sports industry, there are various preliminary steps that would need to be taken to turn the possibility into a reality. Smart contracts are implemented on various blockchains; however, they are widely implemented on the Ethereum

⁵⁵ *Id.*

⁵⁶ *Id.*

blockchain. As such, it is essential for the blockchain to contain the data necessary to execute the smart contract.

Because smart contracts need to confer with the data uploaded to the blockchain to inquire whether the predetermined conditions have been met, the smart contract option will not be available if the data is not uploaded to the blockchain. In order for the smart contract incorporation to be a success, one ex-rugby professional stated, “You really need an industry insider to kick it off. A lot of smart contracts projects are struggling with that, because we're these generalists, crypto-geeks who can think of certain use-cases from our experiences, but there's a lot of fields we just don't know about.”⁵⁷ Thus, just having the idea is not enough. A working blockchain system that incorporates the use of smart contracts cannot be successful without the necessary foundation.

A. Athlete Representation

There are several examples of current crypto-companies trying to incorporate the use of smart contracts into the sports management of professional athletes. The most prominent example comes from a European based company, PowerAgent. PowerAgent is the only crypto-company attempting to simplify the contractual process associated with professional athletes, built on the private permissioned Hyperledger blockchain technology hosted by The Linux Foundation.⁵⁸

PowerAgent (POWA) is a “digital contract platform for creating, managing, tracking and protecting professional athlete contracts.”⁵⁹ The site will offer a variety of smart contract templates which are suitable for many sports industries including basketball, boxing, football, and many more.⁶⁰ Thus, this platform will enable users with limited knowledge of smart contract programming to execute the desired contract. Essentially, PowerAgent is creating a blockchain system in which they replace the need for the traditional contract in the sports industry. The PowerAgent platform will link “all parties involved in the athlete contract negotiation and agreement, between the sporting club to the athletes, and registers the entire contract process, from deployment to payment, displaying it in an at-a-glance, user-friendly interface, and guaranteeing autonomous payments when all contractual agreements have been met.”⁶¹

Although PowerAgent is still in development before its initial crowdfunding phase (this article will not discuss the initial coin offering process) and initially only focuses on European sports leagues, this crypto-company is attempting to pioneer the transition from the use of traditional contracts to smart contracts.⁶²

Because PowerAgent is in the very early phases of its company building stages, the specifics of the system and its potential uses are limited. For that reason, there are several improvements to PowerAgent, or rather, other uses that the system can use. One of these improvements includes offering more than just contracts with teams. In this regard, PowerAgent is not only working to integrate the use of smart contracts between professional athletes and their respective team, but also endorsement and appearance contracts.⁶³ Even so, the incorporation of smart contracts should not

⁵⁷ *Id.*

⁵⁸ <https://www.poweragent.io>.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *PowerAgent POWA: Blockchain Based Sports Contract Tokens?*, BitcoinExchangeGuide (2018), <https://bitcoinexchangeguide.com/poweragent-powa/> (last visited Jan. 21, 2018).

⁶³ <https://www.poweragent.io>

be limited to these specific contexts. For example, smart contracts can be used in coordination with insurance companies as well.

Although PowerAgent is the only company currently attempting to incorporate smart contracts into the field of professional athlete representation, there are several other crypto-companies looking to incorporate smart contracts into the sports industry in other ways. For example, BraveLog “aims to record sports events, establish the CV of the player, and serve as a reference for coaches to train athletes in order to cultivate elite national athletes by utilizing big data.”⁶⁴ BraveLog is a great example of the importance of data with the use of blockchain and how this incorporation can be valuable.

B. Athlete Development

In addition to incorporating smart contracts in the athlete representation field, crypto-companies are also implementing smart contracts to help with player development. BraveLog “hopes to elevate the [sport’s] industry by establishing a social platform, integrating with current sign-up and payment systems, and allowing multiple device access that will enable players to understand their own capabilities and design personal, effective training plans.”⁶⁵ An example of this in practice incorporates calculating player compensation and premium adjustments by storing sports data. This information can be integrated with insurance and medical services in order to generate insurance models that are tailored to each player’s needs.⁶⁶ Thus, storing this data allows the advantageous use for not only professional athletes, but for the associated third party as well.

Here, the professional athlete would benefit by obtaining a personal and tailored insurance or medical plan based on all of his prior data. The third party meanwhile (an insurance or medical provider) will also benefit, as they can save money by specifying the particular needs for a professional athlete. BraveLog reinforces the notion that insurance and medical capabilities are possible within smart contract technology.

Presently, SportyCo is seeking to solve the issue of high entry barriers into the professional sports world, both for athletes and small investors.⁶⁷ This is a major hurdle for semi-pro or amateur athletes trying to become a quality professional athlete. However, “SportyCo will change financing in the sports industry by deploying a blockchain-based financing platform, serving athletes, clubs and other sports organizations, in raising the funds required to achieve athletic success.”⁶⁸ The theory behind SportyCo is enabling a wider community to invest in sports.⁶⁹

To illustrate how SportyCo will help revolutionize the barriers of entries into the professional sports world, suppose that Player *B* is an aspiring tennis player. With the use of SportyCo, Player *B* can raise funds from interested investors to help support the goal of becoming a professional tennis player. These investor funds will assist in paying for training regimens, equipment costs, traveling expenses, and any other associated costs that Player *B* may incur. In turn, Player *B* will offer a

⁶⁴ Los Silva, *Microsoft Launches The First Sports Blockchain*, ETHNews.com (2017), <https://www.ethnews.com/microsoft-launches-the-first-sports-blockchain> (last visited Jan. 20, 2018).

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ <https://sportyco.io>.

⁶⁸ *Id.*

⁶⁹ *Id.*

percentage of his/her income, for a predetermined number of years, to those investors. Thus, the investor has the opportunity to earn a return based on the success and earnings of the athlete.

C. Sports Gambling

Another example of how crypto-companies are incorporating smart contracts in the sports industry is through the field of sports gambling. It is inarguable that sports gambling is extremely controversial among the sporting industry, and many issues arise as a result of its current practice. As such, many crypto-companies are beginning to utilize the blockchain technology to rectify these common problems. XWIN is a prominent example of one of these companies:

A sports bettor could incur commissions of up to 10 percent per bid, experience lack of transparency, suffer unfair account blockages and risk their financial information being shared with less reliable intermediaries. Xwin is an Ethereum blockchain-based betting platform that seeks to solve these problems. It replaces the bookmaker who accepts cash bets on results of sports games (horse racing, football, running, etc.) and other events... Bets are accepted on certain conditions, with predetermined rules of payout. Subsequently, the XWIN smart contract performs the functions of an arbitrator that autonomously and completely independently fulfills the terms of agreement.⁷⁰

Simply put, the conditions prescribed in the smart contract will always be met regardless of the desires of the parties. The bettor who places the wager receives information about all the conditions for complete transparency. For example, the payout amount is locked on the account of the smart contract at the time of placing the bet and cannot be expended or spent prior to the settlement. Neither party has the ability to change the bet or spend the prize fund.⁷¹

XWIN illustrates the versatility of smart contracts and its potential and integration into the sports world. Sports gambling and the use of blockchain and smart contracts is a very popular trend. Although sports betting is currently only legal in certain jurisdictions, the technology and structure of sports gambling on the blockchain is very valuable (i.e., storing data electronically and securely -- sports scores, athlete's stats, predictions, capper's stats, etc.).

With the widespread popularity and recognition of the possibility of the legalization of sports gambling, several blockchain systems have the bettor's interest in mind.⁷² First, FansUnite is building a system that "harnesses the power of the Ethereum blockchain to provide cheaper, more secure, verifiable and transparent betting."⁷³ FansUnite will be the first betting platform to incorporate social concepts with member profiles, analytics over members' betting history, and the ability to follow other profitable bettors.⁷⁴

⁷⁰ Jamie Tolentino, *This new blockchain-based platform wants to make sports betting less dodgy*, The Next Web (2018), <https://thenextweb.com/cryptocurrency/2018/01/19/new-blockchain-based-platform-wants-make-sports-betting-less-dodgy/> (last visited Jan 21, 2018).

⁷¹ *Id.*

⁷² Darren Heitner, *Blockchain Takes a Shot at Redefining the Sports Betting Experience*, Inc.com (2018), <https://www.inc.com/darren-heitner/blockchain-takes-a-shot-at-redefining-sports-betting-experience.html> (last visited Jan. 20, 2018).

⁷³ <https://fansunite.io/>.

⁷⁴ *Id.*

Further, FansUnite focuses on the storage of big data aspect of the blockchain technology. The system relies on a reliable and secure storage of data that cannot be manipulated but can be used a specific way. This trend of online gambling services through blockchain and smart contracts is gaining popularity. Electroneum is a company that focuses on online gambling services incorporating the use of blockchain and data storage.⁷⁵ BlitzPredict is a blockchain system that provides bettors trustworthy insights through its aggregation service.⁷⁶ Finally, HEROcoin aims to decentralize sports betting, maintaining that data storage and decentralization is key for success in this area.⁷⁷

D. Fan Interaction

The next example of the incorporation of the blockchain technology into the sports industry is much more of a stretch to become a reality. FCFL is attempting to build a platform to put sports fans in control of team decisions on and off the field.⁷⁸ The system would lock each fan into one team, for which they have control over play-calling. Fans will be able to engage with play-calling directly on the screen on which they are watching the game. After each offensive play is finished, fans will be served a selection of plays, essentially like the Madden video game.⁷⁹ With the FCFL platform, there “will be an entire American football league built on the premise that fans should be able to choose the players and coaches that make up each of the eight inaugural teams and even pick the teams' offensive plays.”⁸⁰ FCFL describes their innovative league as “based on the belief that fans will enjoy a product that feels more like a video game than a traditional football-watching experience.”⁸¹ The best way to think of the practical capabilities of FCFL is akin to someone playing a *Madden* video game, but in real life, controlling real players.

ADVANTAGES.

Incorporating smart contracts into the sports industry has many potential benefits. Smart contracts are self-executing contracts and allow for automatic enforcement only upon completion of predetermined terms.⁸²

A. Decentralized Ledger

A key benefit of the blockchain technology is that it is essentially a digitized, decentralized public ledger for all cryptocurrency transactions.⁸³ As a result, the use of smart contracts allows for auto-releasing of funds to a cryptocurrency address.⁸⁴ This will cut payment processing times (allowing

⁷⁵ Darren Heitner, *Blockchain Takes a Shot at Redefining the Sports Betting Experience*, Inc.com (2018).

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ <https://fcfl.io/>.

⁷⁹ *Id.*

⁸⁰ Darren Heitner, *New 8-Team Football League Gives Fans Control Based On Blockchain-Based Tokens*, Forbes (2017) <https://www.forbes.com/sites/darrenheitner/2017/12/15/new-8-team-football-league-gives-fans-control-based-on-blockchain-based-tokens/#3a4447ac208b>

⁸¹ *Id.*

⁸² Reggie O'Shields, *Smart Contracts: Legal Agreements For The Blockchain*, 21 N.C. Banking Inst. 177, 179 (Mar. 2017). <http://scholarship.law.unc.edu/ncbi/vol21/iss1/11/>

⁸³ *Blockchain*, Investopedia (2018), <https://www.investopedia.com/terms/b/blockchain.asp> (last visited Mar 24, 2018).

⁸⁴ Josh Stark, *Making Sense of Blockchain Smart Contracts*, CoinDesk (2016), <https://www.coindesk.com/making-sense-smart-contracts/> (last visited Jan. 21, 2018).

for instantaneous transfers), fees (no financial middle-man), and labor costs.⁸⁵ Instant transfers may be a huge benefit for athletes, especially because of the often-massive amounts of money that is associated within a specific contract. Instantaneous transfers allow the athlete to have access to their funds as soon as the predetermined conditions are met.

B. Fraud Prevention

A decentralized, open-source ledger proves advantageous in fraud prevention as well. The open-source nature provides a safety measure which enables every transaction to be recorded and uploaded to the blockchain.⁸⁶ Fraud can be easily detected because “the integrity of the blockchain systems is monitored and maintained by miners who validate transactions all day, every day.”⁸⁷ As the number of miners validating such blockchain transactions are rapidly growing into the thousands, the use of blockchain-based cryptocurrencies are given “an enormous amount of oversight and makes them nearly invulnerable to fraud.”⁸⁸ This does not mean that fraud is not susceptible. However, the use of blockchain and smart contracts can severely inhibit the chance of fraud.

C. Coexistence with the Courts

Many analysts studying the new trend of blockchain technology fear that smart contracts will replace the need for lawyers. The primary concern involves the fear that because smart contracts have the potential to eliminate petty contractual disputes, the need for lawyers would then also dissipate. Although this is the overarching goal with the use of smart contracts, it does not mean that smart contracts will replace all contract related disputes.

In the context of professional athlete representation, each player’s contract may be dealing with tens of millions of dollars. As a result, each player will likely have an individualized contract, with personalized negotiations that pertain to that individual player. Although PowerAgent discusses the possibility of incorporated contract templates that are easy to understand, there will still be a need to personalize these smart contracts depending on the professional athlete’s desired terms. Thus, lawyers will still be in demand to help draft these personalized contracts, or even negotiate terms with the team owners.

Self-executing smart agreements could exist alongside courts by determining who should pay legal fees for the action, taking away at least some of the stress for parties involved.⁸⁹ “Smart contracts have the ability to offer protection to people who currently lack the time, financial resources or knowledge to access the traditional legal system for petty issues.”⁹⁰ The use of smart contracts can alleviate these issues in the sports industry. For instance, disputes can be eliminated with the enforcement of the smart contracts depending on the predetermined conditions actually being met. Thus, if the conditions are not met, the transaction will not be initiated or completed.

⁸⁵ *Id.*

⁸⁶ *Advantages and Disadvantages of Decentralized Blockchains*, World Crypto Index, <https://www.worldcryptoindex.com/advantages-disadvantages-decentralized-blockchains/> (last visited Mar. 26, 2018).

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ Josh Stark, *Making Sense of Blockchain Smart Contracts* CoinDesk (2016). <https://www.coindesk.com/making-sense-smart-contracts/>

⁹⁰ Jon Southurst, *Ex-Rugby Star: Smart Contracts Could Prevent Legal Disputes in Sport*, CoinDesk (2015), <https://www.coindesk.com/ex-rugby-star-smart-contracts-prevent-legal-disputes-sport/> (last visited Jan. 20, 2018).

D. New Practice of Law

Although smart contracts may alleviate the need for lawyers in some respects, there will be other areas where lawyers will be needed. Primarily, with the evolution of blockchain, regulations will imminently follow. This will be crucial for these crypto-companies (like PowerAgent) to understand the regulations. In turn, lawyers will still be prominently used in the context of providing legal counsel and advice about the law regarding these technologies. This new blockchain technology will essentially raise a new area of contract law that lawyers will still be involved in: crypto-law.

Because smart contracts are coded language and not written in basic English terms, a traditional contract attorney will not be able to draft a valid smart contract. This does not mean, however, that lawyers will be unable to use smart contract in the legal field in a proper manner. On the contrary, the use of smart contracts will establish a *new, specialized area* of law for lawyers: crypto-law. Lawyers would be able to specialize in smart contract coding and blockchain technology law, thus incorporating the current contract law into the new blockchain language.

E. Enforceability of Smart Contracts

Because this new technology is not fully regulated, and changes are still on-going to how this area should be regulated, there is no absolute assurance how smart contracts will be regulated in the future. However, smart contracts will likely remain an enforceable contract. In order to be enforceable, a smart contract would have to meet all of the traditional requirements of a valid contract. One area that may be especially tricky for a smart contract is showing "mutual assent" to the contract.

In order to be valid, smart contracts (like a traditional contract) will have to be constructed in such a way as to meet long-established legal norms for contracting. The most problematic of these contractual norms for smart contracts to meet is providing a clear manifestation of mutual assent to the contract terms. It is absolutely necessary for each of the parties to understand the terms of the contract. Although this poses a limitation and potential issue for the enforcement of smart contracts, smart contracts will not require any special set of new laws or regulations (theoretically). For regulation purposes, a smart contract is almost identical to a traditional contract. Thus, existing legal principles can be easily adapted or modified to deal precisely with smart contracts.

F. Development of the Professional Sports Industry

With the incorporation of smart contracts into the professional sports industry will come an endless realm of possibilities for developers. As seen from the various examples of crypto-companies currently working to develop useful software with blockchain technology, the blockchain can be used in various aspects of the sports industry. Because this technology is so new, the lack of regulation and insecurity of proper uses, have led to a hinderance of development. This, however, does not mean that companies are ignoring the blockchain technology. Rather, crypto-companies are continuing to develop, modifying their developments based upon rolled out regulations regarding blockchain.

DISADVANTAGES.

Despite the many potential advantages of incorporating smart contracts into the sports industry, there are also several potential drawbacks. These disadvantages, however, offer the potential to further develop the blockchain technology to create a seamless integration.

A. The Use of Cryptocurrency

A major drawback with incorporating smart contracts into the sports agency industry is that the currency must be transferred over the blockchain. As a result, cryptocurrency (such as Bitcoin) must be used. This raises a question of speculation about what professional athlete would trust the volatility of Bitcoin and accept payment in a cryptocurrency. However, even if the blockchain system requires the use of cryptocurrency, there may be a way to convert this digital currency into a fiat currency. All these transfers would occur instantaneously and in a secure manner, but likely with an associated fee. This leads to the question of whether instantaneous transactions outweigh the use of a fiat currency.

B. Smart Contract “Language”

Another potential issue, and perhaps the most stringent, is the technical issue involved with smart contracts. Although it can lead to prominent advantage, the fact that smart contracts are coded language can lead to several disadvantages. If the attorney does not possess the necessary skills to accurately draft a smart contract, the lawyer will need to consult a specialist in the field to avoid any ethical repercussion under the Model Rules of Professional Conduct.

An attorney working on these projects will need to work closely with computer specialists to ensure that the code accurately embodies the natural language, legal terms, and agreements. There may be a disconnect that develops between the plain English terms of the contract and the coded smart contract. If the attorney is unable to successfully code a smart contract himself, it will be crucial to obtain a neutral, trusted third-party representative that can accurately ensure that terms of the smart contract in an unbiased context. This in turn would avoid any disconnect between the data entered as code and the native English contract terms.

C. Necessary Data Conglomerate

Another issue with the incorporation of blockchain into the sports industry is that the blockchain system depends entirely on the idea of data storage. Thus, an industry insider needs to start the process of uploading the necessary data onto the corresponding blockchain. In theory, the use of automated oracles to obtain data on participation and scoring from a number of sources including local news services, the league's own news page, and sports statistics sites is needed to exploit blockchain technology.⁹¹

To explain the above idea in more practical terms, imagine ESPN incorporates all of their professional sports statistics and analytics on the blockchain. Once this information is uploaded to the blockchain, it is safely on the system forever, without the ability to alter the information. Take our example from above with Player X and his contract with a team to pay Player X a bonus of \$250,000 for hitting thirty-five homeruns in the season. ESPN will upload all of the sports statistics (including Player X's number of homeruns) to the blockchain. Once Player X hits homerun number thirty-five, ESPN would then enter that information onto the blockchain. The associated smart contract between the two parties would then pull this information from the corresponding blockchain. Because the

⁹¹ Jon Southurst, *Ex-Rugby Star: Smart Contracts Could Prevent Legal Disputes in Sport*, CoinDesk (2015), <https://www.coindesk.com/ex-rugby-star-smart-contracts-prevent-legal-disputes-sport/> (last visited Jan. 20, 2018).

predetermined conditions would be met by Player X in this situation, the transaction would initiate automatically.

The issue is that a data conglomerate (such as ESPN) is not currently working to develop such a data source on the blockchain. As a result, smart contracts will be unable to properly execute the terms “because blockchain transactions are recorded and verified by consensus,” and thus “are unable to talk to external data feeds without the help of some additional tool. Thus, smart contracts lack the usefulness in the sports world currently.”⁹² What is needed, experts say, are more and better “oracles,” pieces of middleware by which smart contracts can receive, and act on, data from off-chain systems.⁹³ Accordingly, in our example above, ESPN would fulfil this need of a better “oracle” where the smart contracts can receive its data.

D. Lack of Blockchain Regulation

The benefit to the current industry practice of the traditional contract is that there is a sense of regulation among parties. There has been an increasing trend of regulation among sports agents to limit their ability to take advantage of the very competitive market. However, the blockchain technology does not have a comprehensive federal regulation. This is also true for virtual currencies and ICOs, however, “many government bodies - specifically, FinCEN, the Internal Revenue Service (IRS), SEC, CFTC, and Consumer Financial Protection Bureau (CFPB) - have offered guidance and taken limited action.”⁹⁴

E. Electronic Signatures

Since smart contracts are electronic and performed on the blockchain system, there is no physical signature by the parties. Instead, the parties will partake in an electronic signature, which would represent the same obligation and acceptance that a physical signature provides on a traditional contract. Although it is not a physical signature, an electronic signature is still valid resulting from the E-Sign Act. The E-Sign Act provides that:

The federal Electronic Signatures in Global and National Commerce Act (“E-SIGN Act”) generally prohibits courts from denying enforcement of electronic signatures and contracts solely on the basis of their electronic form. The E-SIGN Act also requires that certain conditions be met in electronic transactions, such as consumer notifications in certain cases, and that electronic contracts be held in a form that is retained and reproducible in readable form. Finally, the E-SIGN Act also permits states to develop alternative electronic signature and record laws, such as the Uniform Electronic Transactions Act (“UETA”).⁹⁵

As provided by the E-Sign act, it is evident that the digital or electronic signature will hold just as much power as a physical signature does in association with a traditional contract. However, to avoid the potential regulatory issues regarding electronic signatures, a system can potentially be

⁹² Brian Patrick Eha, *The race to connect smart contracts to the real world*, American Banker (2017), <https://www.americanbanker.com/news/the-race-to-connect-smart-contracts-to-the-real-world> (last visited Jan. 21, 2018).

⁹³ *Id.*

⁹⁴ Trevor I. Kiviat, *Beyond Bitcoin: Issues In Regulating Blockchain Transactions*, 65 DUKE L.J. 569, 589 (2016). <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3827&context=dlj>

⁹⁵ *Id.*

developed to incorporate a physical signature into the smart contract. For example, the parties may physically sign a printed affidavit that ensures the parties agree to the terms, the terms are exactly what they have negotiated for, and that both parties fully understand the terms of the contract. In turn, this physical document could potentially be physically uploaded to the executed smart contract, ensuring reliability and execution.

F. Lack of Company Development

Although it is evident that there are at least some, although few, crypto-companies strategizing with the incorporation of smart contracts into the sports industry, there is no guarantee that the platforms will be developed. Without getting into too much of the ICO specifics, when a crypto-company issues an ICO, that company may (and likely) does not have a developed software platform. Instead, they have the idea of the platform, and then turn to a public crowdfunding (ICO) to raise money to help develop the desired software. This is where the skepticism arises; these crypto-companies are raising tens of millions of dollars but have not developed software to support their ideas. As such, the investors are taking a huge risk that the crypto-company is trustworthy and follows through with their business development plan.

Conclusion:

The professional sports industry plays a major role in our society today and will continue to grow in the future. It is an industry always looking to improve upon itself, striving to become a more successful and profitable business. Blockchain, and more specifically the use of smart contracts, has created a tremendous amount of excitement among companies from a strategic standpoint. Smart contracts allow the potential for many strategic benefits within the professional sports industry, which the use of traditional contracts do not. Incorporating smart contracts into the sports industry can and likely will revolutionize and simplify a nearly trillion-dollar industry. The only questions are when it will be done and who will be the first to do it successfully.