

Regulatory Environment: What Board Directors Need to Know About Blockchain



Board members, selected for their professional acumen and expertise, are responsible for informed oversight of their companies. This is their fiduciary duty. However, few are knowledgeable or experienced in assessing new, relevant technologies. Blockchain, a part of Web 3.0, is the latest digital technology on the doorstep of corporations worldwide. Directors' abilities to oversee company strategy, risk, and capital allocation are critical in this rapidly changing landscape. In a 2022 study from Deloitte, companies with a tech-savvy board performed better. Specifically, such companies experienced, on average, 5% greater revenue growth over a three-year period, and 8% better stock performance year over year, over three-, five-, and 10-year periods, than companies with non-tech-savvy boards.ⁱ Board directors have a duty to their companies and shareholders to be well informed.

Currently, 81 of the world's top 100 public companies by market capitalization are in various stages of using blockchain technology.

BLOCKCHAIN BASICS AND VALUE PROPOSITION

Blockchain is an emerging technology that helps improve transacting, tracking, and recording of shared data. Instead of storing data on-premises, in the cloud or on centralized platforms, blockchain is a distributed ledger system that stores data across a network of decentralized computers ("nodes") connected only by the internet. Users can transact one-on-one, completely bypassing centralized intermediaries.



Because the recorded data are decentralized across a network of nodes, blockchain provides many advantages and use cases:

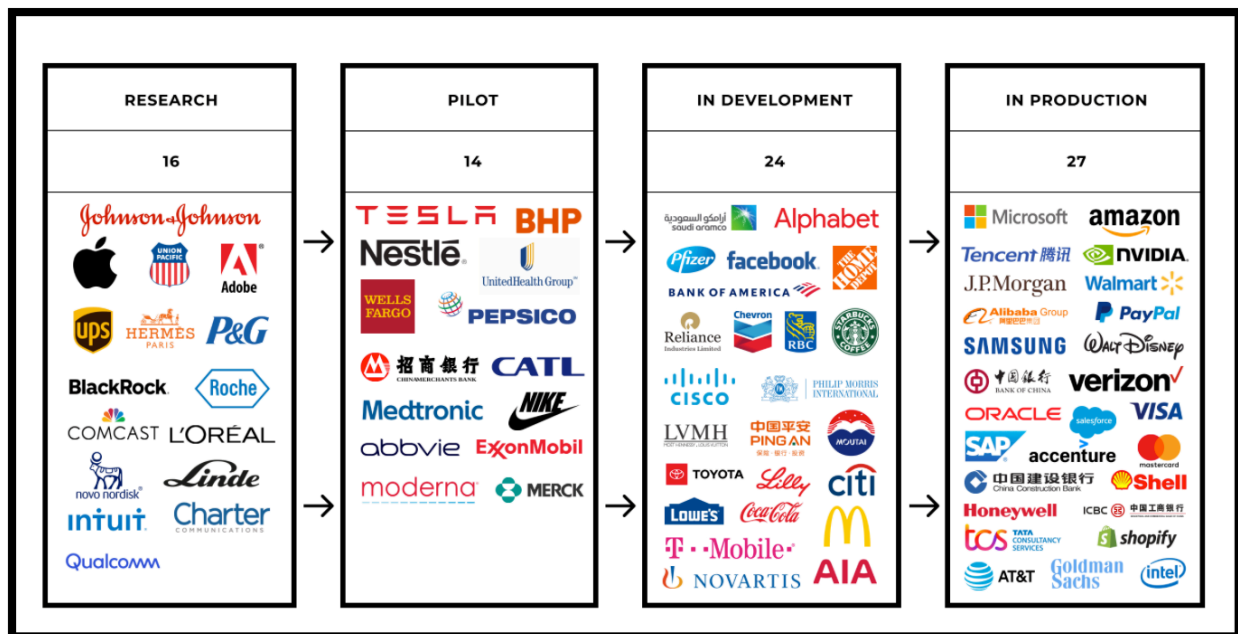
- **Better security:** A distributed ledger is more resilient to hacks, outages and attacks.
- **Immutability:** Once data is recorded on a blockchain, it cannot be altered or destroyed easily, providing a single source of truth. If companies are handling transactions, such as payments, with unknown parties, immutability can be important.
- **Reduced costs:** Given that the recorded data are immutable, it is easier to reconcile paper intensive processes in areas such as supply chains,

identity verification, payments, and real estate transactions. Audit, legal, compliance and other operating costs can also be reduced by having a consistent source of truth and streamlined processes.

- **Flexibility:** Blockchain can be used for open public protocols, or private and permissioned trusted networks. Cryptocurrency blockchains tend to be public, which allows anyone to participate pseudo-anonymously. However, public blockchains can be harder to govern given the challenges of governing large populations. Many corporate blockchains are private, where all participants are invited, and each is bound

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BLOCKCHAIN ADOPTION STAGE OF TOP INSTITUTIONS



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by a set of agreed upon governance protocols. Permissioned blockchains have properties of both public and private blockchains.

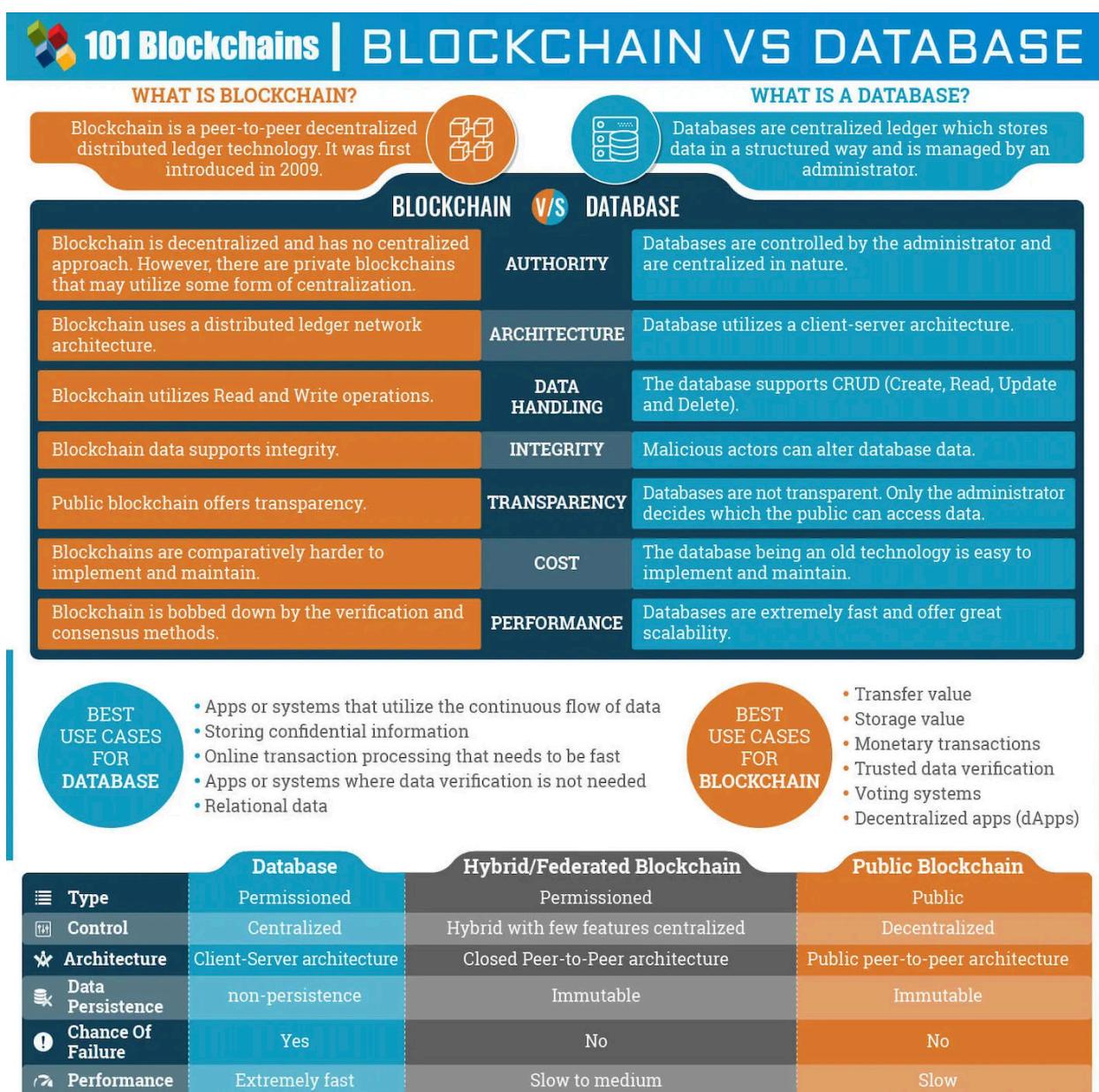
- **Democratic:** Many blockchains (typically public) enable users to be direct economic participants on, and beneficiaries of, their blockchain (i.e., more active users reap greater benefits). They allow for individual ownership of assets, peer-to-peer transacting, and the ability to build smart contracts and applications that power new activities. Centralized internet platforms such as Google or Facebook do not reward users or

let anyone build, but instead capitalize on user activity by selling ads.

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BLOCKCHAIN VS. CENTRALIZED DATABASES

Although blockchain is a newer software development, it is still considered a database technology. However, blockchain data storage is decentralized, unlike the more traditional



centralized database. These two methods for storing data bring strengths and weaknesses that are important to understand before committing to a blockchain solution. Simplistically, traditional databases are faster at handling high transaction throughput and at storing large volumes of data. However, traditional, centralized databases are susceptible to both outside hackers and internal bad actors.

Blockchains often process data more slowly because the network of nodes needs to achieve consensus about adding each new block of data. That said, they excel when trusting a single source of truth is not available or inconvenient but there remains a need for a resilient security model, such as among disparate participants over the internet. In some instances, companies create hybrid blockchain-database solutions to get the best of both options. The high-level chart below provides specific use cases for both solutions. Any company evaluating the two options should conduct detailed expert diligence to ensure an optimal outcome.

KEY CRYPTOASSETS AND APPLICATIONS BUILT ON THE BLOCKCHAIN

Blockchain provides effective data storage and management capabilities. It also provides a building foundation for many cryptoassets through tokenization – creating unique digital representations of assets to make it easier to establish ownership and easier to transfer over the internet. Blockchain is also the foundation for smart contract applications and rapidly growing DeFi, fueling the growth of many new businesses.

CRYPTOCURRENCIES

A Gartner study in fall 2021 stated that nearly half of finance leaders plan to assess digital currencies for business in 2022.ⁱⁱⁱ Bitcoin is currently the most prominent cryptocurrency with approximately 40% of the market. Some examples of corporate use cases include:

- JP Morgan Chase is launching the first-ever major cryptocurrency backed by a U.S. bank, dubbed “JPM Coin” to instantly settle payments between clients.

Companies operating in the U.S. financial sector are dealing with a fragmented regulatory environment in its infancy.



- Hong Kong base Pavilion Hotel and Resorts accepts 40 different crypto tokens.
- Visa announced over \$1 billion was spent using crypto-linked Visa cards in the first half of 2021.
- Starbucks and AT&T now allow customers to pay in cryptocurrency.
- 58% of multinational companies are using at least one cryptocurrency.^{iv}

Companies operating in the U.S. financial sector are dealing with a fragmented regulatory environment in its infancy. The Securities and Exchange Commission (SEC) sees tokens as securities, the Commodity Futures Trading Commission (CFTC) sees them as commodities, and the Internal Revenue Service (IRS) treats them as taxable assets (the Treasury Department now requires any cryptocurrency transfer worth \$10,000 or more to be reported to the IRS).^v Other regulations to emerge include the Anti-Money Laundering Act of 2020, which imposes regulations on the use of cryptocurrencies to avoid bad actors and money laundering.

Different regulators and policy makers use different terminology that can get confusing. Digital assets, virtual assets, digital tokens are some examples of monikers that are used.



Other countries are further along the crypto-asset learning curve. Countries within the European Union will be regulated by “MiCAR” (likely starting in late 2023) with guidelines for companies issuing cryptoassets or providing services related to cryptoassets. The “Distributed Ledger Technology (DLT) Pilot,” also in the EU, is a program to develop trading and settlement for tokenized securities and other regulated financial instruments. Japan and Singapore both have cryptoassets initiatives and regulations that are updated continuously, and Japan is also testing a central bank digital currency, as are many other jurisdictions.

Back in the U.S., President Biden issued an Executive Order in March 2022 asking numerous government agencies to conduct studies on cryptoassets and prepare reports with their findings. If resulting regulations are done well, “the United States can affirm its leadership position in blockchain development for the financial services industry.”^{vi}

A quick note to define cryptocurrencies versus cryptoassets: Cryptoassets is the more inclusive category, with cryptocurrencies being a subset of cryptoassets that refers specifically to a type of token designed to act like a means of payment. Different regulators and policy makers use different terminology that can get confusing. Digital assets, virtual assets, digital tokens are some examples of monikers that are used.

NON-FUNGIBLE TOKENS

A non-fungible token (NFT), is simply a token that is digitally unique because of how the data unit is stored on the blockchain. The data unit, or token, has a unique identifier that allows it to be recorded and stored as a single asset, rather than amalgamated into a single account like fungible tokens.

Numerous corporations have issued NFTs for branding, product or experiential purposes, and artists can now sell music or digital art as NFTs directly to consumers. NFTs can also be used to authenticate non-digital assets. Some recent examples of NFT use cases include:

- Campbell Soup Company sold 100 digital art NFTs to celebrate their new soup can design.
- Adidas sold 30,000 NFTs (\$22 million) linked to exclusive clothes, shoes, and online experiences.
- The NBA’s platform for NFT basketball cards processed \$250M of sales in February of 2021.
- Asprey has announced it will use NFT’s to authenticate its jewelry.

Metaverses are developed with NFTs. Metaverses are online worlds for gaming, socializing, shopping, working, or sharing experiences. NFT buyers can acquire virtual real estate, sell products in stores (or rent out their stores) and stage live events. An NFT collector recently purchased a plot (i.e., pixels) of land in Sandbox (a metaverse) next to Snoop Dogg’s virtual palace for \$450,000.

While many of these initial NFTs issued may be speculative and volatile, the underlying capability of NFTs supports broader and longer-term adoption.

UTILITY TOKENS

Utility tokens are tokens issued for products or services on a blockchain. When sold prior to the launch of the blockchain, they often fund development and are used once the blockchain is operational as the cryptocurrency to secure and incentivize behavior on the network, helping to create an internal economy within the blockchain ecosystem. The value of the token will increase with the popularity of the blockchain, providing appreciation for the early token users and holders.

SECURITY TOKENS

Security tokens are issued by blockchain companies in an ICO, but instead of receiving product or promotions (like a utility token), they represent actual ownership shares of a company developing the blockchain or some other ownership in the capital stack. As a security token holder, owners can be shareholders and have more say in the company's decisions.

STABLECOINS

A stablecoin is a type of cryptoasset linked through one of several techniques to the value of another asset or basket of assets, though mostly commonly to a fiat currency such as the U.S. dollar. It can also be linked to commodities such as precious metals. This linkage prevents the volatility often seen in cryptocurrencies (i.e., Bitcoin), while preserving key benefits of a blockchain token. Given their lower volatility, stablecoins have been rapidly adopted in the DeFi space and as a means of payment. The President's Working Group issued a paper in the fall of 2021 discussing stablecoins.^{vii}

CENTRAL BANK DIGITAL CURRENCIES

A central bank digital currency (CBDC) is the digital form of a country's fiat currency issued by the central bank. Examples are the Digital Yuan, from China, and the Digital Sand Dollar, from the Bahamas. Many countries are currently evaluating how CBDC's could affect their economies, existing financial networks, and financial inclusion and stability. The U.S. Federal Reserve Board recently issued a paper on CBDC regarding the domestic payments system, looking at the benefits and risks.

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SMART CONTRACTS

Smart legal contracts built on the blockchain are self-executing contracts based on if/then conditions. For example, if my airline ticket is cancelled, my airline insurance will automatically issue me a refund. No human intervention is necessary if these conditions are articulated in the smart contract.

Corporate legal departments have been slow to adopt smart contracts and the legal status of smart contracts remains uncertain in most jurisdictions around the world. However, use cases in real estate (e.g., automated mortgage payments, releases of property liens), and supply chains (verifying inventory deliveries and vendor identification) are gaining traction. Benefits of adopting smart contracts include:

- Significant efficiencies through reduction in the use of human capital and intermediaries
- Data security and privacy through encryption
- Generation of high quality, accessible data that is continuously verified
- Reduction of mistrust through oracles (neutral third parties that authenticate transactions)

Board directors are responsible for the oversight of business strategy, risk management and operational competency. As a result, they must be informed of senior management's blockchain plans and activities.



DEFI

DeFi stands for “decentralized finance.” This means there is no company, bank, or fund responsible for personal money - only the individual has access. In this model, there is no need for bank-issued credit cards or checks. By utilizing decentralized apps, or dApps, individuals can exchange, lend, borrow, and trade cryptoassets without a third-party intermediary. DeFi's benefits include faster transactions, lower transaction fees, higher returns, and 24/7 exchanges, as well as others. Although DeFi is a rapidly emerging space, it can be argued it is the culmination of trends toward greater automation in financial services beginning in the 1990's. It is also important to note that not all assets that are traded in DeFi are financial instruments.

However, there remains debate about whether and how DeFi should be regulated by the government. This means that the code is the only form of consumer protection, leaving assets vulnerable

due to poorly written code, interactions with bad actors, or simply losing your private key (password). As a result, the benefits of DeFi need to be weighed against the risks.

CONSIDERATIONS FOR CORPORATE BOARD DIRECTORS

Board directors are responsible for the oversight of business strategy, risk management and operational competency. As a result, they must be informed of senior management's blockchain plans and activities.

Business Strategy: Capital allocation is critical to achieving strategic goals, and large investments in technology must be assessed carefully. When considering your company's readiness to adopt blockchain, some questions to consider include:

- Is blockchain the right technology for your use cases?
- How will blockchain impact your industry?
- Is your business moving to the blockchain? Will key partners require you to adopt it?
- Is your business being disrupted by blockchain?
- What is the optimal timing? Do you want to be an early adopter or a fast follower?
- What are the costs and benefits of blockchain adoption?

Blockchain Governance: Many corporate blockchains are private or permissioned groups that include data from multiple suppliers and partners. Disagreement among members can lead to long resolution processes crossing numerous jurisdictions. As a result, it is critical at formation to create governance protocols that address risks and provide adaptability. Issues to consider when creating a private/permissioned blockchain are:

- Compliance: Regulatory data compliance is necessary across all necessary jurisdictions, such as GDPR, CCPA, FINRA and other international equivalents.
- Data governance: Data privacy must be protected by managing which partners have access to what data, and how data is disposed of when a partner leaves the blockchain, or the blockchain is no longer in use.

- **Collusion:** If competing corporations create a joint project and share data on a private blockchain, it is important to prevent regulatory concerns of collusion.
- **Bad actors:** Public blockchains may not follow any governance, and participants can remain anonymous. In this scenario, risks include interacting with bad actors, money laundering and theft.

Financial reporting: Many corporations are using cryptoassets and NFTs. Board members need to feel confident that their internal teams and auditors have adequate expertise. Directors should be thinking about the following questions:

- Can your business take payments in cryptoassets? Are customers or new business lines requiring acceptance of cryptoassets?
- How will regulatory changes impact the value of cryptocurrencies and other cryptoassets on the balance sheet?
- How much volatility in cryptocurrency prices is acceptable in your organization?
- How will your company stay on top of regulatory changes?
- Are your auditors knowledgeable about cryptocurrencies and other crypto assets?
- Are appropriate internal processes and controls in place?
- Can your business meet the reporting requirements in the different jurisdictions where you operate?

Smart contracts: Smart contracts are not yet widely adopted. However, board members should feel confident that the legal department is current with industry levels of smart contract adoption, and aware of any use of smart contracts internally (e.g., occurring “under the radar.”) Some questions to ask include:

- What is our position regarding smart contract legality?
- How will smart contracts impact legal operations? Is the company/legal department prepared?
- Have we used smart contracts already? How many and where?
- How will data privacy and data retention be governed?

Technological Innovation: Adopting blockchain, like any technology, requires commitment and resources. Board members need to understand the scope of the project and the cost-benefit analysis.

Things to consider include:

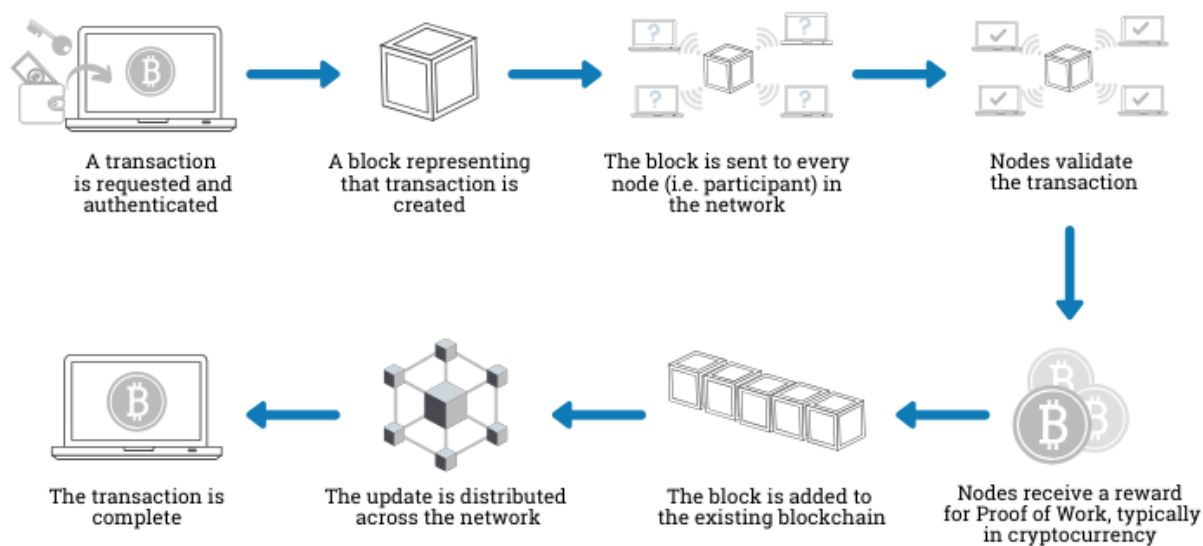
- **Blockchain selection and governance:** Does the blockchain environment being evaluated provide robust decentralization or, alternatively, on-chain governance to prevent collusion among participants?
- **Oversight:** What oversight will the board have regarding emerging technology? Do directors understand enough to make informed decisions? Which officer of the company will be accountable?
- **Integrations:** How would blockchain integrate with existing technology? Who in the company has the expertise to assess?
- **Experimentation:** Do you have the capability to conduct pilot tests and experimentation within your organization?
- **Scalability:** When participation on a blockchain grows, more nodes are added to the ledger. This requires more resources, including increased energy consumption. What are the costs and ESG implications of this growth?
- **Security, business continuity and disaster recovery:** Data stored on blockchain is more secure than other data storage options. Nevertheless, what is the security and disaster recovery plan?

CONCLUSION

Blockchain adoption has grown exponentially over the past several years. It has provided the foundation for the emergence of entirely new use cases, products, and technology-based ecosystems around the world. As with any emerging technology, there continues to be significant innovation and discovery, as well as inherent volatility and risks. Directors and officers should consider a strategy of ongoing assessment and testing within their organizations to ensure that they are well informed and can optimize their strategy and timing regarding adoption.

APPENDIX 1

How Blockchain Works



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APPENDIX 2

End Notes

ⁱ <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/center-for-board-effectiveness/us-cbe-otba-tech-savy-board-members.pdf>

ⁱⁱ <https://forkast.news/81-of-top-100-companies-use-blockchain-technology-blockdata/>

ⁱⁱⁱ <https://www.gartner.com/en/newsroom/press-releases/2021-10-12-gartner-says-nearly-half-of-finance-leaders-plan-to-assess-digital-currencies-for-business-in-2022>

^{iv} <https://markets.businessinsider.com/news/currencies/multinationals-cryptocurrencies-bitcoin-ether-study-cross-borders-transactions-pymnts-2021-11>

^v <https://legal.thomsonreuters.com/en/insights/articles/how-will-emerging-us-regulations-impact-cryptocurrencies>

^{vi} <https://www.cravath.com/news/blockchain-in-the-banking-sector-a-review-of-the-landscape-and-opportunities.html>

^{vii} <https://home.treasury.gov/news/press-releases/jy0456>

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