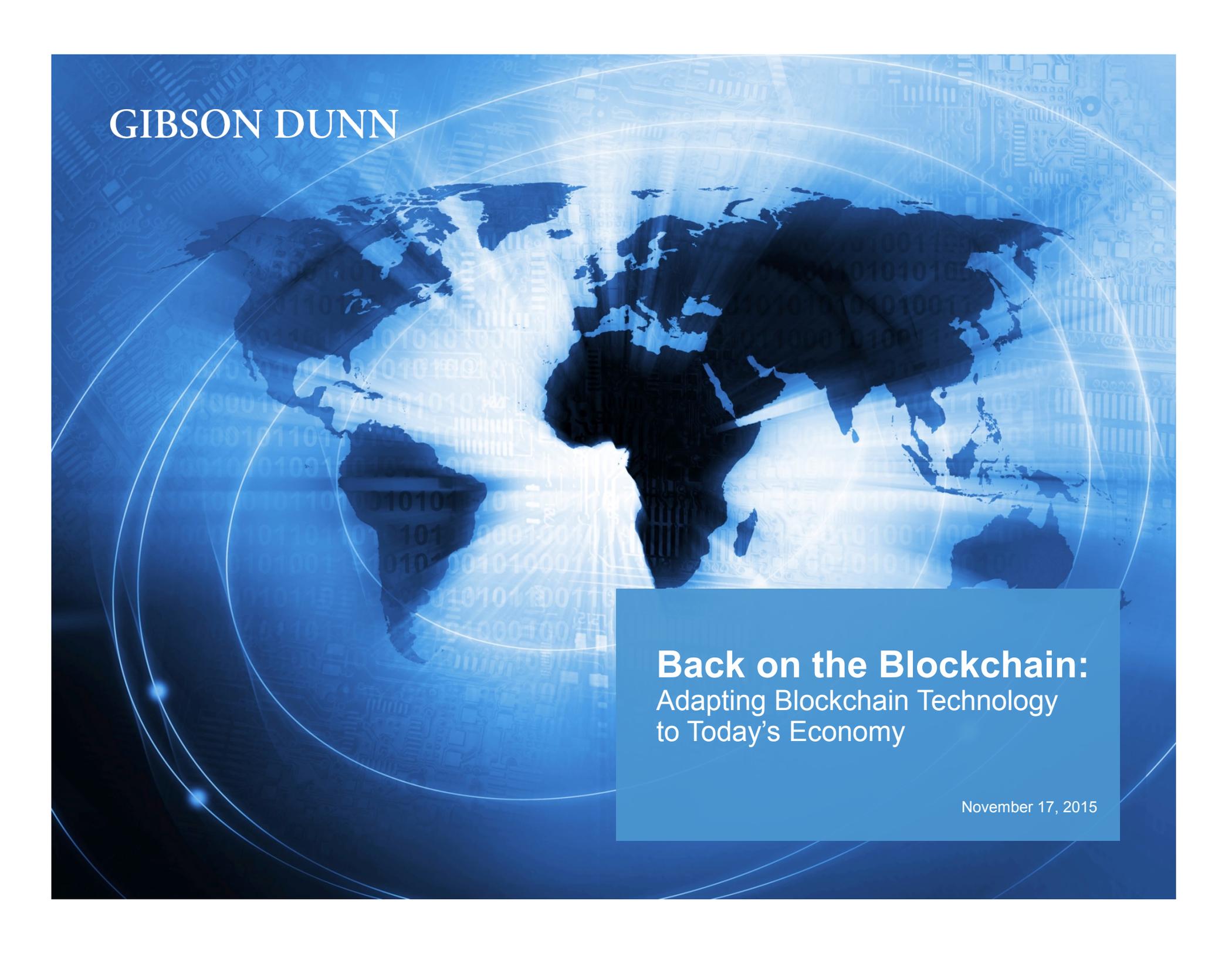


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A blue-toned world map is centered on the slide. The map is overlaid with a grid of binary code (0s and 1s) and faint circuit board patterns. Two glowing white arcs, resembling latitude or longitude lines, curve around the map. The overall aesthetic is high-tech and digital.

**Back on the Blockchain:**  
Adapting Blockchain Technology  
to Today's Economy

November 17, 2015

## MCLE Certification Information

- Most participants should anticipate receiving their certificate of attendance in 3 to 4 weeks following the webcast.
- Virginia Bar members should anticipate receiving their certificate of attendance in 6 weeks following the webcast.
- Questions regarding MCLE information should be directed to Jeanine McKeown (National Training Administrator) at 213-229-7140 or [jmckeown@gibsondunn.com](mailto:jmckeown@gibsondunn.com).

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- 2. Adaptation to Today's Economy**
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**Evolution From Bitcoin to  
Blockchain Technology**



# Evolution

## From Bitcoin to Blockchain

- Created in 2008, bitcoin is a decentralized digital currency and the first successful implementation of a distributed cryptocurrency.
- Decentralized digital currencies are digital representations of value that function as a medium of exchange and that can be transferred, stored and traded electronically on a decentralized peer-to-peer payment system. In other words, the issuance of digital currency is carried out collectively by a distributed network.
- Decentralized digital currencies do not have legal tender status as they are not backed by any government and are not pegged to any currency. No one owns the Bitcoin network.
- Bitcoin, like many decentralized digital currencies, is “pseudonymous” as a transaction record of every bitcoin and every bitcoin user’s encrypted identity is recorded on a distributed public ledger, the Bitcoin blockchain. The blockchain records and validates through its distributed ledger, every digital currency transaction. It grows as completed blocks are connected to one another in a linear, chronological order.
- The blockchain technology behind bitcoin could have a dramatic impact on the way the financial services industry and other industries operate. For example, twenty-two banks are already part of a consortium to explore potential uses of blockchain technology across the financial services sector.

### *Virtual Currency vs. Digital Currency vs. Cryptocurrency*

#### Virtual currencies

Often defined as “not based in physical reality” that are not intended for use in “real life” for “real assets” (e.g., online gaming currencies such as Linden Dollars)

#### Digital currencies

Can be used to facilitate the payment for physical goods and services in real life

#### Cryptocurrencies

A subset of digital currencies that use cryptography to secure the transactions and control the creation of new units (e.g., bitcoin)

# Evolution

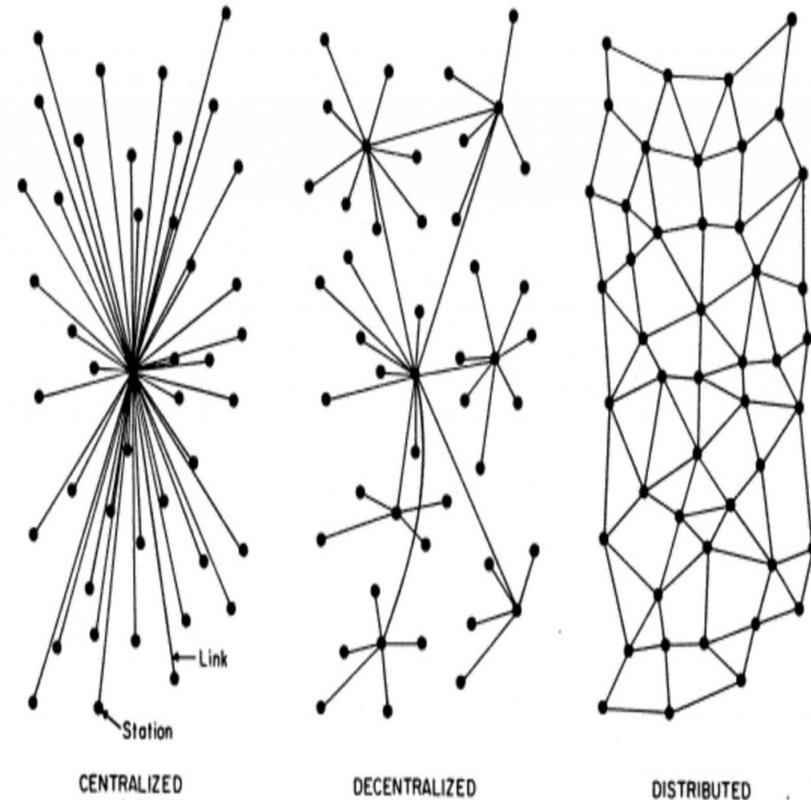
## Blockchain 101

- Decentralized digital currency transactions, such as bitcoin, operate on a public, **decentralized network**. Transactions represent a transfer of ownership of bitcoin balances and are recorded on a distributed public ledger (*i.e.*, the **Bitcoin blockchain**).
- Every time a transaction occurs between parties in the network, the encrypted transactions are collected in a block and verified and validated.
- Blocks are verified and validated by **miners** through a process called mining. Miners use specialized software to verify transactions and are compensated (*e.g.*, in digital currency).
- After a block has been verified (approximately every 10 minutes), it is connected to the previously verified block creating a blockchain which is a log of all transactions that were ever verified on the bitcoin network.
- The grouping of blocks occurs according to a protocol (*e.g.*, the Bitcoin protocol) and become part of the distributed public ledger. There are a number of digital currencies other than bitcoin that are based on top of the Bitcoin blockchain, while others have created their own blockchains based off the Bitcoin protocol.
- Ultimately, it is the underlying blockchain technology and the architecture used that enables these decentralized peer-to-peer payments on the distributed network without the involvement of a centralized authority or third party financial institution.

# Evolution

## How does a digital currency transaction work on the Bitcoin blockchain?

- If you want to send bitcoins to someone, you need:
  - **Input:** A record of which bitcoin address was used to send the bitcoins to your address in the first place
  - **Amount:** The amount of bitcoins that you want to send
  - **Output:** The address of the person you are sending to
  - **Your private key**
- A bitcoin address is a randomly generated sequence of letters and numbers, as is the private key (although the private key is kept secret). Everyone can determine what is in your bitcoin address, but only you can unlock it to take things out (using the private key).
- To send the bitcoins you would use your private key to sign a message with Input, Amount and Output and send them from your online bitcoin wallet (e.g., Coinbase) to the wider bitcoin network. From there the verification process occurs by the miners.



Source: On Distributed Communications Networks, Paul Baran, 1962

# Evolution

## Blockchain 101

- While the original design of the Bitcoin blockchain was to allow for these peer-to-peer transfers, the Bitcoin protocol allows for storage of small amounts of metadata on the Bitcoin blockchain which can be used to represent instructions.
- Ultimately, a blockchain is a secure data structure tool that serves as a secure database. A blockchain could register ownership and transfer of any digital asset.
- In the coming years, “**colored coins**” could be exchanged with specific attributes, used to represent anything and built on top of the Bitcoin blockchain. However, similar asset manipulation data can occur on blockchains other than the Bitcoin blockchain.
- Financial institutions and others are working to use the distributed ledger technology of the Bitcoin blockchain or by creating their own blockchains to explore opportunities relating to the technology.
  - For example, Digital Assets Holdings plans to launch these limited access models called **permissioned ledgers** for products such as corporate syndicated loans, private stock and repurchase agreements.
  - Chain.com is considering **sidechains**: blockchains that connect to the Bitcoin blockchain and are tailored for specific industries.

“I would take [blockchain] about as seriously as you should’ve taken the concept of the Internet in the early 1990s. It’s a big deal and it is going to change the way that our financial world operates.”

— Blythe Masters  
CEO of Digital Asset Holdings

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**Adaptation to Today's  
Economy**

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# Adaptation to Today's Economy

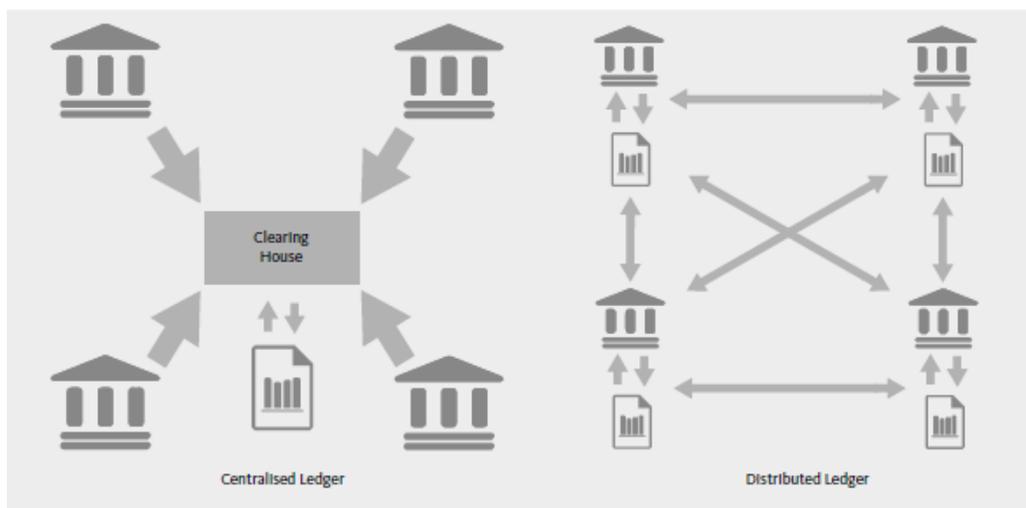
## Applications

1. **Settlement and Clearing**
2. **Asset Ownership**
3. **Cross Currency Payment Networks**
4. **Smart Contracts and “Device Democracy”**
5. **Emerging Markets**

# Adaptation to Today's Economy

## Settlement and Clearing

- Distributed ledgers eliminate the need for central authorities to verify ownership and clear transactions. These distributed ledgers can be open, verifying anonymous actors, or they can be part of a closed network requiring actors to be identified.
- The application of blockchain technology to settlement and clearing potentially has some benefits:
  - **Certainty:** Transactions can be made to be irrevocable, increasing accuracy.
  - **Speed:** Transactions can be cleared and settled nearly instantaneously, reducing settlement risk.
  - **Reduced Costs:** Costs of supervision and IT infrastructure will see reduced costs.
  - **Transparency and Security:** Each transaction in the ledger is openly viewed and verified by the community of networked users and makes it easy to audit by participants, supervisors and regulators. This provides increased security as the history of transactions is publicly available.



# Adaptation to Today's Economy

## Asset Ownership

- **Nasdaq OMX** is testing a blockchain private trading model on the Nasdaq Private Market. This venture could streamline private trading, giving pre-IPO companies a more reliable way of auditing trades in their stock.
- Nasdaq built a prototype using what's called the Open Assets Protocol. Essentially, this is a way of "coloring" bitcoin transactions so they represent an asset other than a bitcoin (*i.e.*, a stock trade). The prototype runs atop the Bitcoin blockchain.
- This private model could lead to innovations for asset ownership. In 2015, **Overstock.com**, a public company, filed a prospectus with the U.S. Securities and Exchange Commission ("SEC") in an effort to win regulatory approval for its plan to use the block chain as a means of issuing stock online. Open source projects like Counterparty are exploring the same concept.

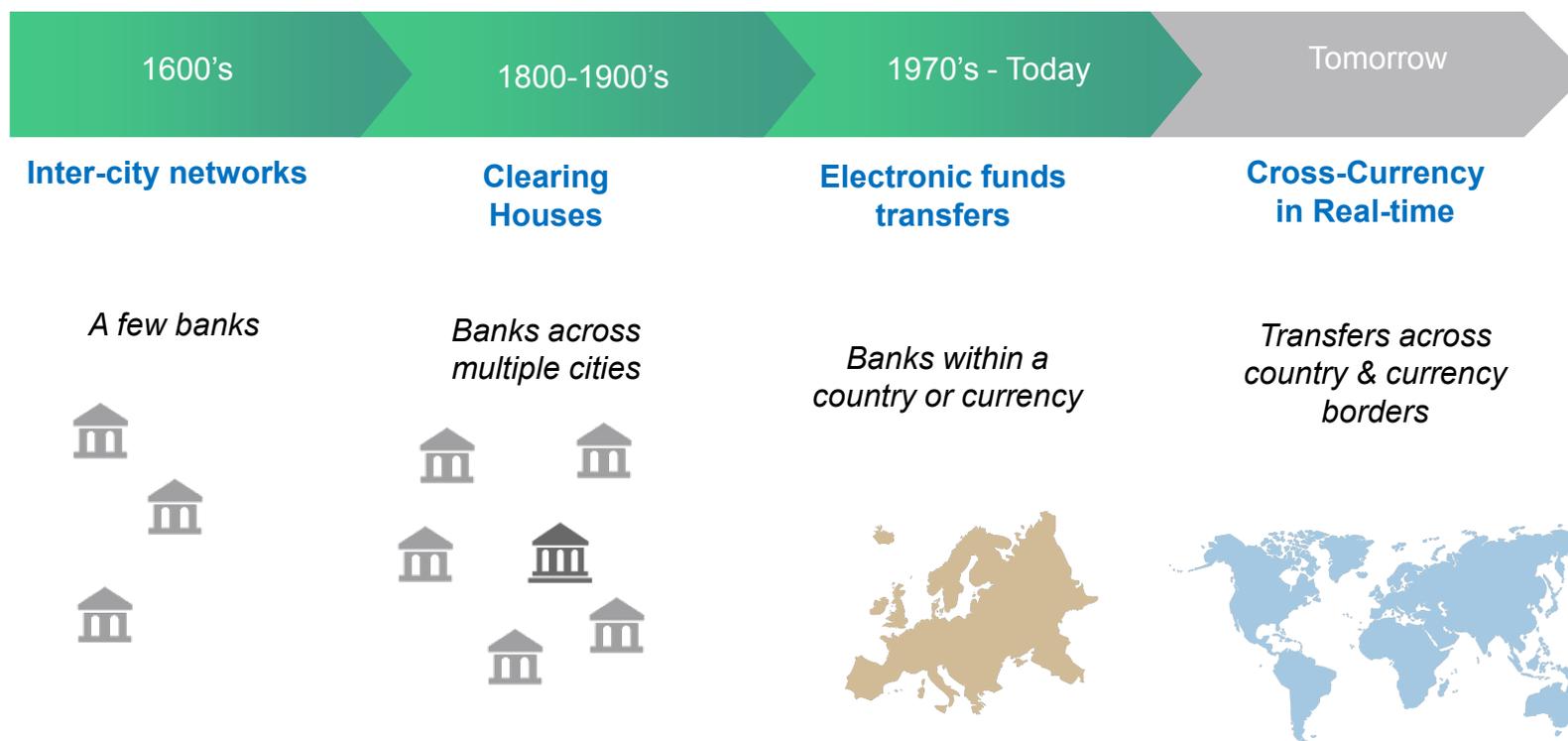
"The private market can go from quill pins and parchment into the 21st century."

—James Angel  
Georgetown University Professor of Finance

# Adaptation to Today's Economy

## Cross-Currency Payment Networks

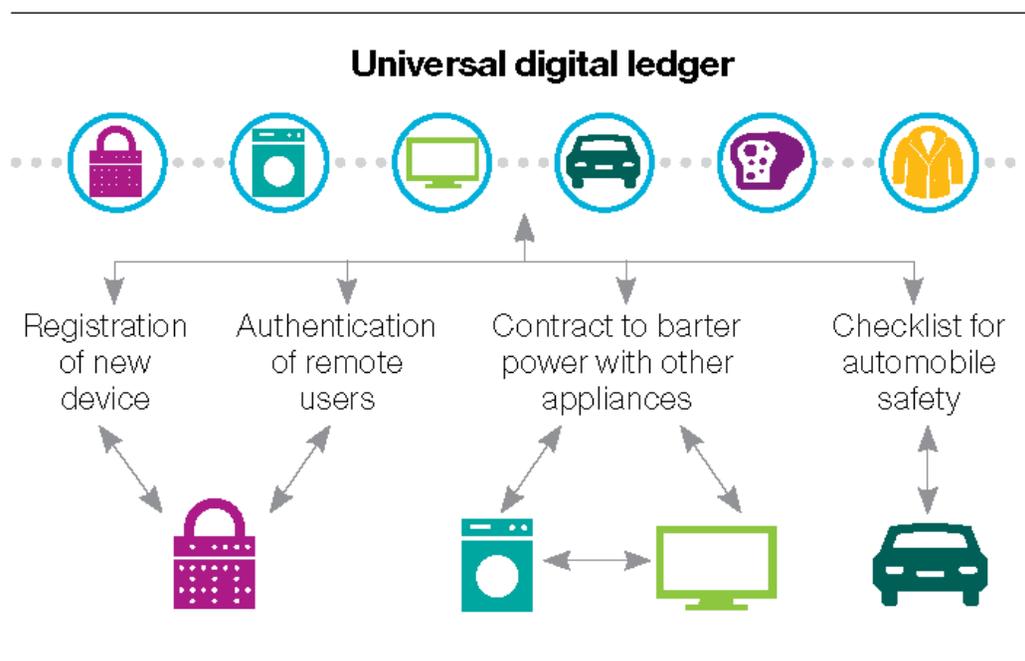
- The World Bank estimates that individuals in the developed world sent **U.S. \$436 billion** back home to their families in poorer countries in 2014. **U.S. \$80 billion** is transferred from the U.S. to Latin America each year
- Financial institutions and multinational corporations transfer currencies cross-border to affiliates as part of risk management and other processes.



# Adaptation to Today's Economy

## Smart Contracts and “Device Democracy”

- **IBM** is embracing utilizing blockchain technology to power a framework for facilitating transaction processing and coordination among interacting devices. IBM's research arm is using the code that powers the blockchain to create a new system that could be used to create digital contracts that would be recorded publicly and securely on a public network. IBM is said to be aiming to open-source the code it is developing.



Source: IBM Institute for Business Value Report, *Device Democracy, Saving the Future of the Internet of Things*

# Adaptation to Today's Economy

## Emerging Markets

Just as developing countries were quick to adopt mobile technologies, emerging markets may be more ready to adapt blockchain technology to a wider array of services and sectors.

- **China** currently accounts for at least 50% of the global bitcoin network mining power. More than 80% of bitcoin transactions are driven by the Chinese yuan. Chinese conglomerate Wanxiang Group, one of the nation's largest auto parts manufacturers, is investing in the development of blockchain technology.
- More than 90% of the customers for Xapo's transactional wallets are from developing countries, including **India, Russia, Brazil** and **Indonesia**.
- **Kenya, Uruguay** and **Panama** are just a few of the countries playing host to venture-backed digital currency companies that are using blockchain technology to tackle regional payments challenges.
- The **Philippines** intends to put its Peso put on the blockchain.
- **Factom** has partnered with **Honduras** on a new land title registry initiative.
- In **Estonia**, LHV Bank has backed a project to create a financial services platform and money transfer app that utilizes bitcoin to facilitate transactions.

"I want to extend banking to the 3.2 billion people who are going to come into the middle class over the next 15 years...so I need a much lower cost of keeping a ledger. Blockchain offers some intriguing possibilities there."

—Arvind Krishna, Senior Vice President of IBM Research

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**Current Legal Environment**

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# Current Legal Environment

## U.S. Federal Legislative Landscape

- There has been limited Congressional attention concerning digital currencies to date, and no attention specifically devoted to blockchain. Only two committees have held hearings directly on the topic.
- In November 2013, the Senate Committee on Homeland Security and Government Affairs held a hearing titled “Beyond Silk Road: Potential Risks, Threats, and Promises of Virtual Currencies.”
- In April 2014, the House Committee on Small Business held a hearing titled “Bitcoin: Examining the Benefits and Risks for Small Business.”
- Digital currencies have also been mentioned as part of the Q&A in other Congressional hearings by the Federal Reserve Chair, SEC Chair, CFTC Chair, and the Attorney-General.
- No proposed legislation on digital currencies has advanced out of Committee.



# Current Legal Environment

## U.S. Federal Legislative Landscape: What's To Come

- While to date the focus of the U.S. Congress has been limited to bitcoin and the use of digital currencies, greater scrutiny should be expected with more coverage around the use of blockchain technology and the collective interest from the financial institutions.
- We would expect to see informational hearings on the issue of blockchain technology in the U.S., and similar interest abroad.
- We could see the U.S. Congress apply pressure on the regulatory agencies (*e.g.*, CFTC, SEC, Fed) to look into and provide reports on the use of the technology or even update regulations to account for the use of such technology and/or digital currencies.
- Legislation is also a possibility, although it seems unlikely until Congress has a better idea of the potential new uses of blockchain technology.

# Current Legal Environment

## U.S. State Regulation

Exchanging digital currencies for sovereign currencies or for other digital currencies is “money transmission” and subject to **Washington** state licensure.

**New York** released the first regulatory framework for virtual (*i.e.*, cryptocurrencies) currencies on June 3, 2015.

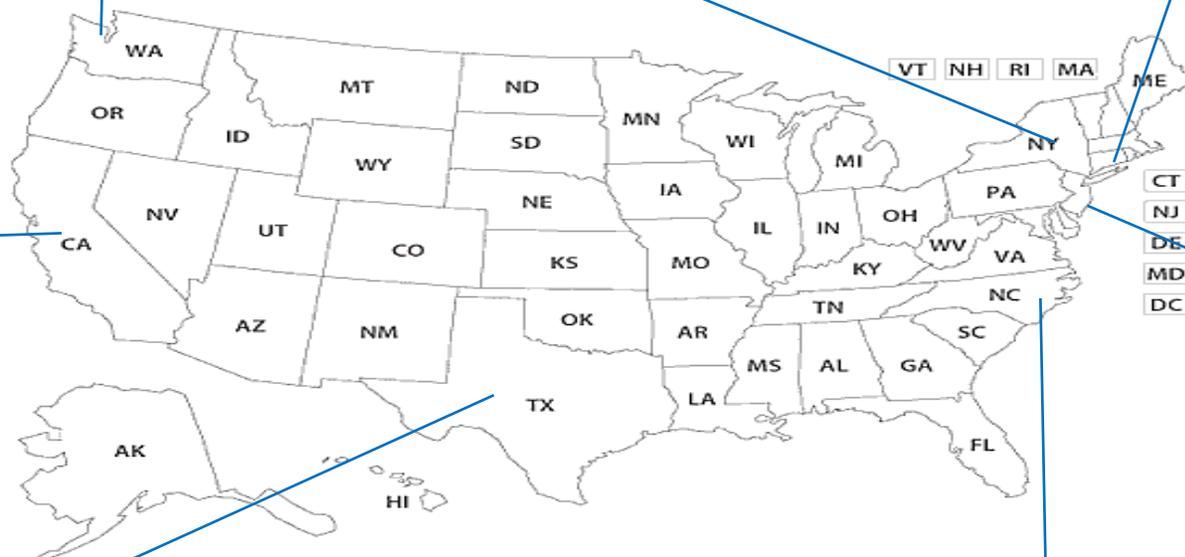
The Connecticut House of Representatives passed a bill on May 7, 2015 that would give the state increased authority over money services businesses that deal with digital currencies.

In June 2014, California became the first state to affirmatively legalize the use of virtual currencies. In February 2015, a bill was introduced to bring virtual currency business under California’s Money Transmission Act.

Most digital currency exchanges that do business with **Texas** consumers will be subject to state licensing rules for their money wiring services

The North Carolina House of Representatives passed a bill on May 12, 2015 that would enact a new money transmitter law to address digital currencies.

In May 2015, New Jersey legislators introduced a bill that would give tax breaks to digital currency businesses if those businesses create local jobs and would provide for some regulatory framework for digital currency businesses.



# Current Legal Environment

## International Regulation

In June 2014, Canada indicated that virtual currencies (*i.e.*, cryptocurrencies) are “money service businesses” under Canadian anti-money laundering law.

The European Central Bank is taking a supervisory role, monitoring the extent to which the financial institutions it supervises are involved with digital currencies and assessing related risks.

In December 2013, China’s central bank prohibited banks and payment institutions in China from dealing in bitcoins, but China continues to be a leader in Bitcoin mining.

Russia’s Finance Ministry has drafted legislation that could effectively ban digital currencies.

Brazil has enacted legislation addressing digital currencies, but is still evaluating whether to formally regulate them.

The Reserve Bank of Australia indicated that the current limited use of digital currencies pose a limited risk to the financial system and competition, and recommended regulation and international coordination.

# Current Legal Environment

## U.S. Regulatory Oversight



“Bitcoin . . . raises issues that cut across a number of agencies. [bitcoin] comes into [the CFTC’s] jurisdiction if someone, for example, wants to trade a contract, like a derivatives contract, which is based on bitcoin. . . . [O]ur responsibility in that kind of situation is to prevent fraud and manipulation.”

- CFTC Chairman Timothy Massad, Testimony before the House Appropriations Subcommittee on Agriculture, Rural Development, Food and Drug Administration and Related Agencies (February 11, 2015)

“[W]hether a virtual currency is a security under the federal securities laws, and therefore subject to our regulation, is dependent on the particular facts and circumstances at issue,” but “regardless of whether an underlying virtual currency is itself a security, interests issued by entities owning virtual currencies or providing returns based on assets such as virtual currencies likely would be securities and therefore subject to our regulation.”

- SEC Chair Mary Jo White, in response to an inquiry from the Senate Committee on Homeland Security and Government Affairs (August 2013)

# Current Legal Environment

## U.S. Enforcement Actions

### SEC

- In July 2013, the SEC charged Trendon Shavers of Texas with defrauding investors in a bitcoin-denominated Ponzi scheme (bitcoin Savings & Trust). Shavers and bitcoin Savings and Trust were ordered to pay a combined \$40.7 million.
- In February 2014, the SEC announced a 2-week suspension of trading for Imogo Mobile Technologies—a company developing a mobile platform for bitcoin—“because of questions that have been raised about the accuracy and adequacy of publicly disseminated information concerning, among other things, [the company’s] business, revenue, and assets.”
- In June 2014, the SEC fined bitcoin entrepreneur Erick Voorhees in connection with two offerings of unregistered securities valued in bitcoin. Voorhees had published prospectuses online and actively solicited investors to buy shares using bitcoin.

### CFTC

- On September 17, 2015, the CFTC brought its first action against an unregistered bitcoin options trading platform, the San Francisco-based Coinflip, Inc., and its CEO for violations of the Commodity Exchange Act and CFTC regulations. CFTC required a cease and desist and compliance with specific undertakings. The CFTC’s Order can be read to imply that they do not view bitcoin as a currency.

### DOJ

- In November 2014, more than a year after the SEC action, the U.S. Attorney for the S.D.N.Y. announced the unsealing of a criminal complaint against Trendon Shavers, the operator of bitcoin Savings & Trust. Shavers pleaded not guilty in March 2015.

# Current Legal Environment

## U.S. Enforcement Actions (cont'd)

### FinCen

- On May 5, 2015, Ripple Labs Inc. and XRP II, LLC were fined for willful violations of the Bank Secrecy Act related to their engagement in the sales of approximately \$1.3 million in “virtual” currency; they also entered into a settlement agreement with the U.S. Attorney’s Office avoiding criminal charges. The companies were assessed a civil penalty of \$700,000 and required to perform remedial undertakings, including establishing AML/BSA compliant policies and programs, an external audit, and making “enhancements” to the Ripple protocol.

### Joint Enforcement Actions – Silk Road

- In November 2014, the Department of Justice, the United States Attorney’s Office for the Southern District of New York, the Federal Bureau of Investigation, Homeland Security Investigations, Drug Enforcement Administration, Internal Revenue Service, Bureau of Alcohol, Tobacco, Firearms and Explosives, Secret Service, U.S. Marshals Service, the Department of Treasury’s Office of Foreign Assets Control, and law enforcement agencies of approximately 16 foreign nations took action against over 400 Tor sites—websites accessed via a protocol that allows for user anonymity. Sites included Silk-Road 2.0 and dozens of other “dark market” websites. In September 2014, Charles Shrem and Robert Faiella—accused of using Shrem’s company, BitInstant, to launder funds—entered guilty pleas for their involvement in the original Silk Road scheme.
- In May 2015, Silk Road operator Ross Ulbricht was sentenced to life in prison and ordered to pay nearly \$200M for his role in running the site.

“The blockchain is poised to become the dial tone for the 21st-century global economy.”

- Laura Shin, *Forbes*, *Money’s New Operating System* (September 28, 2015)

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**Navigating Challenges**

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# Navigating Challenges

## Anti-Money Laundering

### United States

- As articulated by FinCen in a series of guidance letters published between 2013 and 2015, “virtual” currency administrators and exchangers who (1) accept and transmit virtual currency or (2) buy or sell convertible currency can qualify as money services businesses (“MSBs”) subject to FinCEN’s registration, reporting, and recordkeeping regulations. This includes commodity-backed token services, which can be interpreted as broadly applicable to businesses seeking to issue blockchain-based assets.
- Digital currency exchange platforms and payment processors characterized by MSBs will likely be subject to additional reporting and compliance requirements pursuant to the Bank Secrecy Act as well as other MSB requirements.
- As described above, FinCen fined Ripple Labs Inc. and XRP II, LLC for willful violations of the Bank Secrecy Act related to their engagement in the sales of approximately \$1.3 million in virtual currency; they also entered into a settlement agreement with the U.S. Attorney’s Office avoiding criminal charges. Ripple was found to have violated the BSA when it first started selling virtual currency on March 6, 2013 without registering as a MSB, and was also cited for its failure to establish an AML program. XRP—which was a FinCEN-registered MSB—was cited for its failure to implement and maintain an adequate AML program.

### International

- Digital currency businesses are MSBs under **Canadian** AML regulations. As a result, companies will be required to register with the Financial Transactions and Reports Analysis Centre of Canada, implement compliance programs, maintain records and report suspicious or terrorist-related property transactions and determine if any of the customers are “politically exposed persons.” The law also applies to digital currency exchanges outside Canada that “direct services at persons or entities in Canada.”

### EUROPOL

- Has called for police to be given increased power for AML efforts regarding “virtual” currencies.

# Navigating Challenges

## Antitrust

### Overview

- Competitor contacts are not inherently illegal but caution is required. Section 1 of the Sherman Act prohibits agreements that unreasonably restrain trade. Where there are potentially pro-competitive benefits to a competitor collaboration, U.S. courts balance those benefits against the potential anticompetitive harms.
- This “rule of reason” analysis takes into account the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual and probable.

### Concerns

- **Improper Competitor Interactions.** Although there are safe harbors, competitor interactions should be structured to avoid the exchange of competitively sensitive information, including certain types of customer data or pricing. Establishing guidelines regarding procedures for information sharing will minimize risk.
- **Exclusionary Conduct.** Although there is a strong procompetitive rationale for many standard setting activities, exclusion of competitors may give rise to a claim of group boycott which is a per se violation of Section 1. It is generally acceptable to set reasonable eligibility criteria for participation in a group effort (e.g., if only financial institutions with certain data security protocols may participate due to data privacy or security concerns).
- **Ownership of Technology.** Industry standards are often crucial to interoperability and creation of new technologies but there may be antitrust implications regarding licensing of standard essential patents.

Companies may request an advisory opinion, or “business review” letter, from the Antitrust Division of the U.S. Department of Justice regarding the antitrust implications of a particular competitor collaboration.

# Navigating Challenges

## Data Privacy and Security

Blockchain ledgers could be an attractive target for hackers. After a cyberattack, a government investigation is sure to follow.

At present, there are overlapping cybersecurity regulators:

- Law enforcement from the relevant jurisdiction(s)
- U.S. Federal Trade Commission
- U.S. Securities and Exchange Commission
- U.S. Department of Justice
- State Attorney's General
- U.S. Office of Management and Budget (for U.S. government contractors)
- U.S. Federal Communications Commission

These regulators are developing detailed positions regarding what cybersecurity practices are reasonable and unreasonable, although those standards can change quickly.

The clear trend—especially in cases brought by the FTC—is moving from prosecuting egregious violations and toward challenging “gray areas” in which security breaches may have been a result of inattention rather than intentional misconduct.

“People want to believe that there’s going to be this mythical coin that comes out of Silicon Valley that the world starts using and that all of Wall Street just falls into the ocean’.... But that is simply not going to happen. Layers of infrastructure need to be built first, and consumers and regulators need to be persuaded to trust blockchain – two prerequisites that give financial heavyweights an enormous early edge.

- Laura Shin, *Forbes*, *Money’s New Operating System* (September 28, 2015)
- (quoting Adam Ludwin, Chain.com founder on his collaboration with Nasdaq)

# Navigating Challenges

## Financial Regulation

- Bank service corporation supervision when services are provided to banks.
- Legal authority issues for bank consortia when services are provided to other financial institutions.
- Consortium issues for banks with material supervisory issues – making investments compared with engaging in activities
- Changes regarding the transfer of funds, settlement, asset classification, record keeping, clearing and execution could lead to new regulations or the need for interpretive statements or no-action relief from existing regulations.
- Resolution issues if product becomes a critical function for one or more banks subject to resolution planning.
- Bank regulatory focus on cybersecurity issues.
- Considerations of how changes fit under existing regulations and whether regulatory interpretation or no-action relief may be necessary.

“At its core, bitcoin is a decentralized protocol that enables exchange of value among parties around the world, giving it potential to alter the financial services landscape.”

- Jay Reinemann, BBVA Ventures executive director

# Navigating Challenges

## Global Trade Sanctions

There is a complex web of potentially applicable sanctions regulations:

- United States Office of Foreign Assets Control (“OFAC”) Sanctions
- European Union
- United Nations
- Other Countries

OFAC requires compliance with all sanctions rules and regulations, but:

- The agency does not mandate the existence of, or provide robust guidance on the required form of, an adequate program.
- There is no one-size-fits-all approach – and each institution’s program needs to be tailored to address specific needs, risks, and transactions (including jurisdiction, customer base, partners, complexity of cross-border transactions)

Challenges:

- Significant challenges are associated with ensuring compliance on a “pseudonymous” open ledger.
- Closed or semi-private ledgers could screen against applicable sanctions lists as a condition to entry.

“We’re still relying on the traditional banking system to move large amounts of funds. What makes us different is we store our transaction records on blockchain, allowing for much better security, KYC (know your customer) and anti-money laundering security.”

- Digital CC chairman  
Zhenya Tsvetnenko

# Navigating Challenges

## Intellectual Property

Recent developments in intellectual property law regarding computer software or computed implemented programs will bear on the development of blockchain technology and the ability for **patent protection, copyright protection and trade secret protection**.

As new uses of blockchain technology are developed, there are many considerations with respect to IP rights for such new innovations:

- Blockchain technology is open-source technology.
- New products may be built on top of the Bitcoin blockchain, linked to the Bitcoin blockchain or on separate re-creation of the Bitcoin blockchain. Some products may be part of a closed blockchain network while others in an open blockchain network. How should these different approaches be viewed?
- Can companies come up with alternative ways to protect/profit from the development and ownership of proprietary blockchain software in light of the heightened burden for patent eligibility in the aftermath of the Supreme Court's *Alice Corp. v. CLS Bank* decision?
- When new ideas and innovations are developed as part of a consortium, who maintains intellectual property rights?

Somewhat ironically, blockchain technology may help to protect IP rights by allowing easier authentication and transfer of IP rights.

# Navigating Challenges

## Legislative Landscape

Industry efforts surrounding blockchain technology are likely to spark the interests of lawmakers on Capitol Hill. As companies are deciding how to implement blockchain technology, it is also important to consider the political reaction to implementing the new technology.

- We could see informational hearings surrounding blockchain technology, particularly regarding its use in the financial sector.
- As the use of blockchain technology develops and gains more buzz, we could see Congress apply pressure on regulatory agencies.
- U.S. federal legislation seems unlikely until Congress has a better idea of the potential new uses of blockchain technology.



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**Questions?**

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# Judith Alison Lee

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Judith A. Lee is a partner in the Washington, D.C. office and Co-Chair of the firm's International Trade Practice Group. Ms. Lee practices in the areas of international trade regulation, including USA Patriot Act compliance, Foreign Corrupt Practices Act, economic sanctions and embargoes, and export controls. Ms. Lee also advises on issues relating to virtual and digital currencies, blockchain technologies and distributed cryptolegders.

Ms. Lee was selected by *Chambers Global: The World's Leading Lawyers for Business* as an international Leading Lawyer for USA International Trade in 2013. She was also ranked by *Chambers and Partners* as a Leading International Trade Lawyer in Export Controls, Economic Sanctions, and FCPA in its *Chambers Global: The World's Leading Lawyers for Business 2012*. *Chambers and Partners* also selected Ms. Lee as a Leading International Trade Lawyer in 2007 – 2015 in its *Chambers USA: America's Leading Lawyers for Business Guide* and she is listed in the *Best Lawyers in America®* guides for 2006 – 2016. She is included in *The International Who's Who of Trade and Customs Lawyers* for 2009 – 2013 and *The International Who's Who of Business Lawyers 2012*. Ms. Lee is also included in *Euromoney's* 2007 and 2008 "Guide to the World's Leading International Trade Lawyers," U.S. Section. In 2006, Ms. Lee was named by the *Washington Business Journal* as one of the Best Lawyers in the Washington, D.C. area for International Trade and Finance Law and has been named continually over the years by *The Washington Post* as one of Washington D.C.'s *Super Lawyers*. Ms. Lee was most recently chosen by the Ethisphere Institute as one of two of the 2013 "Attorneys Who Matter" in the field of Trade/Export Compliance, on the basis of counsel "who are best prepared to handle any issue around their particular specialty." She was also named a 2014 Top Attorney by *Washington Post Magazine*.

Ms. Lee currently serves on the Export Controls Advisory Board for American Conference Institute (ACI). She is the Chair of the International Sales Subcommittee on Export Controls, Sanctions and Anti-Corruption of the International Bar Association and serves as an officer of the International Bar Association's International Sales Committee. Ms. Lee is the past Co-Chair of the American Bar Association Committee on Export Controls and Embargoes, and was a past chair of the American Bar Association Customs Law Committee. Ms. Lee was appointed by the Chief Judge of the Court of International Trade to that court's Rules Advisory Committee and Jurisdiction Committee. She is also a past member of the Board of Directors of the Customs and International Trade Bar Association.

Ms. Lee is a member of the Bars of Virginia and the District of Columbia. Ms. Lee received her law degree in 1987 from the Marshall-Wythe School of Law at the College of William and Mary and her bachelor of arts in 1984 from Mount Holyoke College, where she studied Chinese and politics. In 1983 and 1984, she attended Donghai University in Taiwan, where she studied Chinese language, culture and politics. Ms. Lee is an enrolled member of the Choctaw Nation of Oklahoma. She is a member of Gibson, Dunn & Crutcher's Diversity Committee.

# Arthur S. Long

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Arthur S. Long is a partner in the New York office of Gibson, Dunn & Crutcher, where he is a Co-Chair of Gibson Dunn's Financial Institutions Practice Group and a member of the Securities Regulation Practice Group. Mr. Long focuses his practice on financial institutions regulation, advising on the regulatory aspects of M&A transactions; bank regulatory compliance issues; Dodd-Frank issues, including the regulation of systemically significant financial institutions (SIFIs) and related heightened capital and liquidity requirements; resolution planning; and Volcker Rule issues with respect to bank proprietary trading and private equity and hedge fund operations. In addition, Mr. Long has significant experience with bank securities offerings and issues particular to foreign banks operating or seeking to operate in the United States, and experience with emerging legal issues in the area of virtual currencies.

Among Mr. Long's recent publications are "The New Corporate Governance Rules for Significant Foreign Banks Operating in the United States" in *Risk, Governance & Compliance for Financial Institutions 2015*, *The Financial Services Regulation Deskbook*, the Practising Law Institute treatise on the Dodd-Frank Act, and "The New Autarky? How U.S. and UK Domestic and Foreign Banking Proposals Threaten Global Growth," a Policy Analysis of The Cato Institute.

Prior to joining Gibson Dunn, Mr. Long practiced with Davis Polk & Wardwell LLP for 16 years.

Mr. Long advised Banco Santander, S.A. in connection with its acquisition of Sovereign Bancorp, Inc., which resulted in protested applications to the Federal Reserve Board, the Office of Thrift Supervision and the New York State Banking Department. He also advised one of the first-round filing international banks on its resolution plan required by Section 165 of the Dodd-Frank Act.

Mr. Long served as law clerk to U.S. Supreme Court Justice Clarence Thomas from 1997 to 1998, and to Judge J. Michael Luttig of the U.S. Court of Appeals, Fourth Circuit from 1993 to 1994. In 1993, he graduated *magna cum laude* from Harvard Law School, where he served as the Supreme Court Editor for the *Harvard Law Review*. He received his A.B. *magna cum laude* from Harvard College in 1989.

# Jeffrey L. Steiner

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Jeffrey L. Steiner is counsel in the Washington, D.C. office of Gibson, Dunn & Crutcher. He is a member of the firm's Financial Institutions, Energy, Regulation and Litigation, Securities Regulation and Corporate Governance, Investment Funds and Public Policy practice groups. Mr. Steiner advises a range of clients, including commercial end-users, financial institutions, dealers, hedge funds, private equity funds, clearinghouses, industry groups and trade associations on regulatory, legislative and transactional matters related to OTC and listed derivatives, commodities and securities. He frequently assists clients with compliance and implementation issues relating to the Dodd-Frank Act, the rules of the Commodity Futures Trading Commission (CFTC), the Securities and Exchange Commission (SEC), the National Futures Association and the prudential banking regulators. He also helps clients to navigate through cross-border issues resulting from global derivatives requirements, including those resulting from the Dodd-Frank Act, the European Market Infrastructure Regulation (EMIR) and the rules of other jurisdictions. Mr. Steiner also advises clients on issues related to virtual and digital currencies and blockchain technology.

*Chambers Global: The World's Leading Lawyers for Business 2015* has ranked Mr. Steiner as an international leading lawyer for his work in derivatives. *Chambers and Partners* has also ranked Mr. Steiner as a leading derivatives lawyer in its *Chambers USA: America's Leading Lawyers for Business Guide*.

Prior to joining Gibson, Dunn & Crutcher, Mr. Steiner was special counsel in the Division of Market Oversight at the CFTC where he handled issues relating to trading and execution of futures and swaps, designated contract markets (DCMs), market maker and incentive programs, exempt markets, reporting, swap data repositories (SDRs) and off-exchange derivatives transactions (block trades, EFRPs). He served as team lead for the Real-Time Public Reporting of Swap Transaction Data rulemaking team for both the proposed and final rules, both of which he presented before the CFTC for public vote. While at the CFTC, he also worked on resolving and advising on issues relating to Title VII of the Dodd Frank Act, including reporting, trading and execution in all asset classes (i.e., interest rates, credit, FX, equity and other commodity), SDRs, swap execution facilities (SEFs), block trades and extraterritoriality. Prior to being a special counsel at the CFTC, he served as an attorney-advisor in the CFTC's Division of Market Oversight from 2009 - 2010.

Mr. Steiner began his career in private law practice where he focused on representing clients on OTC derivatives, futures and commodities related matters, capital markets transactions and hedge fund formation.

Mr. Steiner is a frequent speaker on issues relating to the Dodd-Frank Act, the CFTC and virtual currencies (e.g., Bitcoin). He graduated from Tulane Law School in 2004. While at Tulane Law School, he served as a Business Editor of the *Tulane Environmental Law Journal*. Mr. Steiner received his B.B.A. in 2001 from Emory University's Goizueta Business School.

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