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Commentary

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"Look, I know I'm not the wizard you were expecting, but I might just be the wizard you need."

— Oz The Great and Powerful.

Recently, one of the first conferences to focus exclusively on blockchain technology — *Blockchain for Wall Street* — was held at the New York Law School. The setting was somewhat ironic given that the lawyers in attendance were outnumbered by computer programmers and deep-pocket investors who grappled over the evolutionary path blockchain will follow due to its infamous start as the underlying technology for the original cryptocurrency, Bitcoin. While some speakers promised a brighter future in the digital world of high-value currency transactions, it was clear that the underlying technology itself was viewed by many as a valuable tool that could be adapted across many industries.

Because blockchain technology is "secure by design," decentralized and scalable, blockchain has already outgrown its nefarious past and has seen explosive growth in core, traditional industries, such as banking, medical records, finance and credit transactions. A type of blockchain application, known as a smart contract, is particularly attractive to the insurance industry. However, wide participation by insurance insiders and the professionals that serve them, such as computer scientists and lawyers, will help to ensure that smart contracts are enforceable, affordable and predictable. The joining of those forces — specifically, computer programmers and lawyers — will pave the way for blockchain to become a major disruptor in the insurance industry.

I. A Brief Definition of Blockchain and Smart Contracts

Blockchain, at its most basic, is a tamper-proof, continually updated ledger of transactions distributed over the internet and secured through cryptography. The most distinguishing feature of a blockchain system is its lack of a central authority. All transactions are stored and distributed for all network participants to see chronologically. The network itself verifies any information added to a "block" and, if accepted, that information is processed throughout the blockchain. Conversely, if anyone alters any earlier blocks or "nodes," that user's version of the chain will no longer be consistent with the other distributed network locations. Therefore, the blockchain enables unrelated parties to access and verify the same data while simultaneously creating an auditable record of all transactions. The *Blockchain for Wall Street* conference, with

its 200-plus attendees, was evidence that investors and technology companies from around the world are prepared to move beyond the proof-of-concept stage and are eager to integrate the technology into existing business processes.

The insurance community is watching how the finance sector is incorporating blockchain with an emphasis on the promise of "smart contracts" — a type of software run on the blockchain that executes digital terms without human intervention once the coded conditions are satisfied. Smart contracts enable automated negotiation, establishment of protocols and terms, performance and contract enforcement, without need for trusted intermediaries to administer those contracts and with lower transactions costs and reduced risk of fraud. Smart contracts have the potential to change the way the insurance industry conducts business and to open new markets previously underserved by the industry.

II. Blockchain and the Insurance Market

Although generous in its scope, the *Blockchain for Wall Street* conference only scratched the surface of how the technology will reshape the $1.2 trillion insurance markets. In fact, recent studies have acknowledged the broad impact blockchain technology could have on the structure of the industry as a whole. A McKinsey & Company report from July 2016, for example, noted: "While the insurance industry (in terms of technology adoption) lags behind banking, it is nevertheless uniquely positioned to benefit from blockchain technology. Blockchain can address the competitive challenges many incumbents face, including poor customer engagement, limited growth in mature markets, and the trends of digitization."[1] Insurers may lag behind the banking, healthcare and "internet of things" consortiums that have developed as a result of blockchain, but there has been a more recent and consistent surge in insurance technology investment spearheaded by the potential of the smart contract. The ability of smart contracts to automate processes will lead to the development of new products, streamline the functioning of existing markets and allow insurers to tap into emerging markets.

The reinsurance industry in particular has taken notice and recently launched the Blockchain Insurance Industry Initiative (B3i) led by Swiss Re, Allianz, Aegon, Munich Re and Zurich to "explore the potential of distributed ledger technologies to better serve clients through faster, more convenient and secure services."[2] The most intriguing aspect of the initiative's focus, however, lies not in process efficiencies, but rather in what the consortium intends to explore (as detailed in a press release which announced formation of the consortium): "Blockchain offers huge potential for enabling digital contracts and transactions amongst multiple parties to be executed in a secure, transparent and auditable way. By establishing trusted relationships among all participants, Blockchain has the potential to provide a consistent, automatic contract execution environment where transactions and contracts are stored on a shared ledger, thus reducing the administrative workload of multiple stakeholders to ensure consistency and execution."[3] The first results of the consortium's study are expected to be released in June of this year. A recent PricewaterhouseCoopers ("PwC") report demonstrated that blockchain technology could be deployed across the reinsurance and retrocessional value chain, where treaties are processed, notifications are provided and premium/commission payments are made. Overall, according to PwC, blockchain solutions could lead to a 15% to 25% decrease in industry-wide expenses, a savings estimated anywhere from $5 billion to $10 billion a year.[4]

Blockchain is also seen as a means to creating entirely new insurance markets, and this has generated increased venture capital into the "insur-tech" portion of the industry. It has been reported that between 2010 and 2015 only 13 percent of insurer investment was made in insurance technology companies. That amount is rising (some sources pointing to a $1.2 billion investment surge since 2015), as more insur-tech startups seek to enter the lucrative insurance marketplace.[5] Many of these companies are looking to smart contracts as a means of automating the claims-settlement process with an emphasis on faster payment times and increased customer satisfaction. Investors are also looking at mobile phone insurance applications based on smart contract software running on a blockchain as a means to reach underserved markets through "microinsurance."[6] According to McKinsey & Company, the blockchain can serve to automate underwriting and claims handling in such markets (farmers, for example) by providing more reliable data sources.[7]

What is problematic about these developments is an almost exclusive reliance on technical specialists to

create the software that will apply smart contracts to a blockchain. Many are calling upon the insurance industry to work with blockchain-focused "accelerators and incubators" to form "developer communities." This product-centric approach may ultimately frustrate greater innovations through the use of smart contracts. Ultimately, the meaning and efficacy of any contract term – whether contained in traditional or smart contracts – will need to be understood and vetted in the real world and not just in the context of computer code. Unless the legal community serving the insurance industry is included among the stakeholders in what could become a blockchain-driven insurance industry, the reliability offered by blockchain may be offset by the lack of predictability as to the legal impact of smart contract terms.

III. A Collaborative Effort

Lawyers and computer programmers must partner across the electronic agreement spectrum from development through implementation. The development of smart contracts cannot be left solely to those with a proficiency in computer languages. Whereas programmers understand the technical nuances of the bytes that will form a smart contract, any contractual agreement must still reflect the contracting parties' intentions in an unambiguous manner. Many insurance contracts, for example, are the product of high-level underwriting. In addition, the interpretation of the variety of exclusions, terms and conditions forming the contract can be triggered under varied and complex factual scenarios. How will such terminology function in a digital environment? The consortiums and think-tanks forming in the traditional insurance and insur-tech space should partner with insurance legal counsel to identify which business sectors are capable of operating in a digital world and which relationships may defy digitization.

Insurers and reinsurers should call upon counsel to ensure that contractual performance through coding complies with developed legal standards. Once a smart contract is deployed on the blockchain, lawyers will need to address implementation issues, including possible jurisdictional disputes and, ultimately, whether a smart contract can be found enforceable in a court of law. In addition, lawyers will need to address the decentralized nature of distributed ledger technology and how this will impact upon insurance regulations and the ability of regulators to control new insurance products that might emerge through smart contracts.

A recent Wall Street Journal and Deloitte article appearing in the CIO Journal, entitled, "Blockchain Adoption Varies by Industry" pointed out that federal regulations will be needed to support the use of blockchain for business purposes such as contracts: "... affirmation that private blockchain activity represents an inherently reliable confirmation, or that a smart contract represents a legal contract in a court of law, could encourage businesses to deploy blockchain technology. Such developments would likely require changes in regulations, laws, practices, and protocols."[8] Those changes are starting to take place. On February 6, 2017, HB 2417 was introduced in the Arizona Legislature. It states, in part: "Smart contracts may exist in commerce. A contract relating to a transaction may not be denied legal effect, validity or enforceability solely because that contract contains a smart contract term." The proposed bill also addresses ownership of information secured by a blockchain. This proposal is similar to another in Vermont that would make blockchain records admissible as evidence in court.[9] In addition, two U.S. representatives have recently launched a bipartisan Congressional Blockchain Caucus. Its aim is to help policymakers create regulatory policies surrounding blockchain technology.[10]

Greater implementation of blockchain technology in the insurance industry will require collaborative efforts among insurers, technological experts, lawyers and government officials. Smart contracts may be characterized by "digital trust," but the "trust" component is complicated and requires input from all stakeholders. This may seem like an unnecessary hurdle to programmers and investors looking to build businesses, but it is really just a cautionary note — the tech community may not have expected there to be a role in the digitization of insurance for lawyers, but they may just be the "wizards" the industry needs to make smart contracts a workable, efficient and effective business tool in the next generation of insurance products and processes.

Endnotes

1. "Blockchain In Insurance – Opportunity or Threat?", by Johannes-Tobias Lorenz, McKinsey & Company, July, 2016.

2. "Technology in Insurance: Insurers and Reinsurers Launch Blockchain Initiative," Insurance – Canada, www.insurance-canada.ca/newsletter, 2016. Following formation of the blockchain initiative B3i, other reinsurers have joined the consortium, including: Achmea, Ageas, Generali, Hannover Re, Liberty Mutual, RGA, Scor, Sompo Japan Nipponkoa Insurance, Tokio Marine Holdings and XL Catlin.

3. *Id.*

4. "Blockchain: The $5 Billion Opportunity for Reinsurers," PricewaterhouseCoopers ("PwC"), "Chain Reaction: How Blackchain Technology Might Transform Wholesale Insurance."

5. "Blockchain Technology and the Insurance Industry," by Richard Kastelein, Blockchain News, January 19, 2016.

6. The International Association of Insurance Supervisors defines microinsurance as "protection of low income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of the risk involved." Microinsurance involves billions of clients in large underserved markets who need but cannot access commercial insurance. "Lloyd's 360 Risk Insight Report. Developing Countries, Exploring Opportunities in Microinsurance", The MicroInsurance Centre.

7. "Blockchain in Insurance – Opportunity or Threat?", McKinsey & Company, July 2016.

8. "Blockchain Adoption Varies By Industry," The Wall Street Journal/CIO Journal, Deloitte, January 30, 2017.

9. "Arizona Bill Would Make Blockchain Smart Contracts 'Legal'", by Stan Higgins, CoinDesk, February 7, 2017.

10. "Congressional Caucus Launched to Study Digital Currencies and Blockchain," Bitcoin.com, February 17, 2017. The Caucus was launched by U.S. Representatives Jared Polis (D-Colo.) and David Schweikert (R-Ariz.). ■

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